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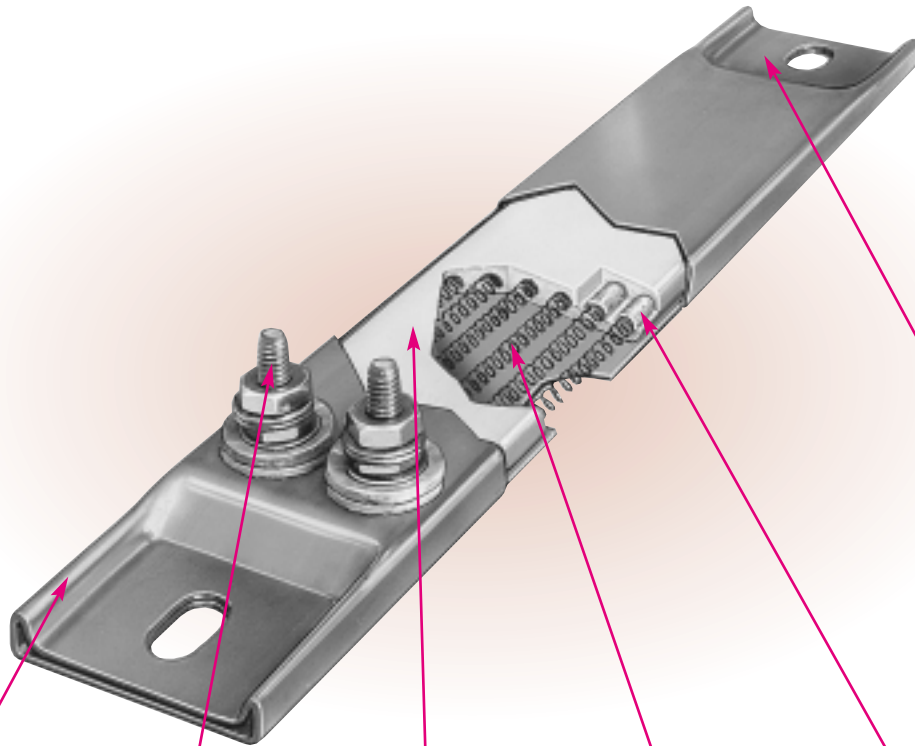
SECTION

STRIP HEATERS



Ceramic Insulated

CHANNEL STRIP HEATERS



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 (twist-proof). Various termination configurations and options are available. See pages 8-4 through 8-7.

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 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.



Tempco 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 basic design consists of helically wound resistance coil evenly strung through specially designed ceramic insulators. Resistance coil is mechanically connected to screw terminals or leadwires for positive connection. Stainless steel rectangular tubing is used to house the heater assembly. All voids are densely packed with high purity magnesium oxide to increase thermal conductivity and dielectric strength.

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. See page 8-25 for clamping devices. When supported by mounting tabs, the terminal end should be secured firmly. Opposite end should be loose to allow for thermal expansion.

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.



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/in² (3.1 W/cm²)

ELECTRICAL RATINGS

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"

Length

Up to 24" ±1/16"

over 24" ±1/8"

Mounting Slot Size

Standard 5/16" × 1/2"

Special 1/2" × 5/8"



Ceramic Insulated

CHANNEL STRIP HEATERS

Screw Terminal Terminations

Type T1

- 10-32 Screw Terminals at each end
- Available on 1" and 1½" wide heaters



No Mounting Tabs



With Mounting Tabs



Type T2

- 10-32 Screw Terminals (Tandem) at one end
- Available on 1" and 1½" wide heaters



No Mounting Tabs



With Mounting Tabs



Type T3

- 10-32 Screw Terminals (Parallel) at one end
- Available on 1½" wide heaters only



No Mounting Tabs



With Mounting Tabs



Type T4

- 10-32 Offset Terminals at one end
- Available on 1½" wide heaters only



No Mounting Tabs



With Mounting Tabs





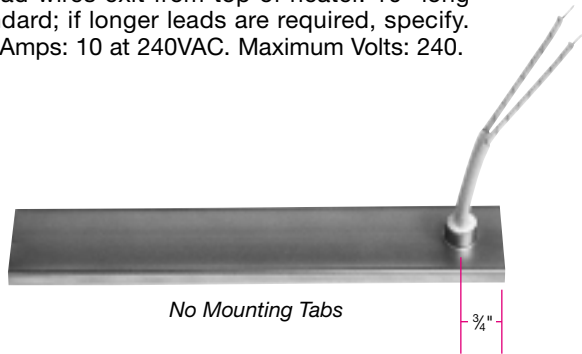
Lead Wire Terminations

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.

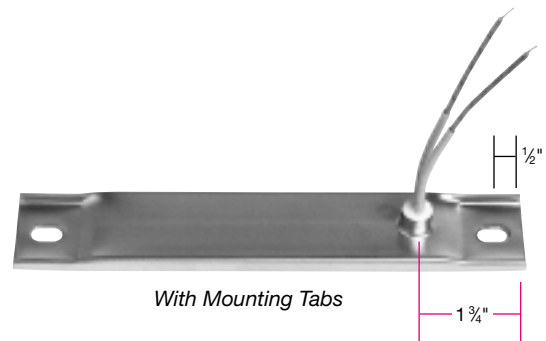
Maximum Amps: 10 at 240VAC. Maximum Volts: 240.



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.



No Mounting Tabs

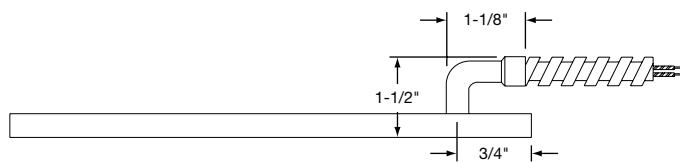


With Mounting Tabs

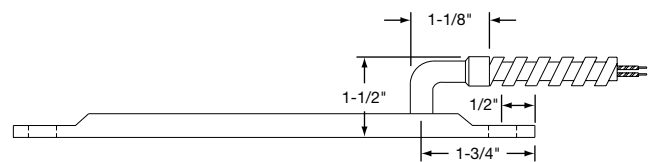
Type R2 Right-angle armor cable prevents contamination from getting into the heater. 10" of armor over 12" long leads is standard; if longer leads or armor are required, specify. Maximum Amps: 10 at 240VAC. Maximum Volts: 240.



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

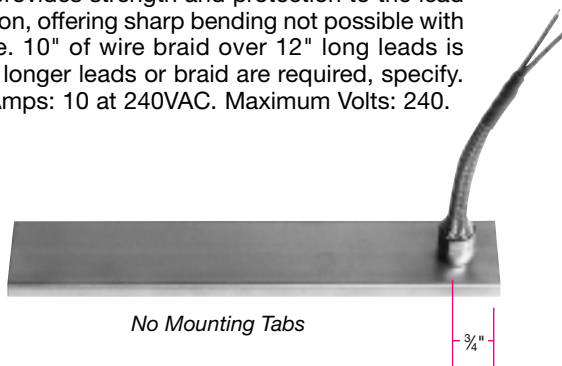


No Mounting Tabs

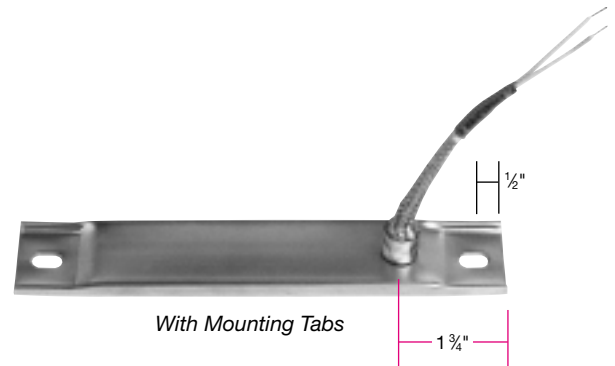


With Mounting Tabs

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.



No Mounting Tabs



With Mounting Tabs



Terminal Protection

CHANNEL STRIP HEATERS

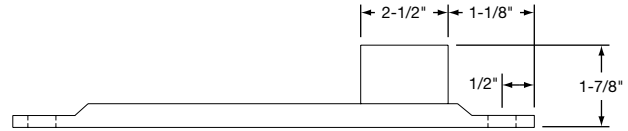


Type C Terminal box has a $\frac{5}{8}$ " knockout. Box provides excellent protection to exposed terminals. If armor protected lead wires are required, specify armor and lead length. Available on 1" and 1½" wide heaters.

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



No Mounting Tabs

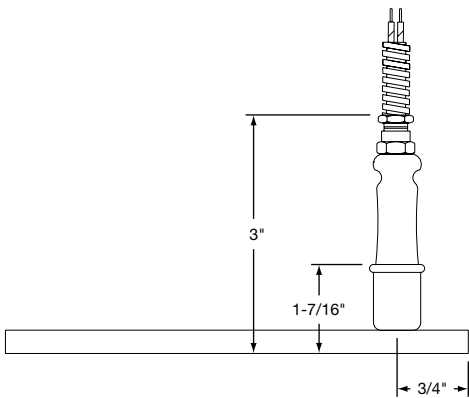


With Mounting Tabs

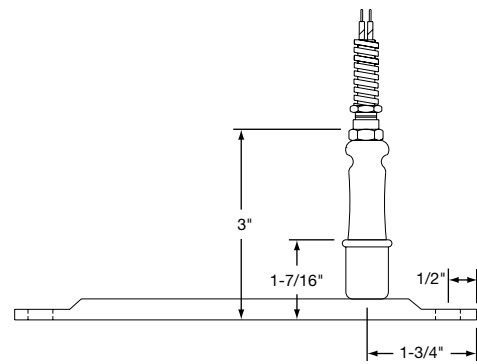


Type P High Temperature Quick Disconnect Plug. If armor protected lead wires are required, specify armor and lead length. Available on 1½" wide heaters only. Maximum Amps: 15 at 240VAC. Maximum Volts: 240.

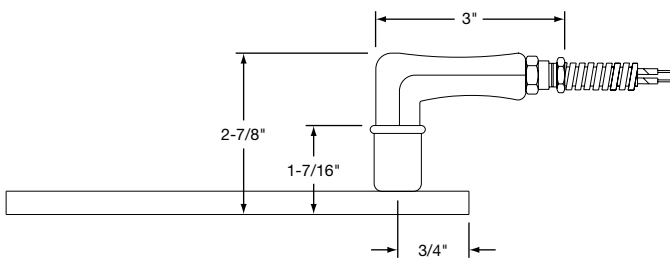
- Type P1A** Cup only (UT900)
- Type P1B** Cup and straight plug (H900)
- Type P1C** Cup and 90° plug (HW900)
- Type P1D** Cup, straight plug and galvanized cable
- Type P1G** Cup, 90° plug and galvanized cable



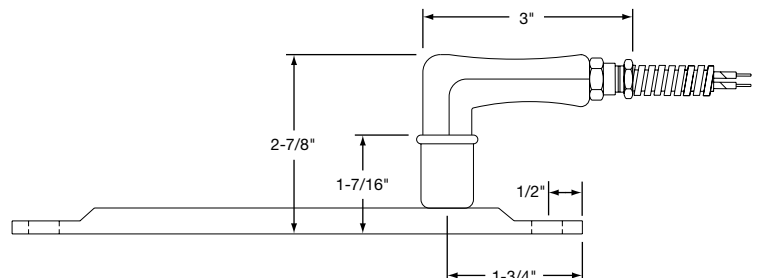
No Mounting Tabs (Type P1D)



With Mounting Tabs (Type P1D)



No Mounting Tabs (Type P1G)

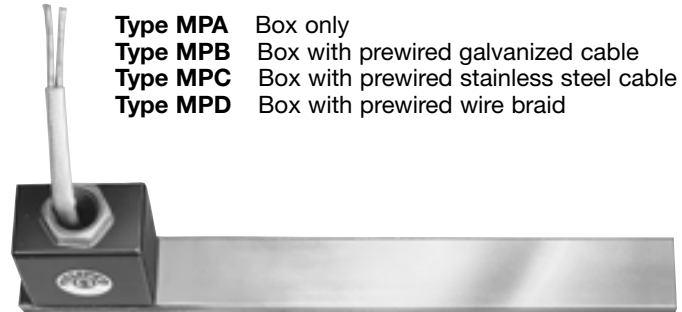
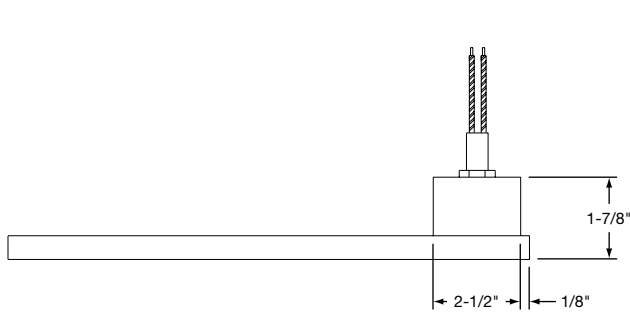


With Mounting Tabs (Type P1G)

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



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.



No Mounting Tabs



With Mounting Tabs



Ceramic Covers for Insulating Screw Terminals

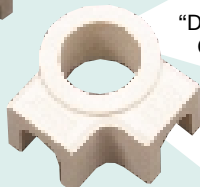
Igloo™ Ceramic Covers

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

Type C6
"Dual Port In Line"
CER-101-104



Type C7
"Double Port 90°"
CER-101-106



Type C8
"Single Port"
CER-101-107



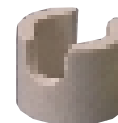
Three different types of Igloo bases are available for your wiring convenience. Double Port In Line, Double Port 90° and Single Port.

When ordering, specify the type of Igloo and the screw terminal size.

Conventional Ceramic Covers

Conventional ceramic covers also consist of two individual ceramic parts. They are only recommended when fully insulated wire terminal lugs are used.

When ordering, specify the screw terminal size.



Conventional Ceramic Base

Part Number: CER-101-101



All three ceramic cap sizes fit the Igloos and the conventional ceramic base.

Ceramic Cap

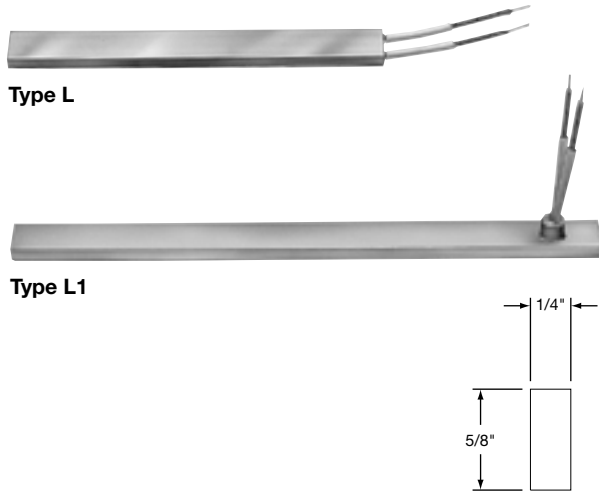
Thread	Part Number
10-32	CER-102-101
10-24	CER-102-104
8-32	CER-102-105



Ceramic Insulated

CHANNEL STRIP HEATERS

Standard 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 ²	W/cm ²		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	—
18	457.2	900	29	5	L1	—	CSH00018
20	508.0	1000	29	5	L1	CSH00019	—
20	508.0	1000	29	5	L1	—	CSH00020

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

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



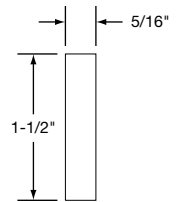
Length		Wattage	Watt Density		Type	Part Number	
in	mm		W/in ²	W/cm ²		120V	240V
8	203.2	250	13	2	CSH00021	—	
9½	241.3	300	13	2	CSH00022	—	
11	279.4	350	13	2	CSH00023	—	
12	304.8	400	13	2	CSH00024	CSH00025	
14	355.6	450	13	2	CSH00026	CSH00027	
15¼	387.4	500	13	2	CSH00028	CSH00029	
17⅞	454.0	600	13	2	CSH00030	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	
23¾	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	



Standard 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.

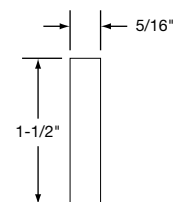


Length		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	120V	240V
7½	190.5	150	15	2	CSH00054	CSH00055
7½	190.5	200	20	3	CSH00056	CSH00057
8	203.2	150	13	2	*CSH00058	*CSH00059
8	203.2	175	15	2	CSH00060	CSH00061
8	203.2	250	21	3	*CSH00062	CSH00063
8	203.2	400	34	5	CSH00064	CSH00065
8	203.2	500	42	7	CSH00066	CSH00067
10½	266.7	250	12	2	*CSH00068	*CSH00069
10½	266.7	350	17	3	CSH00070	CSH00071
10½	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
15¼	387.4	325	9	1	CSH00084	CSH00085
15¼	387.4	500	13	2	CSH00086	CSH00087
17⅞	454.2	350	7	1	CSH00088	CSH00089
17⅞	454.2	375	8	1	CSH00090	CSH00091
17⅞	454.2	500	11	2	CSH00092	CSH00093
17⅞	454.2	750	16	2	*CSH00094	*CSH00095
17⅞	454.2	1000	21	3	CSH00096	CSH00097
19½	495.3	350	7	1	CSH00098	CSH00099
19½	495.3	500	9	1	CSH00100	CSH00101
19½	495.3	750	14	2	CSH00102	CSH00103
19½	495.3	1000	19	3	CSH00104	CSH00105

Length		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	120V	240V
21	533.4	500	8	1	CSH00106	CSH00107
21	533.4	750	13	2	CSH00108	CSH00109
23¾	603.3	500	7	1	CSH00110	CSH00111
23¾	603.3	750	11	2	*CSH00112	*CSH00113
23¾	603.3	1000	15	2	CSH00114	CSH00115
23¾	603.3	1500	22	3	CSH00116	CSH00117
25½	647.7	500	7	1	CSH00118	CSH00119
25½	647.7	750	10	2	CSH00120	CSH00121
25½	647.7	1000	13	2	CSH00122	CSH00123
26¾	679.5	700	9	1	CSH00124	CSH00125
26¾	679.5	750	9	1	CSH00126	CSH00127
26¾	679.5	1000	13	2	CSH00128	*CSH00129
29¼	743.0	750	8	1	CSH00130	CSH00131
30½	774.7	750	8	1	CSH00132	CSH00133
30½	774.7	1000	11	2	CSH00134	CSH00135
30½	774.7	1250	13	2	—	CSH00136
33½	850.9	750	7	1	CSH00137	CSH00138
34⅞	879.5	1000	9	1	CSH00139	CSH00140
35⅞	911.4	1000	9	1	CSH00141	CSH00142
35⅞	911.4	1500	13	2	CSH00143	CSH00144
37¼	946.2	1500	13	2	*CSH00145	*CSH00146
38½	977.9	800	7	1	CSH00147	CSH00148
38½	977.9	1000	8	1	CSH00149	CSH00150
38½	977.9	1500	12	2	CSH00151	CSH00152
42½	1079.5	1250	9	1	CSH00153	CSH00154
42½	1079.5	1500	11	2	CSH00155	CSH00156
47⅞	1216.2	1350	9	1	—	CSH00157
47⅞	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		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	120V	240V
5½	139.7	125	23	4	*CSH00159	CSH00160
5½	139.7	250	46	7	*CSH00161	*CSH00162
5¾	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	250	17	3	—	*CSH00171
10½	266.7	250	11	2	CSH00172	CSH00173
12	304.8	350	12	2	—	CSH00174
14	355.6	500	14	2	*CSH00175	*CSH00176
17⅞	454.2	750	15	2	CSH00177	CSH00178
23¾	603.3	750	10	2	CSH00179	*CSH00180
29¼	743.0	750	8	1	CSH00181	CSH00182
34⅞	879.5	1000	9	1	*CSH00183	*CSH00184
35⅞	911.4	1000	9	1	CSH00185	CSH00186
37¼	946.2	1500	12	2	CSH00187	CSH00188

STOCK ITEMS
ORDER NOW!

an asterisk next to the Part Number
guarantees in-stock availability
for same day shipping when

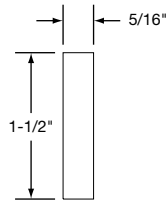
ORDERED BY 2^{PM}
CST



Ceramic Insulated

CHANNEL STRIP HEATERS

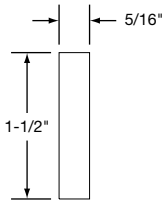
Standard Sizes and Ratings



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

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

Length		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	120V	240V
8	203.2	150	13	2	CSH00189	CSH00190
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
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
35⅝	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" x 5/16" (38.1 x 7.94 mm)
Channel Strip Heaters**

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

Length		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	120V	240V
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
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
21	533.4	500	9	1	CSH00254	CSH00255

Length		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	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
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

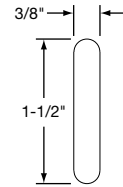




Standard Sizes and Ratings

1-1/2" × 3/8" (38.1 × 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 ²	W/cm ²	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

How to Order

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



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 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
- Shrinking Tunnels
- Air Heating
- Heat Curing
- Dehumidifier

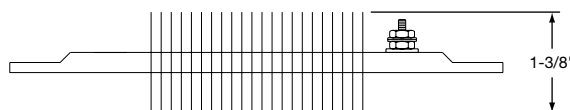
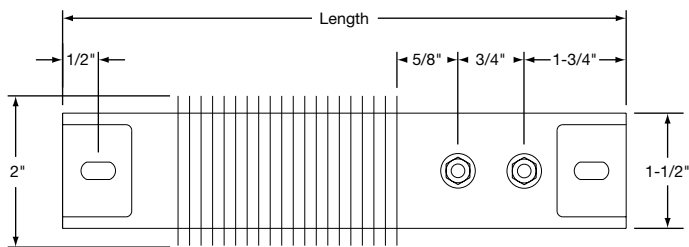
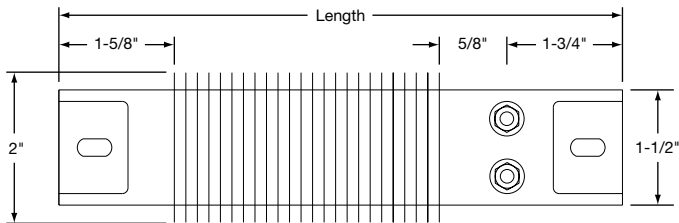
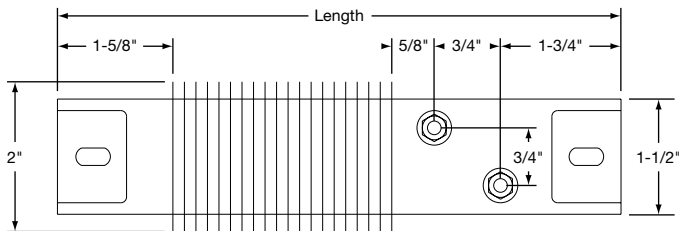
Nickel plated steel fins (optional SS) are mounted to the rectangular tubing. The fins have been specially designed to provide maximum surface contact for good heat dissipation into the finned cross sections, thus resulting in rapid heat transfer to the air.

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

Various sizes "IN STOCK" for immediate delivery.

Design Features

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



Type T4

Type T3

Type T2

Fin Height



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 ²	Max. W/cm ²
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 ²	Max. W/cm ²
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 RATINGS

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"

Oversize For Secondary Insulating Bushing:
1/2" × 5/8" for 480 Volts and above



Tempco's Finned Strip Heaters are recognized under the UL component recognition program. Consult Tempco for limitations.
UL file number E65652.

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.

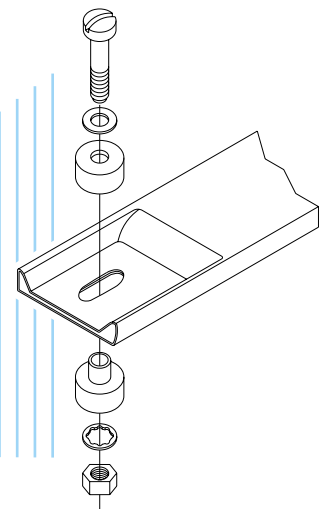
When Insulating Bushings are required, a 1/2" × 5/8" slot is substituted for the standard slot size (5/16" × 1/2").



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.



FINNED STRIP HEATERS

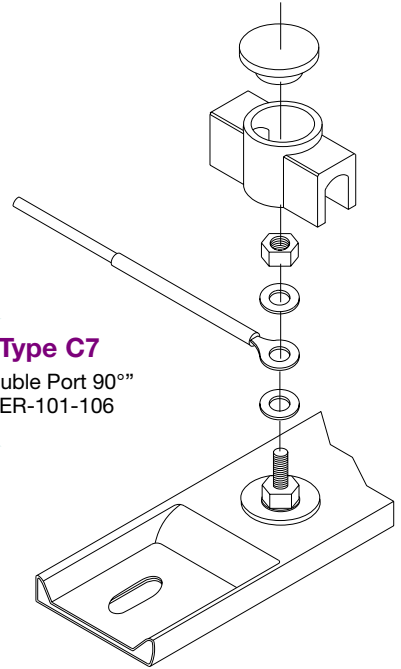
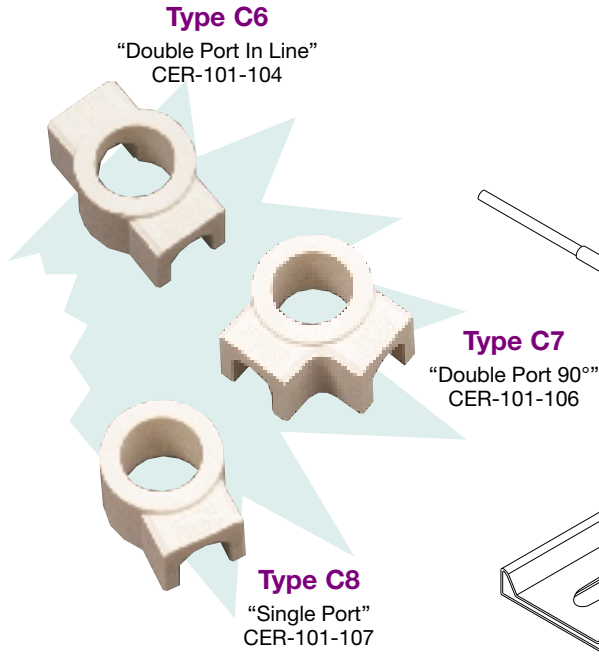
Ceramic Covers for Insulating Screw Terminals

Igloo™ Ceramic Covers

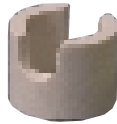
Igloo™ Ceramic terminal covers consist of two individual ceramic parts. With a tight fitting cap and a solid base, an Igloo™ will fully insulate any standard #8 or #10 terminal lug used for electrical wiring hookups. Igloos can be assembled on all Channel Strip and Finned Strip heaters with Type T1 and 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 Igloos.

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.



All three ceramic cap sizes fit the Igloos and the conventional ceramic base.

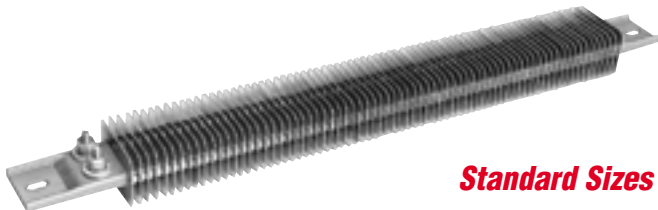


Ceramic Cap

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

Conventional Ceramic Base

Part Number: CER-101-101



Standard Sizes and Ratings — Finned Strip Heaters with T3 Termination

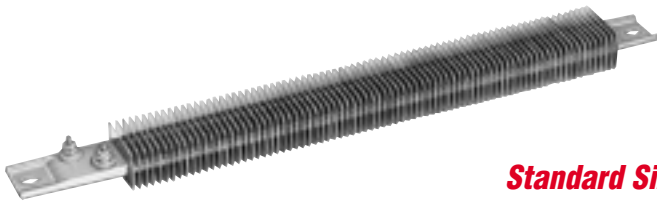
Length in mm	Wattage	Watt Density		Part Number	
		W/in ²	W/cm ²	120V	240V
10½ 266.7	500	21	3	*CSF00001	*CSF00002
10½ 266.7	725	31	5	*CSF00003	*CSF00004
12 304.8	500	17	3	*CSF00005	—
12 304.8	650	22	3	CSF00006	CSF00007
12 304.8	900	31	5	*CSF00008	*CSF00009
14 355.6	750	21	3	CSF00010	CSF00011
14 355.6	1100	30	5	*CSF00012	CSF00013
15¼ 387.4	1250	31	5	*CSF00014	*CSF00015
17¾ 454.0	1550	31	5	*CSF00016	*CSF00017
19½ 495.3	1700	30	5	*CSF00018	*CSF00019
20 508.0	500	9	1	CSF00020	CSF00021
21 533.4	750	12	2	CSF00022	CSF00023

Length in mm	Wattage	Watt Density		Part Number	
		W/in ²	W/cm ²	120V	240V
21 533.4	1900	31	5	*CSF00024	*CSF00025
23¾ 603.3	2200	31	5	—	CSF00026
25½ 647.7	2400	31	5	—	CSF00027
26¾ 679.5	2500	30	5	—	*CSF00028
30 762.0	2100	22	3	CSF00029	CSF00030
30½ 774.7	2800	29	5	—	CSF00031
31½ 800.1	2800	28	4	—	*CSF00032
33½ 850.9	3150	29	5	—	CSF00033
35¾ 911.2	3450	30	5	—	CSF00034
38½ 977.9	3700	30	5	—	CSF00035
42½ 1079.5	4150	30	5	—	CSF00036
48 1219.2	2250	14	2	—	CSF00037



an asterisk next to the Part Number guarantees in-stock availability for same day shipping when





Standard Sizes and Ratings — Finned Strip Heaters with T4 Termination

Length		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	120V	240V
10½	266.7	350	17	3	CSF00038	CSF00039
10½	266.7	475	23	4	CSF00040	CSF00041
10½	266.7	600	29	4	CSF00042	CSF00043
10½	266.7	725	35	5	CSF00044	CSF00045
12	304.8	250	10	1	—	CSF00046
12	304.8	500	19	3	CSF00047	CSF00048
12	304.8	700	27	4	CSF00049	CSF00050
12	304.8	750	29	4	CSF00051	CSF00052
12	304.8	900	34	5	CSF00053	CSF00054
14	355.6	500	15	2	—	CSF00055
14	355.6	750	22	3	CSF00056	CSF00057
14	355.6	900	27	4	CSF00058	CSF00059
14	355.6	1100	33	5	CSF00060	CSF00061
15¼	387.4	325	9	1	CSF00062	CSF00063
15¼	387.4	850	22	3	—	CSF00064
15¼	387.4	1000	26	4	CSF00065	CSF00066
15¼	387.4	1250	33	5	—	*CSF00067
17⅞	454.0	500	11	2	CSF00068	CSF00069
17⅞	454.0	750	16	2	—	CSF00070
17⅞	454.0	1000	21	3	CSF00071	CSF00072
17⅞	454.0	1300	27	4	CSF00073	CSF00074
17⅞	454.0	1550	33	5	—	CSF00075
19½	495.3	1000	19	3	—	CSF00076
19½	495.3	1250	23	4	—	CSF00077
19½	495.3	1500	28	4	CSF00078	CSF00079
19½	495.3	1700	32	5	—	CSF00080
21	533.4	750	13	2	—	CSF00081
21	533.4	1000	17	3	—	CSF00082
21	533.4	1150	20	3	—	CSF00083
21	533.4	1250	21	3	—	CSF00084
21	533.4	1900	32	5	—	*CSF00085

Length		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	120V	240V
23¾	603.3	750	11	2	—	CSF00086
23¾	603.3	1000	15	2	—	CSF00087
23¾	603.3	1450	21	3	—	CSF00088
23¾	603.3	1800	26	4	—	CSF00089
23¾	603.3	2200	32	5	—	CSF00090
25½	647.7	1250	17	3	—	CSF00091
25½	647.7	1500	20	3	—	CSF00092
25½	647.7	2000	27	4	—	CSF00093
25½	647.7	2400	32	5	—	CSF00094
26¾	679.5	700	9	1	CSF00095	CSF00096
26¾	679.5	1350	17	3	—	CSF00097
26¾	679.5	1600	20	3	—	CSF00098
26¾	679.5	2000	25	4	—	CSF00099
26¾	679.5	2500	31	5	—	*CSF00100
30½	774.7	1500	16	2	—	CSF00101
30½	774.7	1800	19	3	—	CSF00102
30½	774.7	2350	25	4	—	CSF00103
30½	774.7	2800	30	5	—	CSF00104
35⅞	911.2	1000	9	1	—	CSF00105
35⅞	911.2	1500	13	2	—	CSF00106
35⅞	911.2	1800	16	2	—	CSF00107
35⅞	911.2	2300	20	3	—	CSF00108
35⅞	911.2	2850	25	4	—	CSF00109
35⅞	911.2	3450	31	5	—	CSF00110
38½	977.9	2000	16	3	—	CSF00111
38½	977.9	2450	20	3	—	CSF00112
38½	977.9	3100	25	4	CSF00113	CSF00114
38½	977.9	3600	29	5	—	CSF00115
42½	1079.5	3450	25	4	—	CSF00116
42½	1079.5	4150	30	5	—	CSF00117
48	1219.2	2250	14	2	—	CSF00118



an asterisk next to the Part Number guarantees in-stock availability for same day shipping when

ORDERED BY 2^{PM} CST

How to Order

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.**

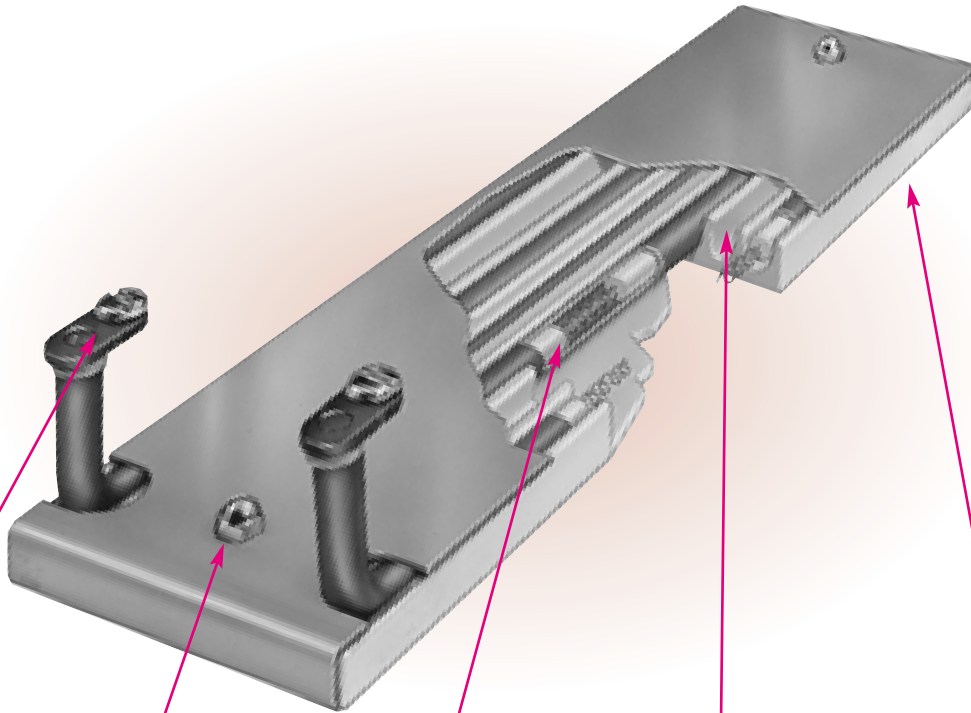
Please Specify the following:

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



MAXISTRIP

A 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 introduces Maxistrip Heaters. A durable and quality-built strip heater, 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 plastics or rubber processing machinery, and for packaging equipment.



Note:

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

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



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/in² (3.1 W/cm²)

ELECTRICAL RATINGS

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

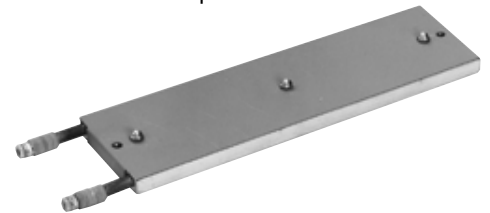
Widths: 1½", 2½", 3", 4"
Thickness: ½"

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



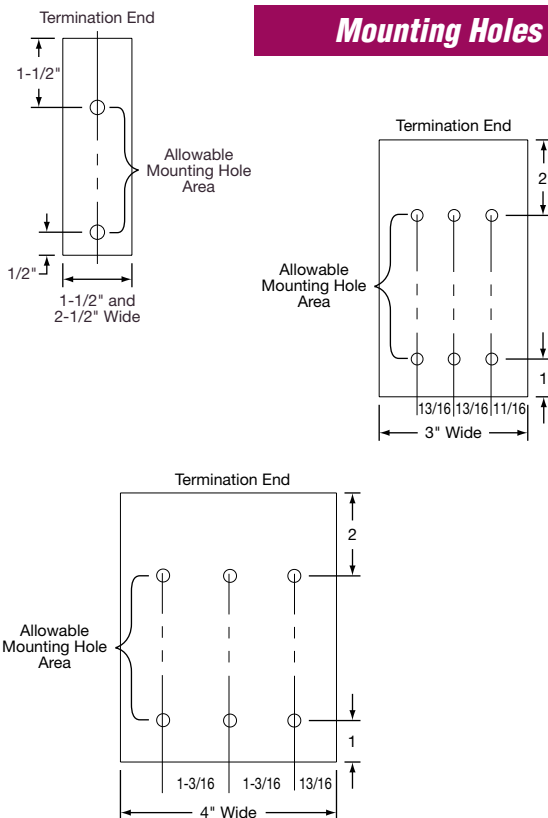
Type W2 Straight Up Wire Braid Leads

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





MAXISTRIP

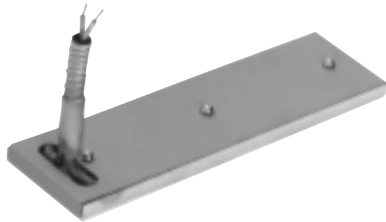
Abrasion Resistant Terminations



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.

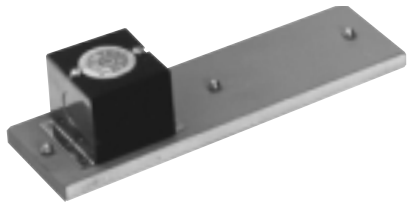


Type R1 Single Armor Cable Leads

Armor Cable provides excellent protection against abrasion and contaminants. The cable exits through an adapter that encapsulates the element ends. The adapter 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 Terminal Box

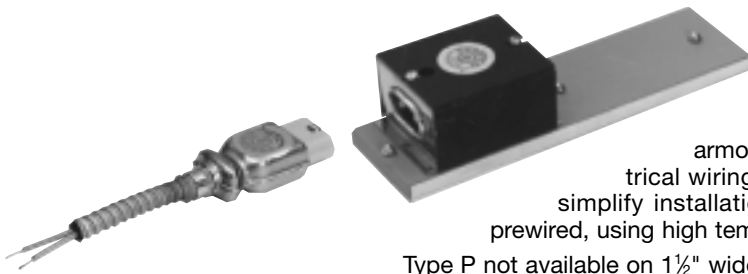
Terminal Boxes provide a simple and economical way to eliminate all live exposed terminals and electrical wiring that can be a potential hazard to employees or machines. Boxes have 5/8" knockouts for standard connections to simplify installation. Strip heaters fitted with boxes can be supplied, factory prewired with leads, armor cable or braid.

Type CA Box only

Type CB Box with galvanized cable

Type CC Box with SS 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 P2C w/straight plug and galvanized cable

Type P2D w/straight plug and SS cable

Type P2E w/straight plug and wire braid

Standard Sizes and Electrical Ratings

Width 1 1/2" (38.1 mm)

Length in mm	Wattage	Watt Density		Part Number	
		W/in ²	W/cm ²	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	—

Length in mm	Wattage	Watt Density		Part Number	
		W/in ²	W/cm ²	120V	240V
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
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



Width 1½" (38.1 mm)

Length		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	120V	240V
10	254.0	375	25	4	MXS00046	MXS00047
10¼	260.4	385	25	4	MXS00048	MXS00049
10½	266.7	315	20	3	MXS00050	MXS00051
10½	266.7	395	25	4	MXS00052	MXS00053
11	279.4	330	20	3	MXS00054	MXS00055
11	279.4	410	25	4	MXS00056	MXS00057
11¼	285.8	335	20	3	MXS00058	MXS00059
11½	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
12½	317.5	375	20	3	MXS00068	MXS00069
12¾	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

Width 2½" (63.5 mm)

Length		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	120V	240V
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 2½" (63.5 mm)

Length		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	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

Width 3" (76.2 mm)

Length		Wattage	Watt Density		Part Number	
in	mm		W/in ²	W/cm ²	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 ²	W/cm ²	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

How to Order

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.**

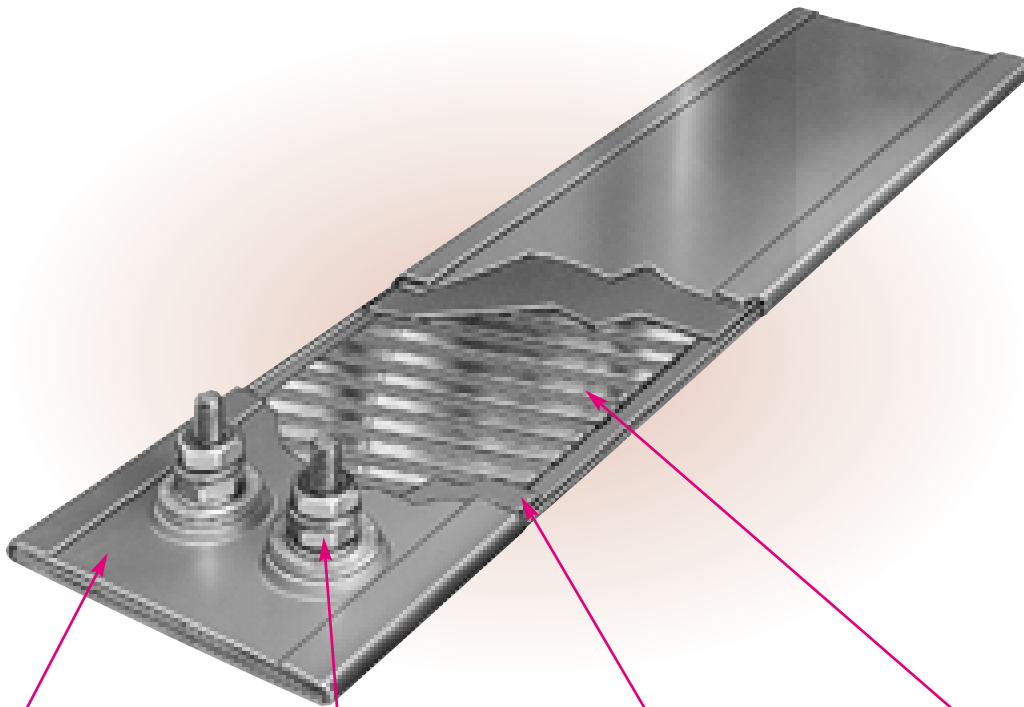
Please Specify the following:

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



MICA INSULATED

**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 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



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.



Used in Hundreds of Industrial and Commercial Heating Applications



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/in² (0.8-7.0 W/cm²)

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

ELECTRICAL RATINGS

Maximum Voltage: 240 Volts

Maximum Amperage: 25 Amps

Resistance Tolerance: +10%, -5%

Wattage Tolerance: +5%, -10%

MATERIAL SPECIFICATIONS & PHYSICAL SIZES

Standard Sheath Material: Rust resistant steel

Optional: Stainless Steel or Aluminum

Nominal Thickness: $\frac{3}{16}$ " (4.76 mm)

Minimum Width: $\frac{5}{8}$ " (15.88 mm)

Width Tolerance: $\pm\frac{1}{32}$ " (0.79 mm)

Maximum Length: 60" (1524 mm)

Length Tolerance: Up to 24" (610 mm) $\pm\frac{1}{16}$ " (1.59 mm)
Over 24" (610 mm) $\pm\frac{1}{8}$ " (3.18 mm)

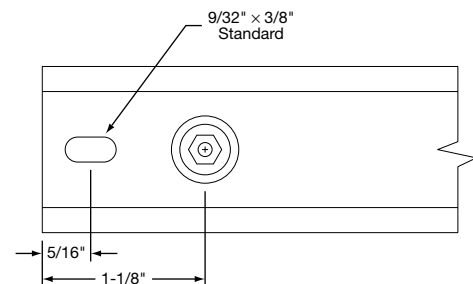
Screw Terminals

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

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



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



Installation

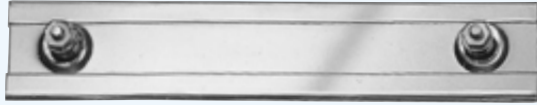
- 1 Tempco Mica Insulated Strip Heaters are available with mounting slots at each end for surface mounting applications or without mounting slots for insertion into milled slots.
- 2 For surface mounting installations, Mica Strip heaters must be clamped securely along their entire length to a smooth metal surface by using metal clamps 3" to 5" apart. See page 8-25 for Hold-Down Clamps.
- 3 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.

Instructions

- 4 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.
- 5 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.



MICA INSULATED



Type T1

Screw terminals at opposite ends. Minimum width required is $\frac{7}{8}$ ".



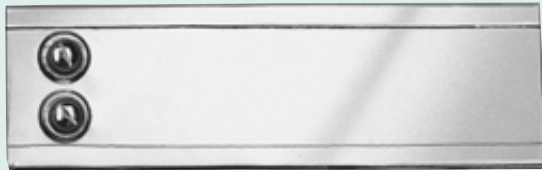
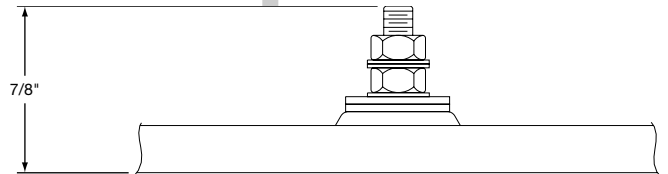
Type T2

Screw terminals tandem at one end. Minimum width required is $\frac{7}{8}$ ".



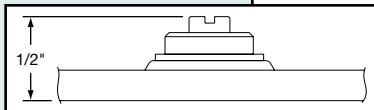
Type T3

Screw terminals parallel at one end. Minimum width required is 2".



Type B

Low profile button terminals 10-32 thread with binding head screws. Similar to types T1, T2 and T3 (same minimum width requirements), button terminals can be at opposite ends (B1), or at the same end (B2 or B3). 6-32 threads available.



Type C

Terminal box has one $\frac{5}{8}$ " knockout for ease of wiring. It provides excellent protection against exposed terminals. Boxes can be prewired with armor cable or wire braid.

- Type CA** Box only
- Type CB** Box with galvanized cable
- Type CC** Box with Stainless Steel cable
- Type CD** Box with wire braid



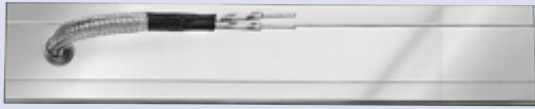
Type P1

High Temperature quick disconnect plug. Available on 2" widths and wider with cup and plug assembly or just cup. If armor protected lead wires required, specify armor and lead length.



Igloo™

Igloo™ ceramic terminal covers consist of two ceramic parts. With a tight fitting cap and a solid base, an Igloo™ will fully insulate any standard #8 or #10 terminal lug used for electrical wiring hookup. Igloos can be assembled onto any standard mica strips with #10 screw terminals. Igloos are available in 3 different styles. single port, double port in-line and double port 90°. **See page 8-14 for specific part numbers.** Picture shown here is of a heater with double port in-line Igloos.



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.



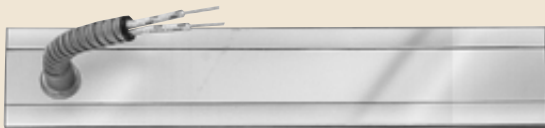
Type W2

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 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 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.



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



MICA INSULATED

Standard 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 ²	W/cm ²		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	63.5	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	—
2⅞	73.0	6	152.4	300	24	4	T3	MSH00048	—
2⅞	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
4	101.6	20	508.0	1750	25	4	R1	—	MSH00064
4⅞	111.1	7⅞	179.4	800	33	5	W2	—	MSH00065
4¾	120.7	5½	139.7	700	36	6	T2	—	MSH00066
4¾	120.7	11¼	285.8	200	4	1	T3	—	MSH00067



Standard Sizes and Ratings

Width		Length		Wattage	Watt Density		Termination	Part Number	
in	mm	in	mm		W/in ²	W/cm ²		120V	240V
4 ⁷ / ₈	123.8	11 ⁷ / ₁₆	290.5	1200	26	4	T3	—	MSH00068
5 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 ¹ / ₂	292.1	625	9	1	R1	MSH00072	—
8	203.2	9 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	—

How to Order

Catalog Heaters

Select a Mica Strip Heater from the Standard Sizes and Ratings List on pages 8-25 and 8-26. 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 Mica Insulated Heater to meet your requirements. **Standard lead time is 2 weeks.**

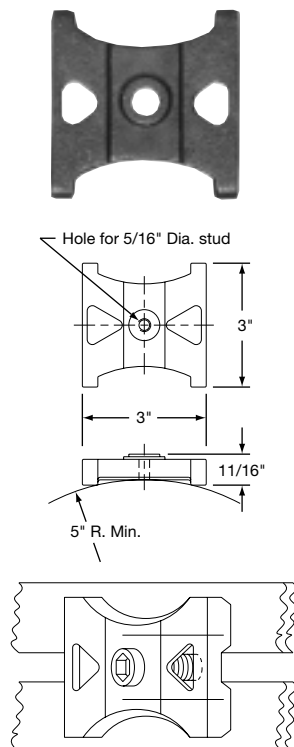
Please Specify the following:

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

Hold-Down Clamps

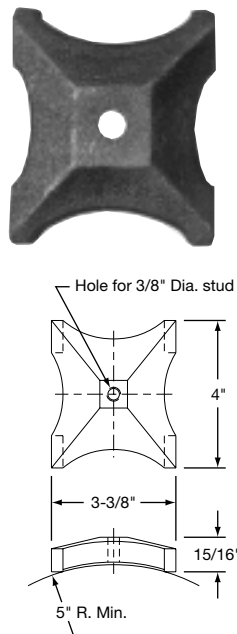
Use to clamp 2 strip heaters on 2" centers using ⁵/₁₆" studs spaced 5" apart.

Part Number: FASR-1008



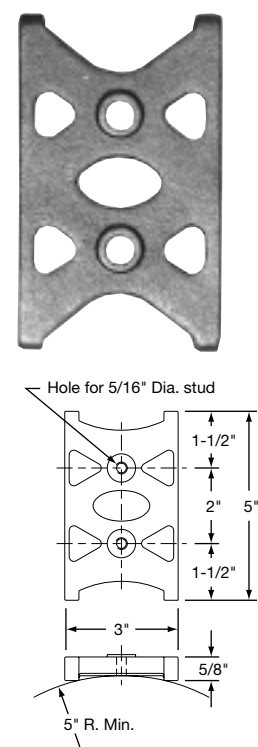
Use to clamp 2 strip heaters on 3" centers using ³/₈" studs spaced 5" apart.

Part Number: FASR-1009



Use to clamp 3 strip heaters on 2" centers using ⁵/₁₆" studs spaced 5" apart.

Part Number: FASR-1010



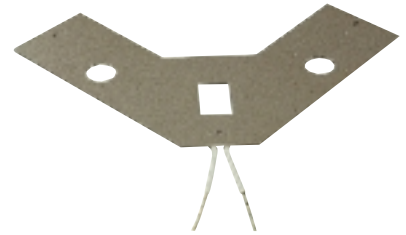
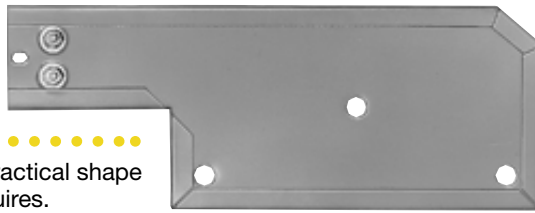


MICA INSULATED

Special Features

Irregular Shapes

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



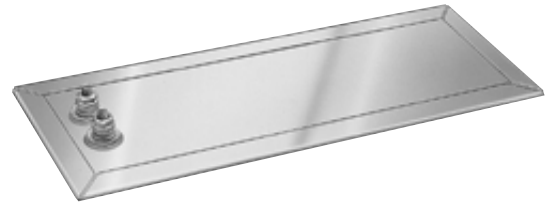
Butt Case

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



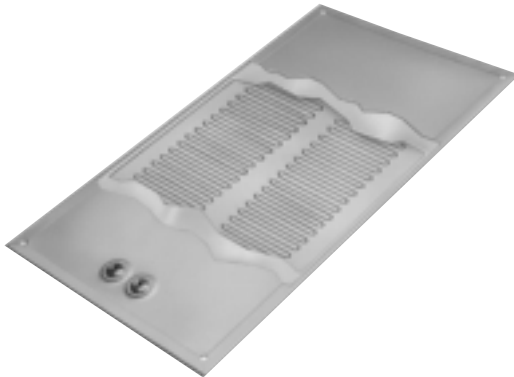
Four Sides Closed

Mica Strip Heaters can be closed on all four sides to prevent contamination from getting inside the heater. Recommended on all strip heaters over 2½" in width.



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. Due to the design and tooling costs, this is economical only in large volume jobs.



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.



Open Element

This economical heater design without the metal case is commonly used in laminating machines. The heater assembly is sandwiched between 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.

Experience The Tempco Advantage

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

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