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**section**

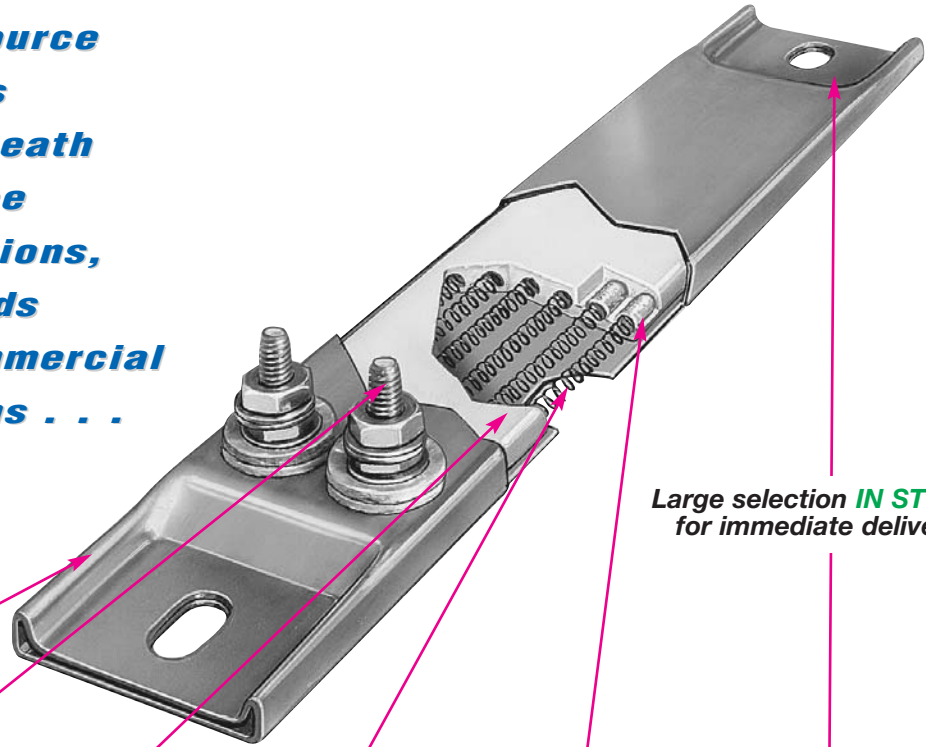
***Strip Heaters***



## Ceramic Insulated

# CHANNEL STRIP HEATERS

**A Reliable Heat Source  
with Seamless  
Stainless Steel Sheath  
For Flat Surface  
Mounting Installations,  
Used in Hundreds  
Of Industrial and Commercial  
Heating Applications . . .**



**Large selection *IN STOCK*  
for immediate delivery**

**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 1200°F (650°C).

**B** Stainless  
Steel  
10-32

threaded screws are standard and are securely fastened. Various termination configurations and options are available. See pages 8-4 through 8-7.

**C** Specially  
selected  
and de-

signed 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 welded shut to prevent moisture and contaminants from entering the heater. Tabs are not available on 1/4" thick by 5/8" wide heaters.

### Typical Applications

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



**Note:** Channel Strip Heaters are available with fins for air heating applications. See pages 8-12 through 8-15.



### Agency Approvals

**Channel Strip Heaters** have a combined certification as Recognized Components by UL, and as Certified Components by CSA (UL File Number E65652), after testing to meet Standard UL499 and Canadian Standard C22.2 No. 72.

*If you require UL/CSA Agency Approval, please specify when ordering.*



### Ceramic Insulated Channel Strip Heaters

**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.

### 4 TEMPCO offers Channel Strip Heaters in four rectangular sizes

#### 5/8" WIDE BY 1/4" THICK

Available without mounting tabs only.

#### 1" WIDE BY 5/16" THICK

Available with or without mounting tabs. When supplied with Type L lead wire termination, mounting tabs are not available.

#### 1 1/2" WIDE BY 5/16" THICK

Available with or without mounting tabs. When supplied with Type L lead wire termination, mounting tabs are not available.

#### 1 1/2" WIDE BY 3/8" THICK

Available with or without mounting tabs. When supplied with Type L lead wire termination, mounting tabs are not available.  
(3/8" thick heaters have radius corners)



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

#### PERFORMANCE RATINGS

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

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

#### ELECTRICAL SPECIFICATIONS

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

**Maximum Recommended Voltage w/ Leads:** 240VAC

**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

5/8" wide heaters ..... +.000, -.005"

1" and 1-1/2" wide heaters ..... +.000, -.010"

##### Thickness

1/4" thick heaters ..... +.000, -.005"

5/16" and 3/8" thick heaters ... +.000, -.008"

(3/8" thick heaters have radius corners)

##### Length

Up to 24" ..... ±1/16"

Over 24" ..... ±1/8"

##### Mounting Slot Size

Standard ..... 5/16" × 1/2"

Special ..... 1/2" × 5/8"

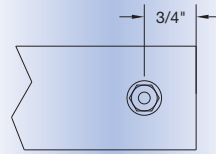
### Screw Terminal Terminations

#### Type T1

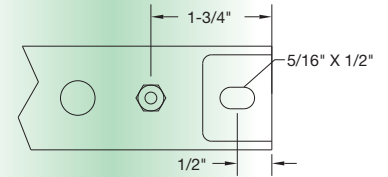
- 10-32 Screw Terminals at each end
- Available on 1" and 1-1/2" wide heaters



#### No Mounting Tabs

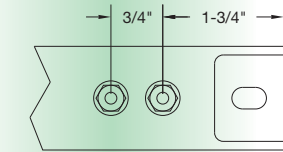
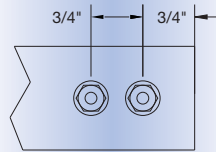


#### With Mounting Tabs



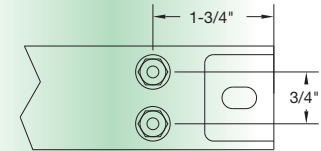
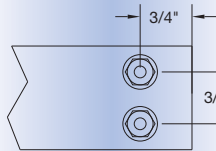
#### Type T2

- 10-32 Screw Terminals (Tandem) at one end
- Available on 1" and 1-1/2" wide heaters



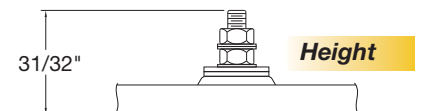
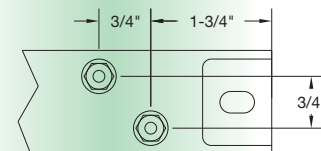
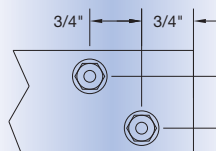
#### Type T3

- 10-32 Screw Terminals (Parallel) at one end
- Available on 1-1/2" wide heaters only



#### Type T4

- 10-32 Terminals offset at one end
- Available on 1-1/2" wide heaters only





### Lead Wire Terminations

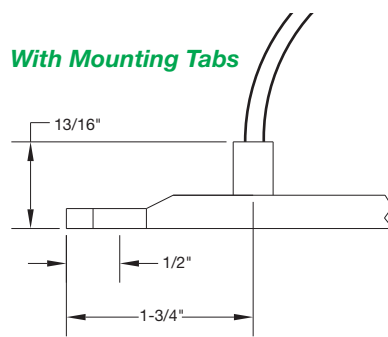
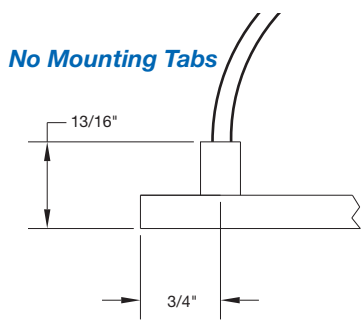
**Type L** Flexible lead wires exit from end of heater. 10" long leads standard; if longer leads are required, specify. Recommended only for tight quarters or where flexibility of the lead wire is required. Not available on heaters with tabs.

**Maximum Amps:** 10 at 240VAC **Maximum Volts:** 240



**Type L1** Flexible lead wires exit from top of heater. 10" long leads standard; if longer leads are required, specify.

**Maximum Amps:** 10 at 240VAC **Maximum Volts:** 240



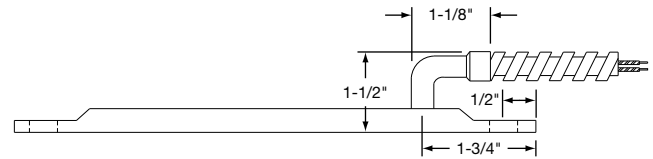
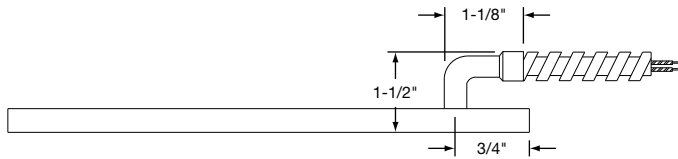
**Type R2** Right-angle armor cable prevents contamination from getting into the heater. 10" of armor over 12" long leads is standard; if longer leads or armor are required, please specify.

**Maximum Amps:** 10 at 240VAC **Maximum Volts:** 240

**Type R2A** Galvanized cable

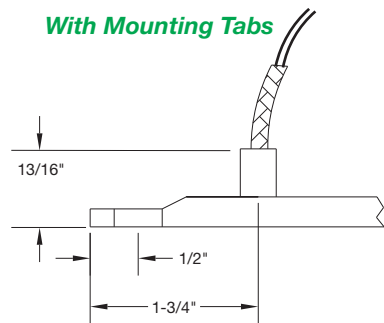
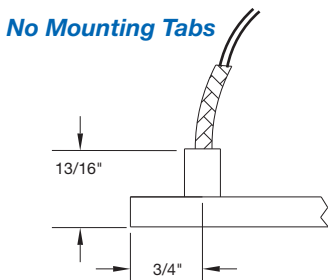
**Type R2B** Stainless steel cable

**Type R2C** Elbow and leads only (no cable)



**Type W1** Wire braid provides strength and protection to the lead wire insulation, offering sharp bending not possible with armor cable. 10" of wire braid over 12" long leads is standard; if longer leads or braid are required, specify.

**Maximum Amps:** 10 at 240VAC **Maximum Volts:** 240





### Terminal Protection

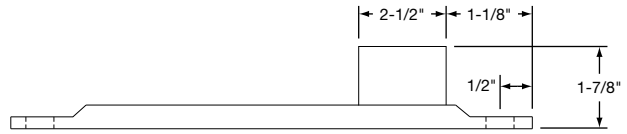


**Type C** Terminal box has a 1/2" trade size knockout (actual diameter 7/8"). Box provides excellent protection to exposed terminals. If armor-protected lead wires are required, specify armor and lead length. Available on 1" and 1-1/2" wide heaters.

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



No Mounting Tabs



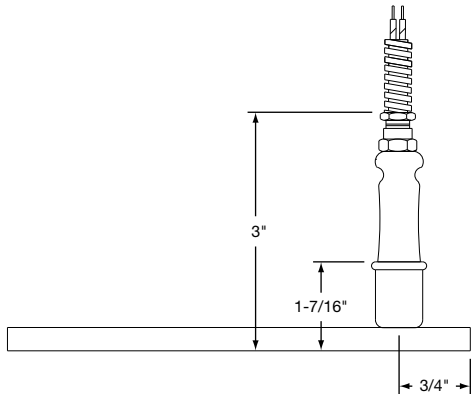
With Mounting Tabs



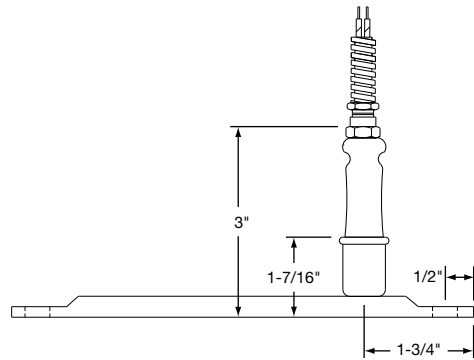
**Type P** High-Temperature Quick Disconnect Plug. If armor-protected lead wires are required, specify armor and lead length. Available on 1-1/2" wide heaters only.

**Maximum Amps:** 15 at 240VAC **Maximum Volts:** 240

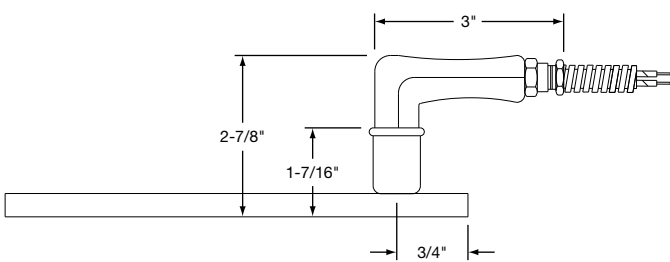
- Type P1A** Cup only (UT900)
- Type P1B** Cup and straight plug (H900)
- Type P1C** Cup and 90° plug (HW900)
- Type P1D** Cup, straight plug and galvanized cable
- Type P1G** Cup, 90° plug and galvanized cable



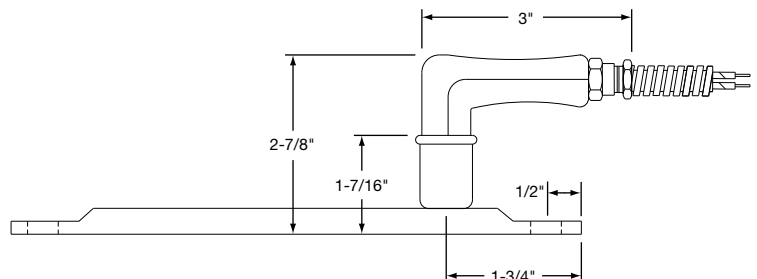
No Mounting Tabs (Type PID)



With Mounting Tabs (Type PID)



No Mounting Tabs (Type PIG)



With Mounting Tabs (Type PIG)



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



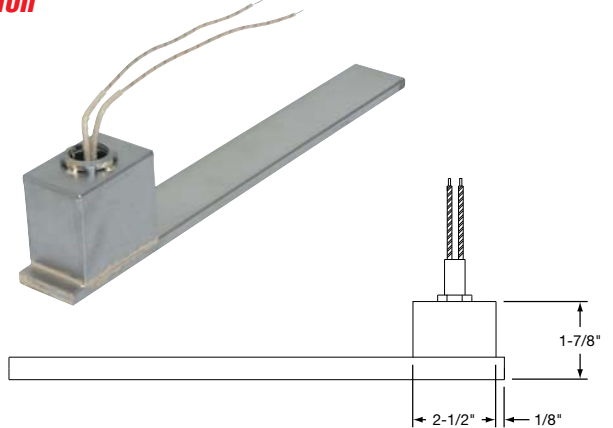
### Terminal Protection

**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 1 1/2" wide heaters only.

10" long leads standard; if longer leads are required, specify.

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

- Type MPA** Box only
- Type MPB** Box with prewired galvanized cable
- Type MPC** Box with prewired stainless steel cable
- Type MPD** Box with prewired wire braid



**Igloo™** Igloo™ two-piece ceramic terminal covers fully insulate the screw terminals and terminal lugs used in electrical hookup.

Available for Type T1 and Type T4 screw terminal styles.



### Ceramic Covers for Insulating Screw Terminals

#### Igloo™ Ceramic Covers

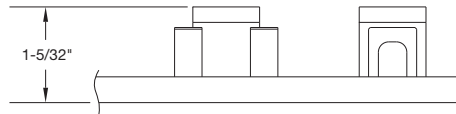
Igloo™ Ceramic terminal covers consist of two individual ceramic parts. With a tight-fitting cap and a solid base, an Igloo™ cover will fully insulate any standard #8 or #10 terminal lug used for electrical wiring hookups. Igloo™ covers can be assembled on all Channel Strip heaters with Type 1 and Type 4 screw terminals.



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



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



#### Ceramic Cap

Thread	Part Number
10-32	CER-102-101
10-24	CER-102-104
8-32	CER-102-105



The three ceramic cap sizes fit all three Igloo™ bases.

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™ and the screw terminal size.



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

# Strip Heaters



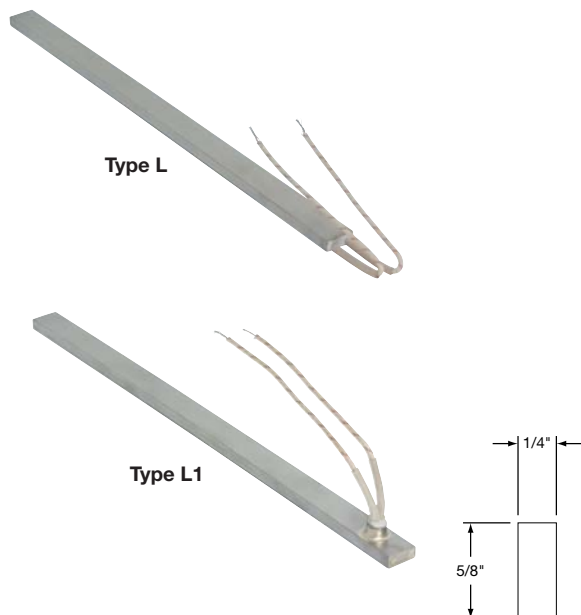
**CHANNEL STRIP**

## Standard (Non-Stock) Sizes and Ratings

### 5/8" × 1/4" (15.88 × 6.35 mm) Channel Strip Heaters

Part numbers shown are for heaters with Type L Termination with 10" plain leads or Type L1 Termination with 10" plain leads.

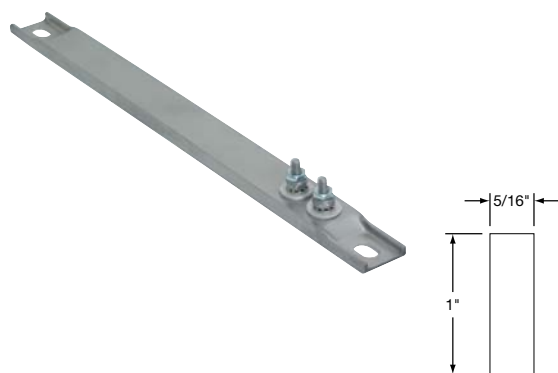
- > Additional available terminations: Type R2 and Type W1
- > Mounting tabs are not available on this size.



Length		Wattage	Watt Density		Type	Part Number	
in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>		120V	240V
1½	38.1	50	29	4	L	CSH00001	—
2	50.8	50	19	3	L	CSH00002	—
3	76.2	150	34	5	L	—	CSH00003
3	76.2	150	34	5	L1	—	CSH00004
4	101.6	200	33	5	L	CSH00005	—
5	127.0	240	30	5	L	CSH00006	—
5	127.0	240	30	5	L1	CSH00007	CSH00008
7	177.8	250	22	3	L1	CSH00009	—
9	228.6	350	24	4	L	CSH00010	CSH00011
9	228.6	350	24	4	L1	CSH00012	—
12	304.8	500	25	4	L	—	CSH00013
13	330.2	500	23	4	L	CSH00014	—
14	355.6	550	23	4	L1	—	CSH00015
18	457.2	900	29	5	L	CSH00016	—
18	457.2	900	29	5	L1	CSH00017	CSH00018
20	508.0	1000	29	5	L1	CSH00019	CSH00020

### 1" × 5/16" (25.4 × 7.94 mm) Channel Strip Heaters

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



Length		Wattage	Watt Density		Part Number	
in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
8	203.2	250	13	2	CSH00021	—
9½	241.3	300	13	2	CSH00022	—
11	279.4	350	13	2	CSH00023	—
12	304.8	400	13	2	CSH00024	CSH00025
14	355.6	450	13	2	CSH00026	CSH00027
15¼	387.4	500	13	2	CSH00028	CSH00029
17⅞	454.0	600	13	2	CSH00030	CSH00031
19½	495.3	600	12	2	CSH00032	CSH00033
21	533.4	750	14	2	CSH00034	CSH00035
22½	571.5	750	13	2	CSH00036	CSH00037
23¼	603.3	800	13	2	CSH00038	CSH00039
25½	647.7	900	14	2	CSH00040	CSH00041
27½	698.5	900	13	2	CSH00042	CSH00043
28¾	730.3	1000	13	2	CSH00044	CSH00045
30½	774.7	1000	13	2	CSH00046	CSH00047
33½	850.9	1000	12	2	CSH00048	CSH00049
35⅞	911.2	1000	11	2	CSH00050	CSH00051
38½	977.9	1250	13	2	CSH00052	CSH00053

**Ordering Information**

See page 8-11



### Standard (Non-Stock) and Stock Sizes and Ratings

#### 1-1/2" x 5/16" (38.1 x 7.94 mm) Channel Strip Heaters

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



Length in mm	Wattage	Watt Density		Part Number	
		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
5 1/4	133.4	125	28	4	*CSH00338 CSH00339
6	152.4	150	21	3	*CSH00318 *CSH00321
7 1/2	190.5	150	15	2	CSH00054 CSH00055
7 1/2	190.5	200	20	3	CSH00056 CSH00057
8	203.2	150	13	2	*CSH00058 *CSH00059
8	203.2	175	15	2	CSH00060 CSH00061
8	203.2	250	21	3	*CSH00062 *CSH00063
8	203.2	400	34	5	CSH00064 CSH00065
8	203.2	500	42	7	*CSH00066 *CSH00067
10 1/2	266.7	250	12	2	*CSH00068 *CSH00069
10 1/2	266.7	350	17	3	CSH00070 CSH00071
10 1/2	266.7	400	19	3	CSH00072 CSH00073
12	304.8	250	10	1	CSH00074 CSH00075
12	304.8	350	13	2	*CSH00076 *CSH00077
12	304.8	500	19	3	*CSH00078 *CSH00079
14	355.6	300	9	1	CSH00080 CSH00081
14	355.6	500	15	2	*CSH00082 *CSH00083
15 1/4	387.4	325	9	1	CSH00084 CSH00085
15 1/4	387.4	500	13	2	CSH00086 CSH00087
17 1/8	454.2	350	7	1	CSH00088 CSH00089
17 1/8	454.2	375	8	1	CSH00090 CSH00091
17 1/8	454.2	500	11	2	CSH00092 CSH00093
17 1/8	454.2	750	16	2	*CSH00094 *CSH00095
17 1/8	454.2	1000	21	3	CSH00096 CSH00097
19 1/2	495.3	350	7	1	CSH00098 CSH00099
19 1/2	495.3	500	9	1	CSH00100 CSH00101
19 1/2	495.3	750	14	2	CSH00102 CSH00103
19 1/2	495.3	1000	19	3	CSH00104 CSH00105
19 1/2	495.3	1200	23	4	CSH00329 *CSH00333

Length in mm	Wattage	Watt Density		Part Number	
		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
21	533.4	500	8	1	CSH00106 CSH00107
21	533.4	750	13	2	CSH00108 CSH00109
23 3/4	603.3	500	7	1	CSH00110 CSH00111
23 3/4	603.3	750	11	2	*CSH00112 *CSH00113
23 3/4	603.3	1000	15	2	CSH00114 CSH00115
23 3/4	603.3	1500	22	3	CSH00116 CSH00117
25 1/2	647.7	500	7	1	CSH00118 CSH00119
25 1/2	647.7	750	10	2	CSH00120 CSH00121
25 1/2	647.7	1000	13	2	CSH00122 CSH00123
26 3/4	679.5	700	9	1	CSH00124 CSH00125
26 3/4	679.5	750	9	1	CSH00126 CSH00127
26 3/4	679.5	1000	13	2	CSH00128 *CSH00129
29 1/4	743.0	750	8	1	CSH00130 *CSH00131
30 1/2	774.7	750	8	1	CSH00132 CSH00133
30 1/2	774.7	1000	11	2	CSH00134 CSH00135
30 1/2	774.7	1250	13	2	— CSH00136
33 1/2	850.9	750	7	1	CSH00137 CSH00138
34 3/8	879.5	1000	9	1	CSH00139 *CSH00140
35 3/8	911.4	1000	9	1	CSH00141 *CSH00142
35 3/8	911.4	1500	13	2	CSH00143 CSH00144
37 1/4	946.2	1500	13	2	*CSH00145 *CSH00146
38 1/2	977.9	800	7	1	CSH00147 CSH00148
38 1/2	977.9	1000	8	1	CSH00149 CSH00150
38 1/2	977.9	1500	12	2	CSH00151 CSH00152
42 1/2	1079.5	1250	9	1	CSH00153 CSH00154
42 1/2	1079.5	1500	11	2	CSH00155 CSH00156
47 1/8	1216.2	1350	9	1	— CSH00157
47 1/8	1216.2	2250	14	2	— CSH00158

#### 1-1/2" x 5/16" (38.1 x 7.94 mm) Channel Strip Heaters

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

Length in mm	Wattage	Watt Density		Part Number	
		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
5 1/4	133.4	125	28	4	*CSH00336 *CSH00337
5 1/2	139.7	125	23	4	*CSH00159 CSH00160
5 1/2	139.7	250	46	7	*CSH00161 *CSH00162
5 3/4	146.1	300	47	7	*CSH00163 *CSH00164
6	152.4	150	21	3	*CSH00165 *CSH00166
6	152.4	300	41	6	*CSH00167 *CSH00168
8	203.2	150	10	2	CSH00169 CSH00170
8	203.2	500	32	5	*CSH00323 *CSH00324
10 1/2	266.7	250	11	2	*CSH00172 *CSH00173
12	304.8	350	12	2	*CSH00346 *CSH00174
14	355.6	500	14	2	*CSH00175 *CSH00176
17 1/8	454.2	750	15	2	CSH00177 *CSH00178
19 1/2	495.3	1200	21	3	CSH00328 CSH00332
23 3/4	603.3	750	10	2	*CSH00179 *CSH00180
29 1/4	743.0	750	8	1	CSH00181 CSH00182
34 3/8	879.5	1000	9	1	*CSH00183 *CSH00184
35 3/8	911.4	1000	9	1	CSH00185 CSH00186
37 1/4	946.2	1500	12	2	CSH00187 CSH00188



An asterisk (\*) next to the Part Number guarantees in-stock availability for same-day shipping when

**ORDERED BY 2<sup>PM</sup> CST**

### Standard (Non-Stock) and Stock Sizes and Ratings

#### 1-1/2" × 5/16" (38.1 × 7.94 mm) Channel Strip Heaters

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



Length in mm	Wattage	Watt Density		Part Number		
		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V	
6	152.4	150	21	3	CSH00317	CSH00320
8	203.2	150	13	2	CSH00189	CSH00190
8	203.2	250	21	3	CSH00342	CSH00343
8	203.2	500	42	7	*CSH00322	CSH00325
10½	266.7	250	12	2	CSH00191	CSH00192
12	304.8	350	13	2	CSH00193	CSH00194
14	355.6	500	15	2	CSH00195	CSH00196
17⅞	454.2	750	16	2	CSH00197	CSH00198
19½	495.3	1200	23	4	CSH00327	CSH00331
23¾	603.3	750	11	2	CSH00199	CSH00200
25½	647.7	500	7	1	—	CSH00201
29¼	743.0	750	8	1	CSH00202	CSH00203
33½	850.9	750	7	1	CSH00204	—
34⅝	879.5	1000	9	1	CSH00205	CSH00206
35⅞	911.2	1000	9	1	CSH00207	CSH00208
37¼	946.2	1500	13	2	CSH00209	CSH00210
38½	977.9	800	7	1	CSH00211	—
53⅞	1368.6	1500	8	1	—	CSH00212
53⅞	1368.6	2500	14	2	—	CSH00213
63⅞	1622.6	1800	8	1	—	CSH00214
63⅞	1622.6	3000	14	2	—	CSH00215
71⅞	1825.8	2000	8	1	—	CSH00216
71⅞	1825.8	3000	12	2	—	CSH00217



#### 1-1/2" × 5/16" (38.1 × 7.94 mm) Channel Strip Heaters

Part numbers shown are for heaters with T1 Terminals and Mounting Tabs.

Length in mm	Wattage	Watt Density		Part Number		
		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V	
6	152.4	150	21	3	*CSH00316	CSH00583
8	203.2	150	14	2	*CSH00218	*CSH00219
8	203.2	250	23	4	*CSH00220	CSH00221
9½	241.3	200	12	2	CSH00222	CSH00223
9½	241.3	300	18	3	CSH00224	*CSH00225
10½	266.7	250	13	2	CSH00226	CSH00227
12	304.8	250	10	2	CSH00228	CSH00229
12	304.8	500	20	3	CSH00230	CSH00231
12	304.8	350	12	2	*CSH00345	CSH00528
14	355.6	300	9	1	CSH00232	CSH00233
14	355.6	500	15	2	CSH00234	*CSH00235
15¼	387.4	325	9	1	CSH00236	CSH00237
15¼	387.4	500	13	2	CSH00238	CSH00239
17⅞	454.2	375	8	1	CSH00240	CSH00241
17⅞	454.2	500	11	2	CSH00242	CSH00243
17⅞	454.2	750	16	2	CSH00244	*CSH00245
17⅞	454.2	1000	21	3	CSH00246	CSH00247
19½	495.3	500	10	1	CSH00248	CSH00249
19½	495.3	750	14	2	CSH00250	CSH00251
19½	495.3	1000	19	3	CSH00252	CSH00253
19½	495.3	1200	23	4	CSH00326	CSH00330
21	533.4	500	9	1	CSH00254	—

Length in mm	Wattage	Watt Density		Part Number		
		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V	
23¾	603.3	250	4	1	CSH00256	CSH00257
23¾	603.3	500	7	1	CSH00258	CSH00259
23¾	603.3	750	11	2	*CSH00260	*CSH00261
23¾	603.3	1000	15	2	CSH00262	CSH00263
23¾	603.3	1500	22	3	CSH00264	CSH00265
25½	647.7	750	10	2	CSH00266	CSH00267
25½	647.7	1000	13	2	CSH00268	CSH00269
26¼	679.5	700	9	1	CSH00270	CSH00271
26¼	679.5	750	10	1	CSH00272	CSH00273
29¼	742.0	750	8	1	CSH00347	CSH00348
29⅞	758.8	750	8	1	CSH00274	CSH00275
30½	774.7	750	8	1	CSH00276	CSH00277
33½	850.9	750	7	1	CSH00278	CSH00279
33½	850.9	1000	10	2	CSH00280	CSH00281
34⅝	879.5	1000	9	1	CSH00282	CSH00283
35⅞	911.4	1000	9	1	CSH00284	*CSH00285
37¼	946.2	1500	13	2	CSH00286	*CSH00287
38½	977.9	1000	8	1	CSH00288	CSH00289
42½	1079.5	1250	9	1	CSH00290	CSH00291
42½	1079.5	1500	11	2	CSH00292	CSH00293

An asterisk (\*) next to the Part Number guarantees in-stock availability for same-day shipping when

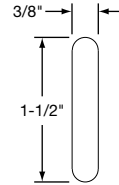
**ORDERED BY 2 PM CST**



### Standard (Non-Stock) Sizes and Ratings

#### 1-1/2" x 3/8" (38.1 x 9.53 mm) Channel Strip Heaters

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



Length		Wattage	Watt Density		Part Number	
in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
7½	190.5	200	19	3	—	CSH00294
9	228.6	500	31	5	—	CSH00295
10½	266.7	250	12	2	CSH00296	—
10½	266.7	400	19	3	CSH00297	—
12	304.8	500	18	3	—	CSH00298
15¼	387.4	500	13	2	—	CSH00299
17	431.8	1000	22	3	—	CSH00300
17⅞	454.0	350	7	1	—	CSH00301
17⅞	454.0	500	10	2	—	CSH00302
18	457.2	1000	20	3	—	CSH00303
18½	469.9	500	10	2	—	CSH00304
22½	571.5	1000	15	2	—	CSH00305
24	609.6	1000	14	2	—	CSH00306
25½	647.7	1000	13	2	—	CSH00307
26	660.4	1600	20	3	—	CSH00308
26½	673.1	1500	18	3	—	CSH00309
30½	774.7	750	8	1	—	CSH00310
31½	800.1	800	8	1	—	CSH00311
35⅞	911.2	1000	9	1	—	CSH00312
36	914.4	1000	9	1	—	CSH00313
50	1270.0	1000	6	1	—	CSH00314
62	1574.8	1500	7	1	—	CSH00315

### Ordering Information

#### Catalog Heaters

Select a Channel Strip Heater from the Standard Sizes and Ratings lists on pages 8-8 through 8-11.

Channel Strip Heaters whose Part Numbers are preceded by an asterisk (\*) are available from Stock for immediate delivery.

Part Numbers with no asterisk (\*) have a 3-week lead time.

#### Custom Engineered/Manufactured Heaters

Understanding that an electric heater can be very application specific, for sizes and ratings not listed, **TEMPCO** will design and manufacture a Channel Strip Heater to meet your requirements. **Standard lead time is 3 weeks.**

**Please Specify** the following:

- Width & Thickness
- Length
- Wattage
- Voltage
- Termination (see pages 8-4 through 8-7)
- Lead Cable/Braid Length
- Special Features
- Quantity

# Strip Heaters



## Ceramic Insulated Finned Strip Heaters

**TEMPCO Finned Strip Heaters** are extremely efficient and dependable as a heat source for hundreds of industrial and commercial applications. They are used for both forced (mounted in a duct) and natural convection air heating (mounted at the bottom of cabinet type ovens).

The Finned Strip Heater's basic design consists of a helically wound resistance coil placed in a specially designed ceramic insulator. The resistance coil is mechanically connected to the screw terminal for positive connection. Stainless steel rectangular tubing is used to house the heater assembly. All remaining voids are filled with high purity magnesium oxide to increase thermal conductivity and dielectric strength.

### Typical Applications

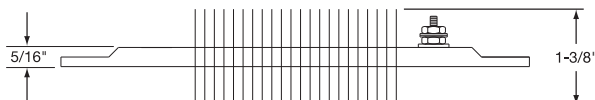
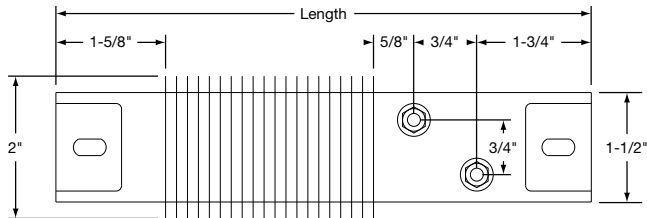
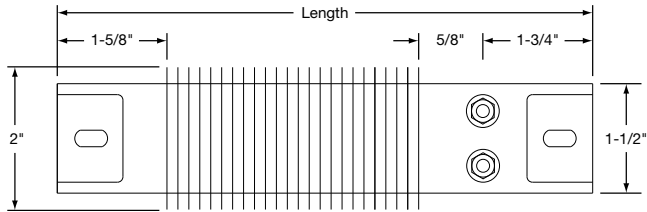
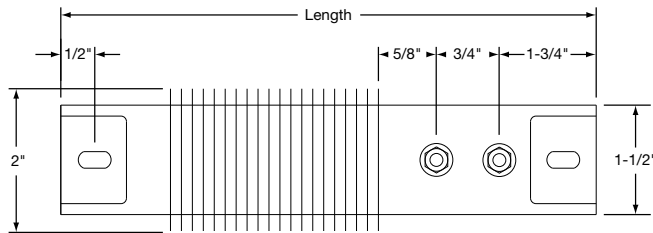
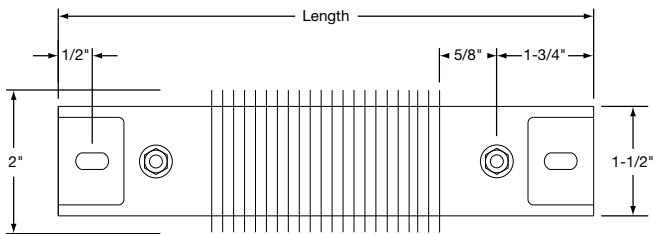
- \* Duct Heating
- \* Space Heaters
- \* Drying Ovens
- \* Food Warmers
- \* Dehumidifier
- \* Shrinking Tunnels
- \* Air Heating
- \* Heat Curing

Nickel-plated steel fins (Stainless Steel optional) are mounted to the rectangular tubing. The fins have been specially designed to provide maximum surface contact for good heat dissipation into the finned cross sections, thus resulting in rapid heat transfer to the air.

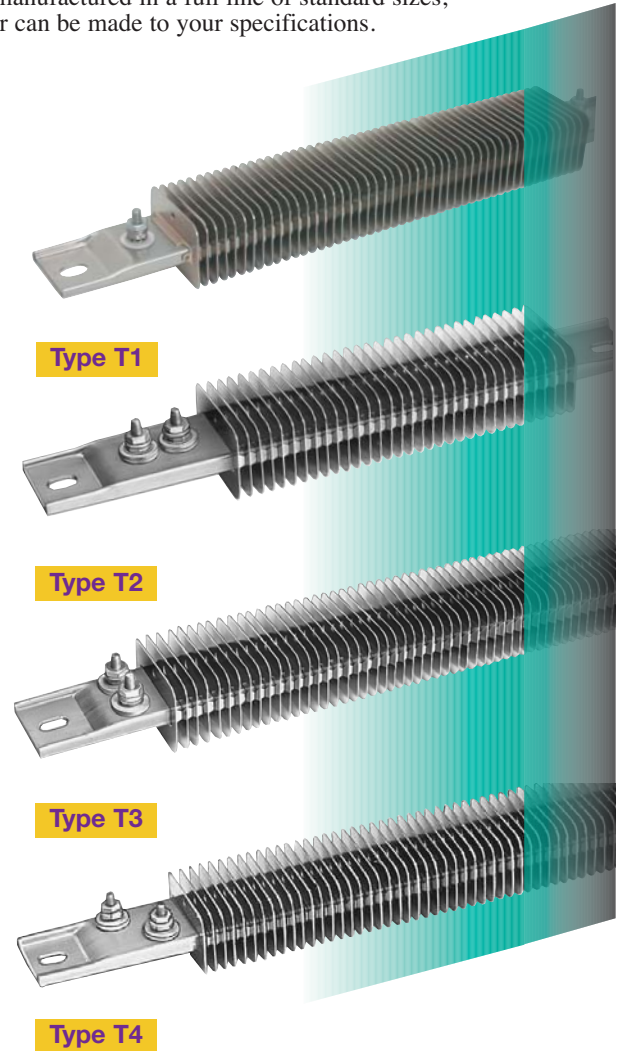
TEMPCO Finned Strip Heaters are manufactured in a full line of standard sizes, electrical ratings and terminations, or can be made to your specifications.

### Design Features

- \* Rugged Durable Construction
- \* Stainless Steel Sheath
- \* Nickel-Plated Steel Fins (Stainless Steel optional)
- \* Various Terminations
- \* Trouble-Free Installation
- \* Various Sizes in Stock



Fin Height



Large selection **IN STOCK** for immediate delivery



### Specifications & Tolerances

**Standard Specifications and Tolerances** of Finned Strip Heaters  
If tighter tolerances are required, consult Tempco.

#### PERFORMANCE RATINGS

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

**Maximum Watt Density:**

Still Air	Max. W/in <sup>2</sup>	Max. W/cm <sup>2</sup>
Up to 300°F (149°C)	20	3.1
300° to 600°F (149° to 316°C)	16	2.5
600° to 800°F (316° to 427°C)	10	1.6
Moving Air	Max. W/in <sup>2</sup>	Max. W/cm <sup>2</sup>
At 600 ft./min., up to 200°F (3 m/sec., up to 93°C)	40	6.2
At 600 ft./min., up to 400°F (3 m/sec., up to 204°C)	30	4.7
At 600 ft./min., up to 600°F (3 m/sec., up to 316°C)	20	3.1

#### ELECTRICAL SPECIFICATIONS

**Maximum Voltage:** 480VAC (when applicable)

**Maximum Amperage:** 22 amps

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

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

#### MATERIAL SPECIFICATIONS & PHYSICAL SIZES

**Sheath:** 304 Stainless Steel

**Fins:** Nickel Plated Steel (Stainless Steel Optional)

**Screw Terminals:** Stainless Steel 10-32 UNF Threads

**Width Including Fins:** 2"

**Height Including Fins:** 1-3/8"

**Length Tolerance:** Up to 24" ± 1/16", over 24" ± 1/8"

**Mounting Slot Size:** Standard 5/16" × 1/2"

**Slot Size For Secondary Insulating Bushing:**

1/2" × 5/8" for 480 Volts and above

#### Agency Approvals

Finned Channel Strip Heaters have a combined certification as Recognized Components by UL, and as Certified Components by CSA (UL File Number E65652), after testing to meet Standard UL499 and Canadian Standard C22.2 No. 72.

*If you require UL/CSA Agency Approval, please specify when ordering.*

### Secondary Insulating Bushings

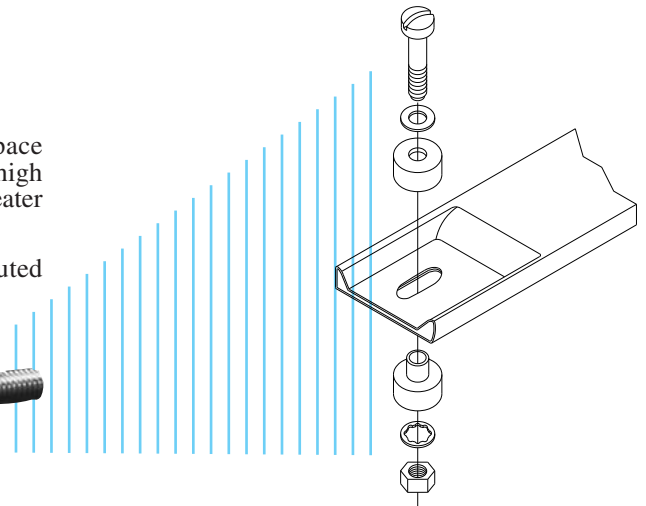
Secondary insulating ceramic bushings increase the effective space between the heater and grounded surface for electrical clearance at high voltages. They must be used on the mounting tabs when the finned heater is connected in series or in direct line voltage above 300 volts.

When Insulating Bushings are required, a 1/2" × 5/8" slot is substituted for the standard slot size (5/16" × 1/2").

#### Insulating Bushing Assembly

**Part Number:** CERR-1001

**Note:** Two assemblies are required for each heater.



When using secondary insulating bushings, the heater must be guarded to avoid any accidental contact. The guard must be electrically isolated from the heater and must be properly grounded.



## Ceramic Covers for Insulating Screw Terminals

### Igloo™ Ceramic Covers

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 #8 or #10 terminal lug used for electrical wiring hookups.

Igloo™ covers can be assembled on all Channel Strip and Finned Strip heaters with Type T1 and Type T4 screw terminals. Mica Strip heaters with screw terminals that have a minimum center to center distance of 7/8" can also be assembled with Igloo™ covers.

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™ cover and the screw terminal size.



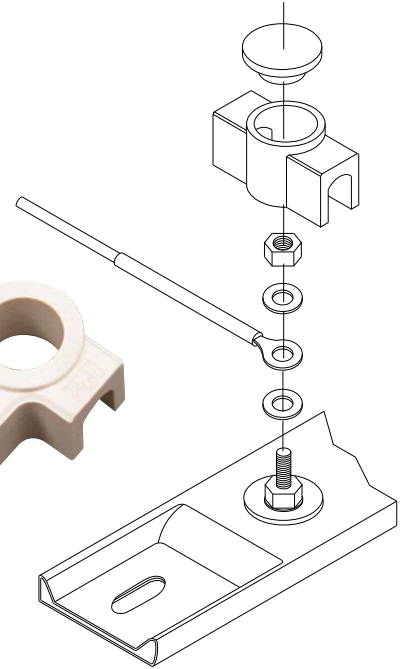
**Type C6**  
Double Port In-Line  
Part Number: CER-101-104



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



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



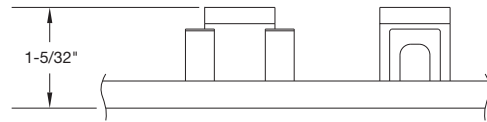
### Ceramic Cap



Thread	Part Number
10-32	CER-102-101
10-24	CER-102-104
8-32	CER-102-105



The three ceramic cap sizes fit all three Igloo™ bases.



## Standard (Non-Stock) and Stock Sizes and Ratings

**Finned Strip Heaters  
with T1 Termination**



An asterisk (\*) next to the Part Number guarantees in-stock availability for same-day shipping when

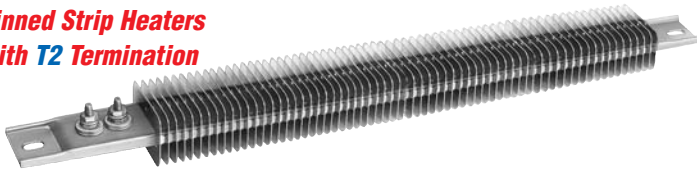


Length in	mm	Wattage	Watt Density		Part Number	
			W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
10½	266.7	500	34	5	*CSF00121	*CSF00122
10½	266.7	725	45	7	CSF00123	CSF00124
12	304.8	900	40	6	*CSF00131	*CSF00132
14	355.6	750	28	4	CSF00232	CSF00249
14	355.6	1100	37	6	CSF00135	*CSF00136
15¼	387.4	1250	37	6	CSF00139	CSF00140
17⅞	454.0	1550	38	6	CSF00144	CSF00145
23¾	603.3	2200	30	5	—	CSF00159
25½	647.7	2400	35	5	—	*CSF00165
30½	774.7	2800	29	5	—	CSF00176
42½	1079.5	4150	31	5	—	CSF00217



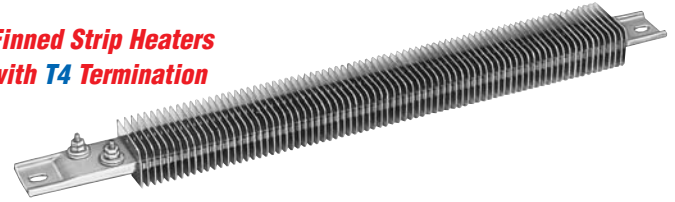
### Standard (Non-Stock) and Stock Sizes and Ratings

#### Finned Strip Heaters with T2 Termination



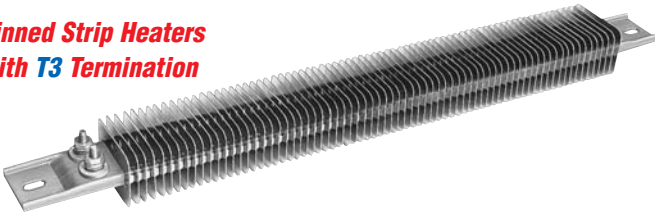
Length		Wattage	Watt Density		Part Number	
in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
10½	266.7	725	36	6	CSF00127	CSF00128
12	304.8	900	36	6	CSF00133	CSF00134
14	355.6	1100	32	5	CSF00137	*CSF00138
15¼	387.4	1250	34	5	CSF00141	CSF00142
17⅞	454.0	1550	33	5	CSF00146	CSF00147
19½	495.3	1700	30	5	CSF00151	CSF00152
25½	647.7	2400	33	5	—	CSF00166
30½	774.7	2800	31	5	—	CSF00177

#### Finned Strip Heaters with T4 Termination



Length		Wattage	Watt Density		Part Number	
in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
8½	215.9	250	18	3	*CSF00252	—
10½	266.7	350	17	3	—	CSF00039
10½	266.7	500	24	4	*CSF00129	*CSF00130
10½	266.7	600	29	4	CSF00042	—
10½	266.7	725	35	5	*CSF00044	*CSF00045
10½	266.7	850	40	6	*CSF00209	—
12	304.8	500	19	3	CSF00047	—
12	304.8	900	34	5	CSF00053	*CSF00054
14	355.6	750	23	3	*CSF00056	CSF00057
14	355.6	1100	33	5	*CSF00060	*CSF00061
15¼	387.4	1000	27	4	CSF00065	—
15¼	387.4	1250	33	5	*CSF00143	*CSF00067
17⅞	454.0	1000	21	3	CSF00071	—
17⅞	454.0	1300	28	4	CSF00073	—
17⅞	454.0	1550	33	5	CSF00148	CSF00075
19½	495.3	1250	24	4	—	CSF00077
19½	495.3	1700	32	5	—	CSF00080
21	533.4	1900	33	5	CSF00158	*CSF00085
23¼	603.3	1450	22	3	—	CSF00088
23¼	603.3	2200	33	5	—	*CSF00090
26¼	679.5	2500	32	5	—	*CSF00100
30½	774.7	1800	20	3	—	CSF00102
30½	774.7	2800	31	5	—	CSF00104
33½	850.9	3150	31	5	—	*CSF00180
35⅞	911.2	2000	18	3	—	*CSF00350
35⅞	911.2	3450	31	5	—	CSF00110
42½	1079.5	4150	31	5	—	CSF00117

#### Finned Strip Heaters with T3 Termination



Length		Wattage	Watt Density		Part Number	
in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
10½	266.7	500	21	3	*CSF00001	*CSF00002
10½	266.7	725	31	5	CSF00003	CSF00004
12	304.8	500	17	3	CSF00005	—
12	304.8	650	23	3	—	CSF00007
12	304.8	900	31	5	CSF00008	*CSF00009
14	355.6	750	21	3	CSF00010	CSF00011
14	355.6	1100	31	5	*CSF00012	*CSF00013
15¼	387.4	1250	31	5	CSF00014	*CSF00015
17⅞	454.0	1550	31	5	*CSF00016	*CSF00017
19½	495.3	1700	31	5	CSF00018	*CSF00019
21	533.4	1900	31	5	CSF00024	*CSF00025
23¼	603.3	2200	31	5	—	*CSF00026
25½	647.7	2400	32	5	—	CSF00027
26¼	679.5	2500	30	5	—	*CSF00028
30½	774.7	2800	30	5	—	CSF00031
33½	850.9	3150	30	5	—	CSF00033
35⅞	911.2	3450	31	5	—	CSF00034
42½	1079.5	4150	31	5	—	CSF00036

An asterisk (\*) next to the Part Number guarantees in-stock availability for same-day shipping when

**ORDERED BY 2<sup>PM</sup> CST**

### Ordering Information

#### Catalog Heaters

Select a Finned Strip Heater from the Standard Sizes and Ratings lists on pages 8-14 and 8-15.

Finned Strip Heaters whose Part Numbers are preceded by an asterisk (\*) are available from Stock for immediate delivery.

Part Numbers with no asterisk (\*) have a 3-week lead time.

#### Custom Engineered/Manufactured Heaters

Understanding that an electric heater can be very application specific, for sizes and ratings not listed, TEMPCO will design and manufacture a Finned Strip Heater to meet your requirements. **Standard lead time is 3 weeks.**

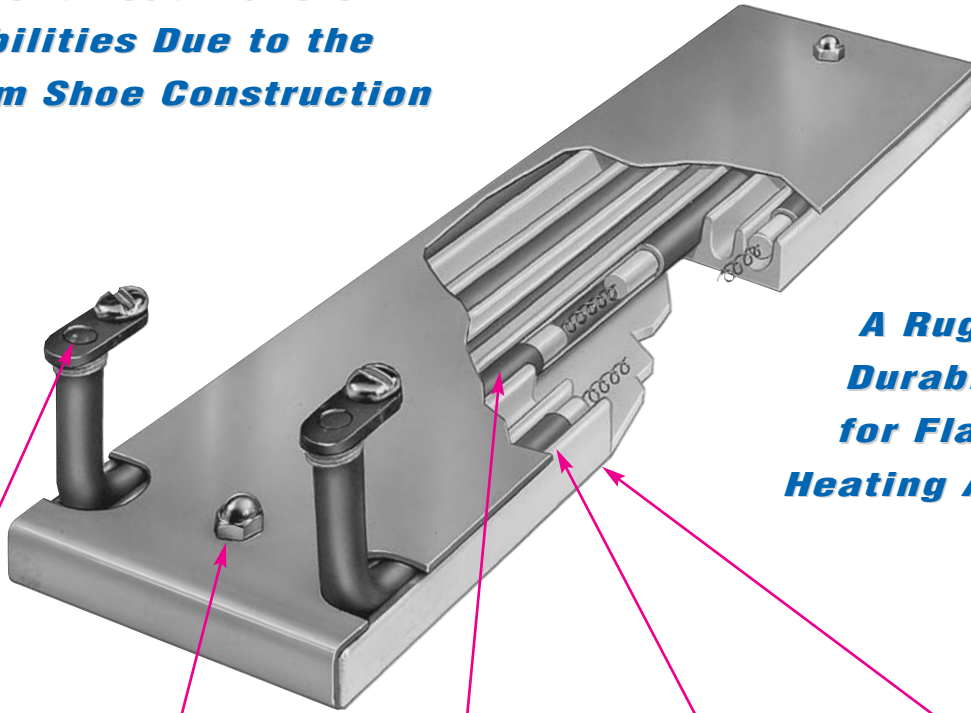
Please Specify the following:

- Type of Application
- Length
- Wattage
- Voltage
- Termination Type
- Secondary Bushings (see page 8-13)
- Igloo™ Ceramic Terminal Covers



## MAXISTRIP

**A Reliable Heat Source with  
Excellent Heat Transfer  
Capabilities Due to the  
Aluminum Shoe Construction**



**A Rugged and  
Durable Heater  
for Flat Surface  
Heating Applications**

**A** Right-angle lug terminals with 10-32 binding head screws provide ease of electrical wiring.

**B** Crown nuts securely fasten the cover plate to the aluminum track, keeping contaminants from coming in direct contact with the tubular heating element.

**C** Ruggedly constructed .315 diameter heating elements are the heat source for Maxistrip heaters, providing excellent life and long, trouble-free service.

**D** Specially designed aluminum track houses the tubular heating element, providing an excellent heat sink for rapid heat transfer and good temperature uniformity.

**E** The surface contact on Maxistrip heaters is extremely smooth and flat, which is essential for good heat conduction. This results in exceptionally long heater life.

**TEMPCO Maxistrip Heaters** are specially designed and engineered for trouble-free performance and more efficient heating of flat surfaces. Due to the rugged construction characteristics of this type of strip heater, it is highly recommended for applications requiring excellent heat transfer and temperature uniformity.

### Design Features

- \* Quick Installation
- \* Contamination Proof
- \* Various Lead Terminations
- \* Excellent Heat Transfer
- \* Excellent Temperature Uniformity
- \* Designed for Durability and Trouble-Free Service

### Typical Applications

- \* Extrusion Dies
- \* Molds
- \* Hot Plates
- \* Drying
- \* Incubators
- \* Platens
- \* Sealing Bars
- \* Thermoforming
- \* Tank Heating
- \* Food Warmers



**Note:** Mounting holes can be provided down the center. For other locations see drawings on page 8-17.



### Specifications & Tolerances

#### Standard Specifications and Tolerances of Maxistrip Heaters.

If tighter tolerances are required, consult Tempco.

#### PERFORMANCE RATINGS

**Maximum Sheath Temperature:** 650°F (343°C)

**Maximum Watt Density:** 20 W/in<sup>2</sup> (3.1 W/cm<sup>2</sup>)

#### ELECTRICAL SPECIFICATIONS

**Maximum Voltage:** 277VAC

**Maximum Recommended Voltage w/ Leads:** 240VAC

**Maximum Watts:** Dependent on width and length

**Maximum Amperage:** 25 Amps

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

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

#### PHYSICAL SIZE CONSTRUCTION LIMITATIONS

**Widths:** 1-1/2" (38.1 mm), 2-1/2" (63.5 mm), 3" (76.2 mm), 4" (101.6 mm)

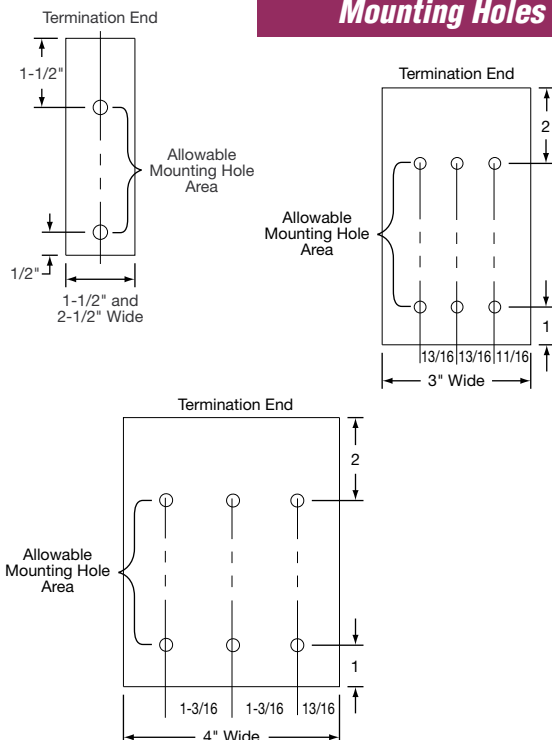
**Thickness:** 1/2" (38.1 mm)

Mounting Holes can be located only along the phantom lines between the holes shown on these drawings.

**Standard Hole Diameter:** 5/16"

**Maximum Hole Diameter:** 1/2"  
(center of width only)

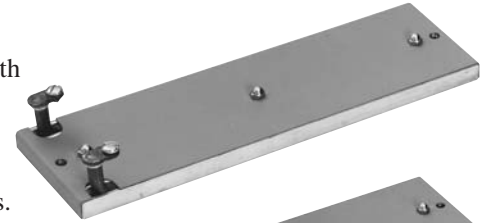
#### Mounting Holes



#### Screw Terminals

##### Type S Terminal Lugs

Terminal lugs with 10-32 binding head screws are the standard termination for all Maxistrip heaters.



##### Type T1 Straight Terminals

Straight outward screw terminals with 8-32 threads.



#### Abrasion Resistant Terminations

Wire braid provides strength and protection to the lead wire insulation, offering sharp bending not possible with armor cable. 20" of wire braid and 24" flexible leads are standard.

**Options:** Longer leads or braid. Male or female plugs attached to leads.



##### Type W1 Straight Wire Braid Leads

##### Type W2 Straight-Up Wire Braid Leads



#### Special Widths



By combining one or more standard width (1-1/2", 2-1/2", 3" and 4") aluminum strip heater channels, wider surface areas can be developed. Consult Tempco with your requirements.



## MAXISTRIP

### Abrasion Resistant Terminations

#### Type W3 Single Wire Braid Leads

Wire braid provides strength and protection to the lead wire insulation, offering sharp bending not possible with armor cable. 20" of wire braid and 24" flexible leads are standard.

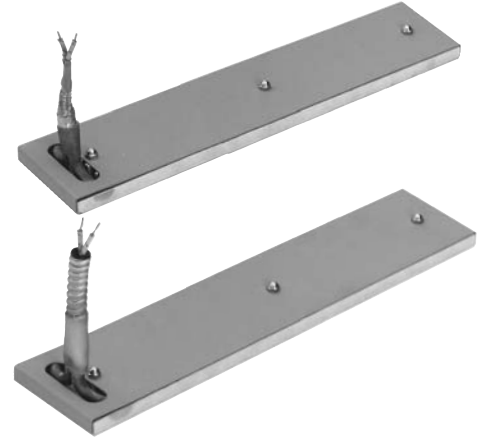
**Options:** Longer leads or braid. Male or female plugs attached to leads.

#### Type R1 Single Armor Cable Leads

Armor Cable provides excellent protection against abrasion and contaminants. The cable exits through an adaptor that encapsulates the element ends. The adaptor and cable are silver soldered on for maximum security and seal protection. 20" of cable and 24" flexible leads are standard.

**Type R1A** Galvanized cable      **Type R1B** Stainless steel cable

**Options:** Longer leads or cable. Male or female plugs attached to leads.



#### Type C\_\_ General Purpose Stainless Steel Terminal Box

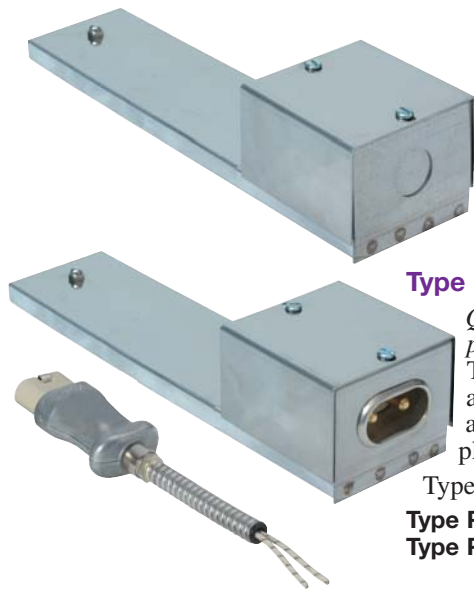
Terminal Boxes provide a simple and economical way to eliminate all live exposed terminals and electrical wiring that can be a potential hazard to employees or machines. Boxes have 1/2" trade size knockouts (actual diameter 7/8") for standard connections to simplify installation. Strip heaters fitted with boxes can be supplied, factory prewired with leads, armor cable or braid.

**Type CA** Box only

**Type CC** Box with SS cable

**Type CB** Box with galvanized cable

**Type CD** Box with wire braid



#### Type P2\_\_ Quick-Disconnect High Temperature Plug

*Quick-Disconnect Plug assemblies are highly recommended and should be used whenever possible.* They provide the simplest and safest way to apply power to strip heater installations. The combination of plug and cup assembly, along with armor cable cover leads, eliminates all live exposed terminals and electrical wiring that can be a potential hazard to employees and machines. To simplify installation, Maxistrips fitted with P2 plug assemblies can be supplied prewired, using high-temperature lead wire protected with armor cable or wire braid.

Type P not available on 1-1/2" wide Maxistrip.

**Type P2A** Box and cup only

**Type P2D** w/ straight plug and SS cable

**Type P2C** w/ straight plug and galvanized cable

**Type P2E** w/ straight plug and wire braid

### Standard (Non-Stock) Sizes and Ratings

#### Width 1-1/2" (38.1 mm)

Length in mm	Wattage	Watt Density		Part Number	
		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
3 1/2	88.9	130	25 4	MXS00001	—
3 3/4	95.3	140	25 4	MXS00002	—
4	101.6	150	25 4	MXS00003	—
4 1/4	108.0	160	25 4	MXS00004	—
4 1/2	114.3	170	25 4	MXS00005	—
4 3/4	120.7	180	25 4	MXS00006	—
5	127.0	190	25 4	MXS00007	—
5	127.0	150	20 3	MXS00008	—
5 1/4	133.4	200	25 4	MXS00009	—
5 1/2	139.7	205	25 4	MXS00010	—
5 3/4	146.1	215	25 4	MXS00011	—
6	152.4	225	25 4	MXS00012	—
6 1/4	158.8	230	25 4	MXS00013	—
6 1/2	165.1	240	25 4	MXS00014	—
6 3/4	171.5	250	25 4	MXS00015	—
7	177.8	260	25 4	MXS00016	—
7 1/4	184.2	270	25 4	MXS00017	—
7 1/2	190.5	170	15 2	MXS00018	—
7 1/2	190.5	225	20 3	MXS00019	—
7 1/2	190.5	280	25 4	MXS00020	MXS00021
7 3/4	196.9	290	25 4	MXS00022	MXS00023
8	203.2	240	20 3	MXS00024	MXS00025
8	203.2	300	25 4	MXS00026	MXS00027
8 1/4	209.6	310	25 4	MXS00028	MXS00029

Length in mm	Wattage	Watt Density		Part Number	
		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
8 1/2	215.9	320	25 4	MXS00030	MXS00031
8 3/4	222.3	330	25 4	MXS00032	MXS00033
9	228.6	270	25 4	MXS00034	MXS00035
9	228.6	335	25 4	MXS00036	MXS00037
9 1/4	235.0	345	25 4	MXS00038	MXS00039
9 1/2	241.3	350	25 4	MXS00040	MXS00041
9 3/4	247.7	355	25 4	MXS00042	MXS00043
10	254.0	300	20 3	MXS00044	MXS00045
10	254.0	375	25 4	MXS00046	MXS00047
10 1/4	260.4	385	25 4	MXS00048	MXS00049
10 1/2	266.7	315	20 3	MXS00050	MXS00051
10 1/2	266.7	395	25 4	MXS00052	MXS00053
11	279.4	330	20 3	MXS00054	MXS00055
11	279.4	410	25 4	MXS00056	MXS00057
11 1/4	285.8	335	20 3	MXS00058	MXS00059
11 1/2	292.1	345	20 3	MXS00060	MXS00061
12	304.8	270	15 2	MXS00062	MXS00063
12	304.8	450	25 4	MXS00064	MXS00065
12	304.8	360	20 3	MXS00066	MXS00067
12 1/2	317.5	375	20 3	MXS00068	MXS00069
12 3/4	323.9	380	20 3	MXS00070	MXS00071
13	330.2	290	15 2	MXS00072	MXS00073
13	330.2	390	20 3	MXS00074	MXS00075
14	355.6	420	20 3	MXS00076	MXS00077



## Standard (Non-Stock) Sizes and Ratings

### Width 2-1/2" (63.5 mm)

Length		Wattage	Watt Density		Part Number	
in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
3½	88.9	175	20	3	MXS00078	—
3¾	95.3	230	25	4	MXS00079	—
4	101.6	250	25	4	MXS00080	—
4½	114.3	280	25	4	MXS00081	—
5	127.0	310	25	4	MXS00082	—
5½	139.7	340	25	4	MXS00083	—
6	152.4	375	25	4	MXS00084	—
6½	165.1	325	20	3	MXS00085	—
6¾	171.5	335	20	3	MXS00086	MXS00087
7	177.8	435	25	4	MXS00088	MXS00089
7¼	184.2	360	20	3	MXS00090	MXS00091
7½	190.5	465	25	4	MXS00092	MXS00093
7¾	200.0	295	15	2	MXS00094	MXS00095
8	203.2	400	20	3	MXS00096	MXS00097
8	203.2	500	25	4	MXS00098	MXS00099
8¼	209.6	410	20	3	MXS00100	MXS00101
8½	215.9	530	25	4	MXS00102	MXS00103
9	228.6	560	25	4	MXS00104	MXS00105
9½	241.3	590	25	4	MXS00106	MXS00107
10	254.0	500	20	3	MXS00108	MXS00109
10	254.0	625	25	4	MXS00110	MXS00111
10½	266.7	650	25	4	MXS00112	MXS00113
11	279.4	550	25	4	MXS00114	MXS00115
11½	292.1	575	20	3	MXS00116	MXS00117
11½	292.1	715	25	4	MXS00118	MXS00119
12	304.8	600	20	3	MXS00120	MXS00121
12	304.8	750	25	4	MXS00122	MXS00123
12½	317.5	625	25	4	MXS00124	MXS00125
13	330.2	650	25	4	MXS00126	MXS00127
13½	342.9	675	25	4	MXS00128	MXS00129
14	355.6	700	20	3	MXS00130	MXS00131
14	355.6	875	25	4	MXS00132	MXS00133

### Width 3" (76.2 mm)

Length		Wattage	Watt Density		Part Number	
in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
6	152.4	450	25	4	MXS00134	MXS00135
6½	165.1	485	25	4	MXS00136	MXS00137
7	177.8	525	25	4	MXS00138	MXS00139
7½	190.5	560	25	4	MXS00140	MXS00141
8	203.2	600	25	4	MXS00142	MXS00143
8½	215.9	635	25	4	MXS00144	MXS00145
9	228.6	675	25	4	MXS00146	MXS00147
9½	241.3	710	25	4	MXS00148	MXS00149
10	254.0	600	20	3	MXS00150	MXS00151
10½	266.7	630	20	3	MXS00152	MXS00153
11	279.4	660	20	3	MXS00154	MXS00155
11½	292.1	690	20	3	MXS00156	MXS00157
12	304.8	720	20	3	MXS00158	MXS00159
12½	317.5	750	20	3	MXS00160	MXS00161
13	330.2	780	20	3	MXS00162	MXS00163
13½	342.9	810	20	3	MXS00164	MXS00165

### Width 4" (101.6 mm)

Length		Wattage	Watt Density		Part Number	
in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
6	152.4	600	25	4	MXS00166	MXS00167
7	177.8	700	25	4	MXS00168	MXS00169
8	203.2	800	25	4	MXS00170	MXS00171
9	228.6	900	25	4	MXS00172	MXS00173
10	254.0	1000	25	4	MXS00174	MXS00175
11	279.4	880	20	3	MXS00176	MXS00177
12	304.8	960	20	3	MXS00178	MXS00179
12½	317.5	1000	20	3	MXS00180	MXS00181
13	330.2	1040	20	3	MXS00182	MXS00183
13½	342.9	1080	20	3	MXS00184	MXS00185

### Ordering Information

#### Catalog Heaters

Select a Maxistrip Heater from the Standard Sizes and Ratings lists above. Note that Part Numbers shown are for heaters with type "S" termination. Specify Part Number and Quantity. Lead time is 3 weeks.

#### Custom Engineered/Manufactured Heaters

Understanding that an electric heater can be very application specific, for sizes and ratings not listed, **TEMPCO** will design and manufacture a Maxistrip Heater to meet your requirements. **Standard lead time is 3 weeks.**

**Please Specify** the following:

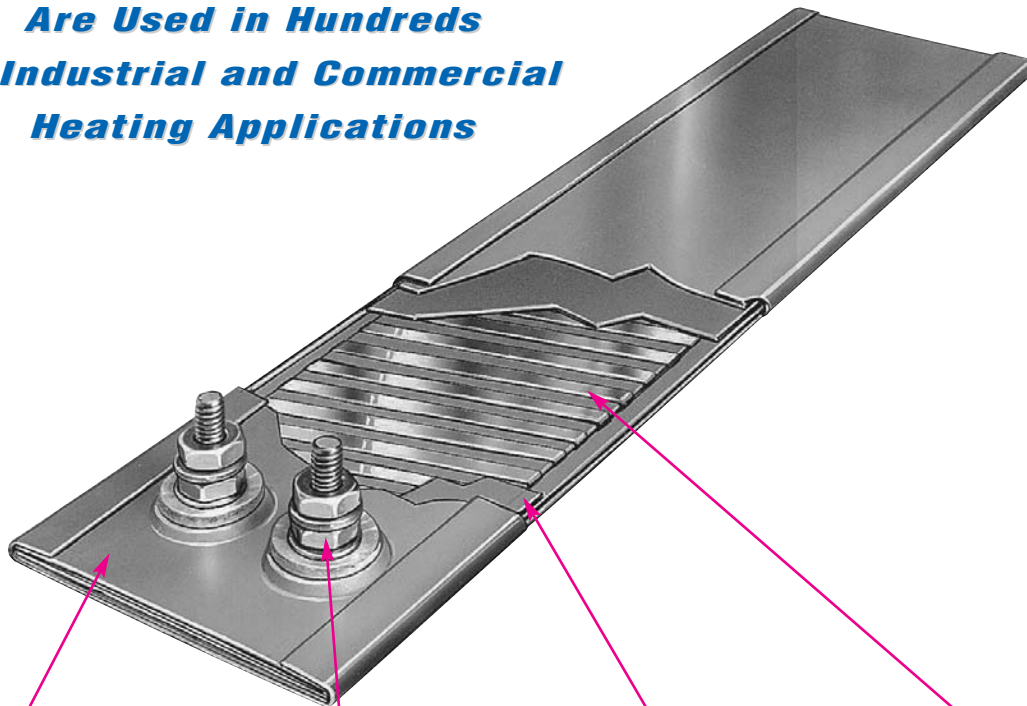
- Width
- Length
- Wattage
- Voltage
- Termination Types
- Lead Length
- Cable/Braid Length
- Optional Features



## MICA INSULATED

**Mica Insulated Strip Heaters  
Are Used in Hundreds  
of Industrial and Commercial  
Heating Applications**

**AN ECONOMICAL,  
PRACTICAL AND  
RELIABLE  
HEAT SOURCE  
CAPABLE OF  
PROVIDING  
UNIFORM HEAT  
TRANSFER TO  
FLAT SURFACES**



**A** Specially treated rust-resistant steel sheath casing provides the best combination of physical strength, high emissivity and good thermal conductivity for sheath temperatures up to 900°F (480°C). For corrosive atmospheres and/or sheath temperatures up to 1200°F (650°C), stainless steel sheath is available.

**B** For maximum connecting surface, the specially designed stainless steel screw terminals are securely fastened to a connecting jumper, assuring positive contact with the windings, providing maximum current carrying capacity. For other terminal or lead arrangements, see pages 8-22 and 8-23.

**C** Specially selected mica grade and thickness is used to insulate the windings, providing excellent thermal conductivity and dielectric strength.

**D** A specific nickel-chrome resistance ribbon wire size is properly engineered to achieve the best combination of wire gauge and spacing between turns, thereby providing the lowest winding temperature possible. The ribbon wire is wound on a specially selected Mica Strip, providing even heat distribution for maximum heater life.

### Typical Applications

- \* Food Warming Equipment
- \* Packaging Equipment
- \* Blow Molding Equipment
- \* Testing Equipment
- \* Vulcanizing Presses
- \* Vending Machines
- \* Hot Plates
- \* Ovens
- \* Molds
- \* Kettles
- \* Incubators

### Agency Approvals



Mica Strip heaters are UL recognized and CSA certified in many design variations. Tempco's UL file number is E65652 and CSA file number is LR43099. If you require a UL recognized or CSA certified heater, please specify.





### Specifications & Tolerances

**Standard Specifications and Tolerances** of Mica Insulated Strip Heaters. If tighter tolerances are required consult Tempco.

#### PERFORMANCE RATINGS

**Maximum Sheath Temperature**

Rust resistant steel: 900°F (480°C)

Stainless Steel: 1200°F (650°C)

**Nominal Watt Density:** 5-45 W/in<sup>2</sup> (0.8-7.0 W/cm<sup>2</sup>)

**Maximum Watt Density:** Depends on operating temperature and heater size.

#### ELECTRICAL SPECIFICATIONS

**Maximum Voltage:** 240 Volts

**Maximum Amperage:** 25 Amps

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

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



**Note:** Heater's physical size combined with electrical ratings will determine the actual minimums and maximums.

#### MATERIAL SPECIFICATIONS & PHYSICAL SIZES

**Standard Sheath Material:** Rust resistant steel

**Optional:** Stainless Steel or Aluminum

**Nominal Thickness:** 3/16" (4.76 mm)

**Minimum Width:** 5/8" (15.88 mm)

**Width Tolerance:** ±1/32" (0.79 mm)

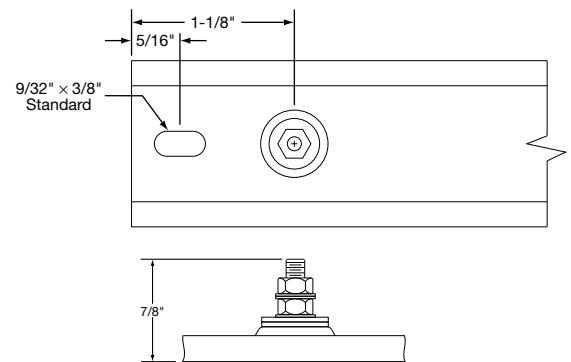
**Maximum Length:** 72" (1829 mm)

**Length Tolerance:** Up to 24" (610 mm) ±1/16" (1.59 mm)  
Over 24" (610 mm) ±1/8" (3.18 mm)

**Screw Terminals**

1" (25.4 mm) wide strips: 8-32 threads

Over 1" (25.4 mm) wide strips: 10-32 threads



## Installation

## Instructions

- Tempco Mica Insulated Strip Heaters are available with mounting slots at each end for surface mounting applications or without mounting slots for insertion into milled slots.
- For surface mounting installations, Mica Strip heaters must be clamped securely along their entire length to a smooth metal surface by using metal clamps 3" to 5" apart.
- Holes along the body of the strip heater for mounting purposes are not recommended and should only be used when there is no other means of clamping the strip heater down. These holes take up valuable winding space, increasing watt density, resulting in poor heater life. When supported by mounting slots, the terminal end should be secured firmly. Opposite end should be slightly loosened to allow for linear expansion.

- The surface being heated must be clean and smooth for efficient heat transfer. Small air gaps caused by imperfections can cause hot spots, resulting in heater failure.
- Contaminants such as oil, plastics, and dirt should not be allowed to collect on heaters, as they will find their way into the heater windings, eventually carbonizing and causing electrical shorts.





### Lead Wire Terminations

#### Type W1

Wire braid leads offer sharp bending not possible with armor cable. 10" of wire braid over 12" leads is standard. If longer braid or leads are required, specify.



#### Type W2

Flexible stainless steel braided lead wires exiting at same end. 10" stainless steel braid over 12" leads is standard. If longer braid or leads are required, specify.



#### Type W3

Flexible stainless steel braided lead wires exiting at opposite ends. 10" stainless steel braid over 12" leads is standard. If longer braid or leads are required, specify.



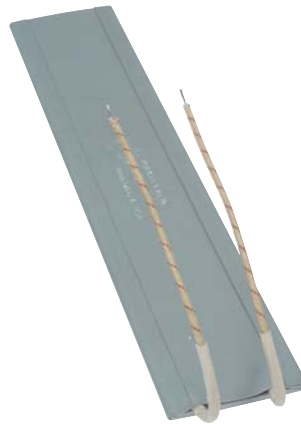
#### Type L1

Flexible lead wire exiting from the top through a brass eyelet. 10" long leads standard; if longer leads are required, specify.



#### Type L2

Flexible lead wire exiting same end. 10" long leads standard; if longer leads are required, specify.



#### Type L3

Flexible lead wire exiting at opposite ends. 10" long leads standard; if longer leads are required, specify.

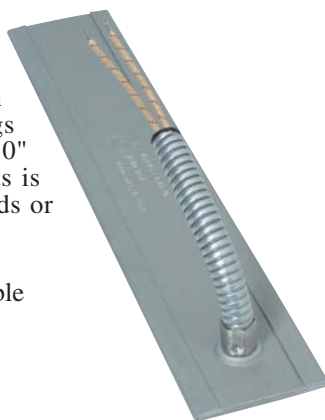


### Abrasion Resistant Terminations

#### Type R1

Armor cable provides far superior protection to lead wires where abrasion is a constant problem. Available with two- or three-prong plugs attached to cable and leads. 10" of armor cable over 12" leads is standard. If longer cable, leads or plugs are required, specify.

- Type R1A** Galvanized cable
- Type R1B** Stainless Steel cable



#### Type R2

Right-angle armor cable can be positioned in any direction. 10" of armor cable over 12" leads is standard. If longer leads are required, specify.

- Type R2A** Galvanized cable
- Type R2B** Stainless Steel cable





### Standard (Non-Stock) Sizes and Ratings

Part Numbers shown are for heaters without mounting slots. Termination Types L1 and L2 have 10" leads. R1 and R2 have 10" galvanized armor cable over 12" leads. W1 and W2 have 10" stainless steel braid over 12" leads.

Width		Length		Wattage	Watt Density		Termination	Part Number	
in	mm	in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>		120V	240V
1	25.4	6	152.4	100	32	5	L2	MSH00001	MSH00002
1	25.4	22½	571.5	525	39	6	W1	—	MSH00003
1	25.4	40	1016.0	750	31	5	R2	—	MSH00004
1½	38.1	5½	139.7	225	44	7	L1	—	MSH00005
1½	38.1	5½	139.7	225	44	7	L2	—	MSH00006
1½	38.1	5½	139.7	125	25	4	T2	MSH00007	—
1½	38.1	6	152.4	300	53	8	L2	MSH00008	—
1½	38.1	6	152.4	250	44	7	W1	—	MSH00009
1½	38.1	8	203.2	355	45	7	L2	—	MSH00010
1½	38.1	8	203.2	400	51	8	L2	MSH00011	MSH00012
1½	38.1	8	203.2	400	51	8	T2	MSH00013	—
1½	38.1	9½	241.3	200	21	3	L2	—	MSH00014
1½	38.1	10	254.0	450	44	7	L2	—	MSH00015
1½	38.1	10½	266.7	250	23	4	T2	MSH00016	—
1½	38.1	11	279.4	500	44	7	L1	—	MSH00017
1½	38.1	11	279.4	600	53	8	W1	—	MSH00018
1½	38.1	12	304.8	400	32	5	L2	MSH00019	—
1½	38.1	14	355.6	500	34	5	T2	MSH00020	—
1½	38.1	16	406.4	600	36	6	L2	—	MSH00021
1½	38.1	17	431.8	500	28	4	L1	—	MSH00022
1½	38.1	18	457.2	500	26	4	L2	MSH00023	—
1½	38.1	22½	571.5	775	32	5	W1	—	MSH00024
1½	38.1	24	609.6	1000	39	6	L2	—	MSH00025
1½	38.1	30	762.0	1000	31	5	L2	—	MSH00026
1½	38.1	36	914.4	1000	25	4	L2	—	MSH00027
1½	38.1	36	914.4	1000	25	4	T2	MSH00028	—
2	50.8	3	76.2	100	31	5	T2	—	MSH00029
2	50.8	4	101.6	20	4	1	T2	MSH00030	—
2	50.8	4	101.6	30	6	1	T2	MSH00031	—
2	50.8	4	101.6	40	8	1	T2	MSH00032	—
2	50.8	4	101.6	50	10	2	T2	MSH00033	—
2	50.8	4	101.6	100	21	3	T3	—	MSH00034
2	50.8	4	101.6	100	21	3	W1	—	MSH00035
2	50.8	4	101.6	150	31	5	W1	—	MSH00036
2	50.8	4	101.6	200	41	6	W1	—	MSH00037
2	50.8	8	203.2	275	24	4	L1	—	MSH00038
2	50.8	27½	698.5	1200	28	4	L2	—	MSH00039
2	50.8	43	1092.2	1400	21	3	T2	—	MSH00040
2½	61.9	5½	139.7	350	38	6	T3	—	MSH00041
2½	63.5	4	101.6	150	24	4	T1	—	MSH00042
2½	63.5	6	152.4	350	33	5	R1	—	MSH00043
2½	63.5	8½	215.9	350	22	3	T3	—	MSH00044
2½	63.5	10	254.0	350	18	3	L2	MSH00045	MSH00046
2½	63.5	14	355.6	625	23	4	L2	MSH00047	—
2¾	73.0	6	152.4	300	24	4	T3	MSH00048	—
2¾	73.0	6	152.4	300	24	4	T3	—	MSH00049
3	76.2	7	177.8	200	13	2	L1	MSH00050	—
3	76.2	7	177.8	500	32	5	L1	MSH00051	—
3	76.2	12	304.8	180	6	1	T1	MSH00052	—
3	76.2	12½	317.5	300	10	2	T3	—	MSH00053
3	76.2	15	381.0	500	14	2	L1	MSH00054	—
3	76.2	26	660.4	600	9	1	R1	—	MSH00055
3½	88.9	4	101.6	100	11	2	W2	—	MSH00056
3½	88.9	4½	114.3	500	46	7	W1	—	MSH00057
3½	88.9	7½	190.5	500	25	4	T3	MSH00058	—
3½	88.9	10	254.0	900	32	5	W2	—	MSH00059
3½	88.9	14	355.6	450	11	2	B3	MSH00060	—
4	101.6	4	101.6	275	25	4	R2	—	MSH00061
4	101.6	8	203.2	425	17	3	T3	—	MSH00062
4	101.6	11	279.4	750	21	3	T3	—	MSH00063

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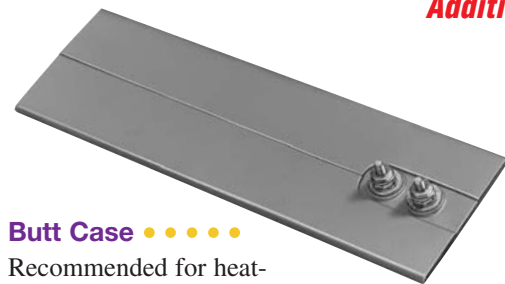


### Standard (Non-Stock) Sizes and Ratings

Continued from previous page...

Width		Length		Wattage	Watt Density		Termination	Part Number	
in	mm	in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>		120V	240V
4	101.6	20	508.0	1750	25	4	R1	—	MSH00064
4 $\frac{3}{8}$	111.1	7 $\frac{1}{6}$	179.4	800	33	5	W2	—	MSH00065
4 $\frac{3}{4}$	120.7	5 $\frac{1}{2}$	139.7	700	36	6	T2	—	MSH00066
4 $\frac{3}{4}$	120.7	11 $\frac{1}{4}$	285.8	200	4	1	T3	—	MSH00067
4 $\frac{7}{8}$	123.8	11 $\frac{1}{6}$	290.5	1200	26	4	T3	—	MSH00068
5 $\frac{7}{8}$	149.2	11	279.4	425	8	1	R1	MSH00069	—
6	152.4	12	304.8	1200	19	3	T3	—	MSH00070
6	152.4	15	381.0	575	7	1	T3	—	MSH00071
7	177.8	11 $\frac{1}{2}$	292.1	625	9	1	R1	MSH00072	—
8	203.2	9 $\frac{3}{4}$	235.0	450	7	1	T3	—	MSH00073
8	203.2	10	254.0	450	7	1	T3	—	MSH00074
10	254.0	18	457.2	300	2	0	B3	MSH00075	—

### Additional Mica Strip Heater Optional Features

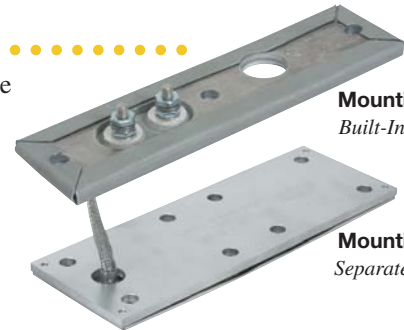


#### Butt Case

Recommended for heating applications where strip heater will be placed in a milled slot between two steel plates.

#### Pressure Plate

Strip Heaters can be made with built-in pressure plate to add rigidity and minimize warping of the heater. Standard plate thickness is 1/8". Specify plate thickness and choice of mounting method 1 or mounting method 2.



**Mounting Method 1**  
Built-In Pressure Plate

**Mounting Method 2**  
Separate Pressure Plate



#### Four Sides Closed

Mica Strip Heaters can be closed on all four sides to prevent contamination from getting inside the heater. Recommended on all strip heaters over 4" in width.

#### Cross-Section-Formed

Strip Heaters can be formed on their cross section for pipe heating applications. 2" minimum width required. Specify diameter of pipe on which heaters are to be mounted.



### Ordering Information

#### Catalog Heaters

Select a Mica Strip Heater from the Standard Sizes and Ratings List on pages 8-24 and 8-25. Specify Part Number and Quantity. Lead time is 2 weeks.

#### Custom Engineered/Manufactured Heaters

Understanding that an electric heater can be very application specific, for sizes and ratings not listed, **TEMPCO** will design and manufacture a Mica Insulated Heater to meet your requirements. **Standard lead time is 2 weeks.**

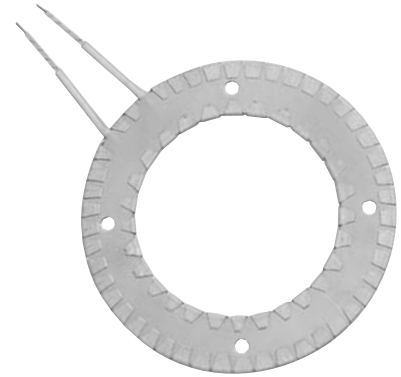
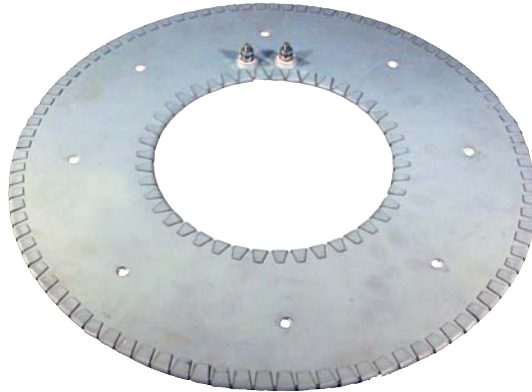
**Please Specify** the following:

- Width
- Length
- Wattage
- Voltage
- Termination Type
- Lead Length
- Cable/Braid Length
- Optional Features

**CONTINUED**



### Additional Mica Strip Heater Optional Features



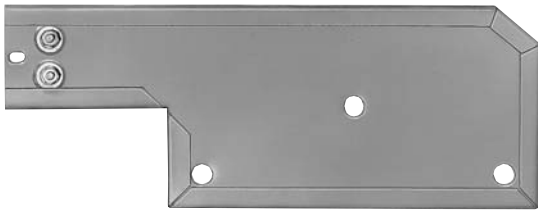
#### Disc Heater

When ordering Disc Heaters, specify outside diameter, electrical ratings, and termination type. If mounting holes are required, specify location and hole size.

#### Ring Heaters

When ordering Ring Heaters, specify inside and outside diameters, electrical ratings, and termination type. If mounting holes are required, specify location and hole size.

### Custom Engineered/Manufactured

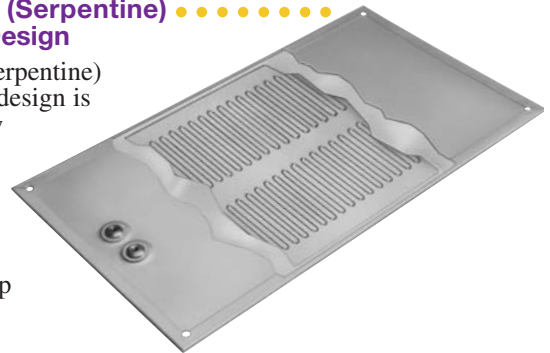


#### Irregular Shape

Mica Strip Heaters can be made into any practical shape and electrical rating. We welcome your inquiries.

#### Sinuated (Serpentine) Element Design

Sinuated (Serpentine) wound coil design is used for low temperature and low watt density applications within the 3-10 amp range.



### Non-Metal Sheath Custom Mica Heaters



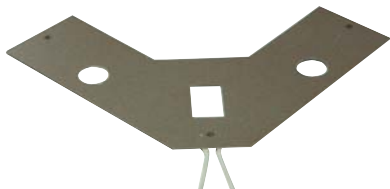
#### Open Element

This economical heater design without the metal case is commonly used in laminating machines. The heater assembly can be suspended or sandwiched between non-metallic machine parts, eliminating the need for additional and expensive metal cases.



#### Distributed Wattage

A mica strip heater can be designed with varying heat profile along the length for uneven heat distribution.



#### Irregular Shape

Non-Metal Sheath Strip Heaters can be made into any practical shape and electrical rating. We welcome your inquiries.

#### EXPERIENCE THE TEMPCO ADVANTAGE

*Strip Heaters shown on this page are a small representation of the many Custom Engineered and Manufactured designs we have produced.*

*If you have a special application and need free technical assistance, consult our team of professionals with your requirements.*

*We Welcome Your Inquiries*