

FINNED 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

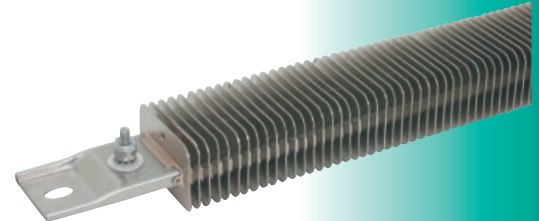
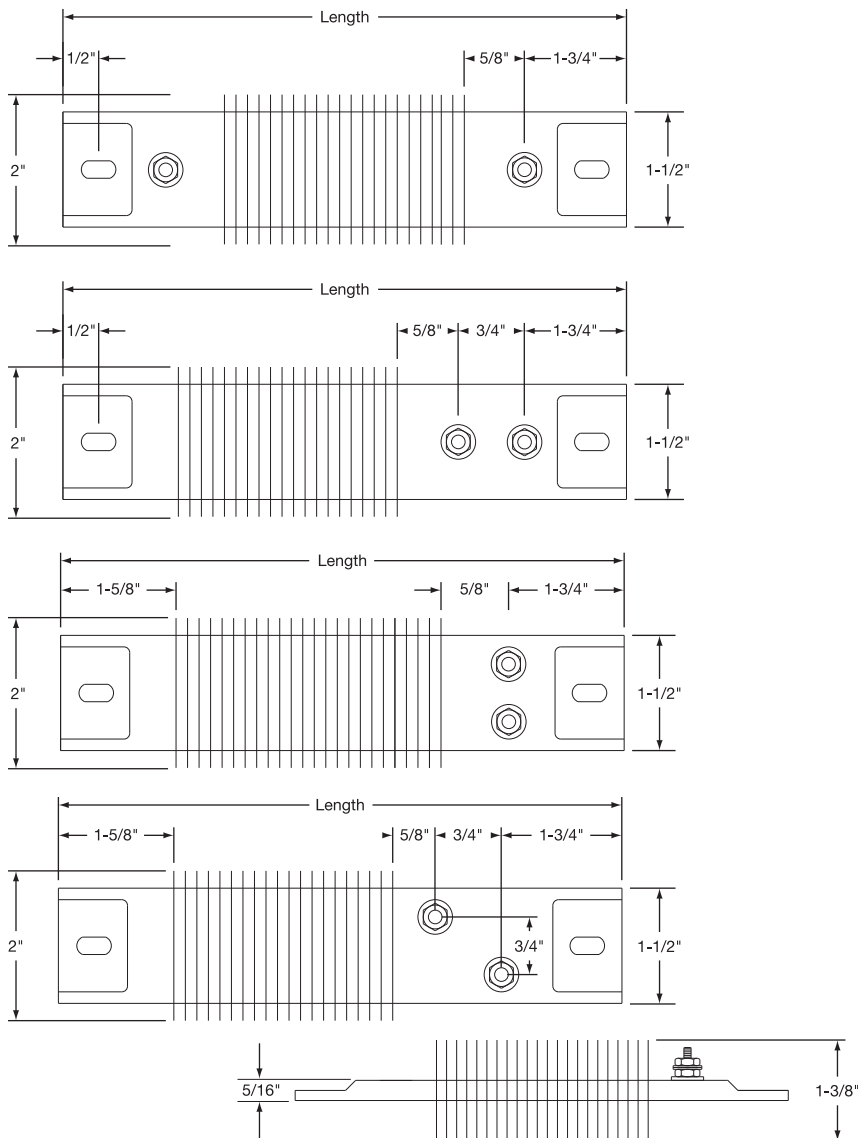
Nickel-plated steel fins (Stainless Steel optional) are mounted to the rectangular tubing. The fins have been specially designed to provide maximum surface contact for good heat dissipation into the finned cross sections, thus resulting in rapid heat transfer to the air.

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

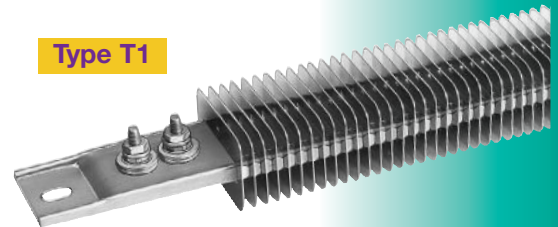
Design Features

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

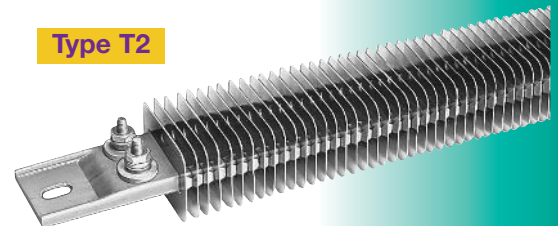
Screw Terminal Terminations



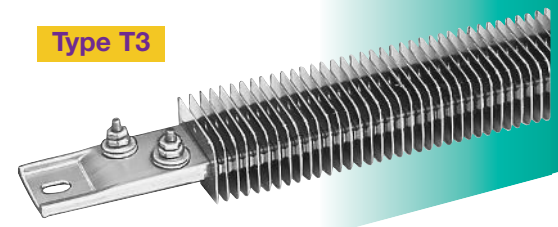
Type T1



Type T2



Type T3



Type T4

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:

Air Condition	Max. W/in ²	Max. W/cm ²
Still Air		
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		
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

Agency Approvals

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

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

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

ELECTRICAL SPECIFICATIONS

Maximum Voltage: 480VAC (when applicable)

Maximum Amperage: 25 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 300 Volts and above



Note: For Internal Power Variations see page 8-8.

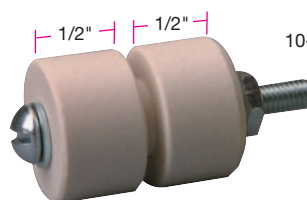
Secondary Insulating Bushings

Used to mount finned strip heaters in air heating applications. Also can be used when it is necessary to electrically isolate the heater from ground.

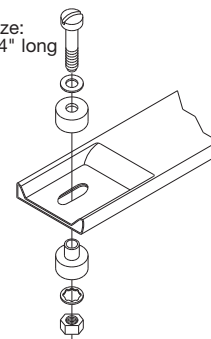
When Insulating Bushings are required, a 1/2" × 5/8" slot is substituted for the standard slot size (5/16" × 1/2").



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.



Screw Size:
10-32 × 1-3/4" long



Insulating Bushing Assembly

Part Number: CERR-1001

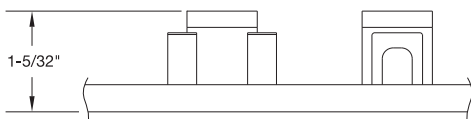
NOTE: Two assemblies are required for each heater.

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 10-32 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. Channel Strip heaters with screw terminals that have a minimum center to center distance of 7/8" can also be assembled with Igloo covers.

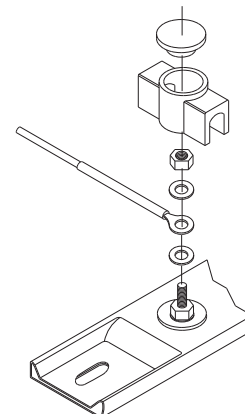


Type C6
Double Port In-Line
Part Number: CER-101-104

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



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



Ceramic Cap
Thread: 10-32
Part Number: CER-102-101



Strip Heaters



Standard Sizings and Ratings

Standard (Non-Stock) and Stock Sizes and Ratings



Stock Items Are Shown In **RED**

Length in	mm	Wattage	Watt Density		Part Number	
			W/in ²	W/cm ²	120V	240V
10½	266.7	350	18	3	CSF00519	CSF00520
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	750	18	3	CSF00506	CSF00524

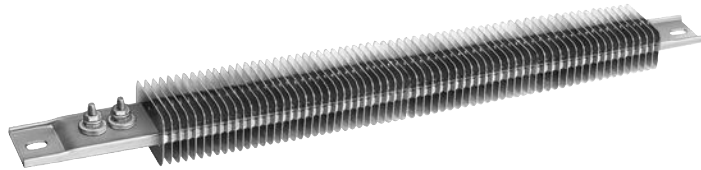
Finned Strip Heaters with T1 Terminals

Stock Items Are Shown In **RED**

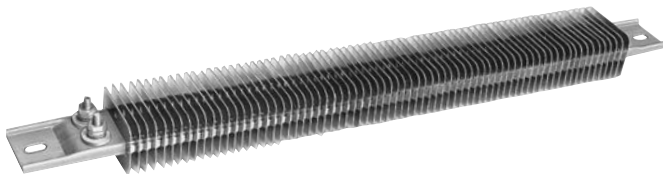
Length in	mm	Wattage	Watt Density		Part Number	
			W/in ²	W/cm ²	120V	240V
17⅞	454.0	1000	25	4	CSF00540	CSF00525
17⅞	454.0	1550	38	6	CSF00144	CSF00145
19½	495.3	1000	21	3	—	CSF00526
19½	495.3	1700	36	6	—	CSF00150
21	533.4	1900	36	6	CSF00154	CSF00155
23¾	603.3	1000	16	3	—	CSF00527
23¾	603.3	1450	24	4	CSF00529	—
23¾	603.3	2200	36	6	—	CSF00159
25½	647.7	1500	23	3	CSF00530	CSF00531
25½	647.7	2400	35	5	—	CSF00165
26¾	679.5	2500	34	5	—	CSF00167
30½	774.7	1800	21	3	—	CSF00532
30½	774.7	2800	29	5	—	CSF00176
33½	850.9	2100	21	3	—	CSF00533
33½	850.9	3150	32	5	—	CSF00178
35⅞	911.2	3450	33	5	—	CSF00181
42½	1079.5	4150	31	5	—	CSF00217
48	1219.2	2250	15	2	—	CSF00534

Finned Strip Heaters with T2 Terminals

Stock Items Are Shown In **RED**



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



Stock Items Are Shown In **RED**

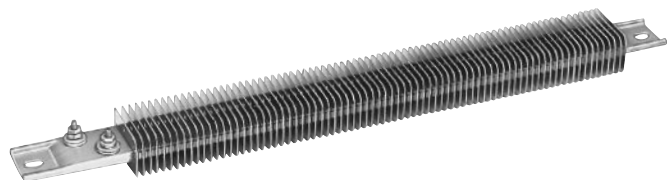
Length in	mm	Wattage	Watt Density		Part Number	
			W/in ²	W/cm ²	120V	240V
10½	266.7	350	16	3	CSF00500	CSF00501
10½	266.7	500	21	3	CSF00001	CSF00002
10½	266.7	725	31	5	CSF00003	CSF00004
12	304.8	500	17	3	CSF00005	—
12	304.8	650	23	3	—	CSF00007
12	304.8	900	31	5	CSF00008	CSF00009
14	355.6	750	21	3	CSF00010	CSF00011
14	355.6	1100	31	5	CSF00012	CSF00013
15¼	387.4	1250	31	5	CSF00014	CSF00015
17⅞	454.0	750	16	3	CSF00505	CSF00543
17⅞	454.0	1000	21	3	CSF00539	CSF00507
17⅞	454.0	1550	31	5	CSF00016	CSF00017

Finned Strip Heaters with T3 Terminals

Stock Items Are Shown In **RED**

Length in	mm	Wattage	Watt Density		Part Number	
			W/in ²	W/cm ²	120V	240V
19½	495.3	1000	19	3	—	CSF00508
19½	495.3	1700	31	5	CSF00018	CSF00019
21	533.4	1900	31	5	CSF00024	CSF00025
23¾	603.3	1000	15	2	—	CSF00509
23¾	603.3	1450	21	3	CSF00511	—
23¾	603.3	2200	32	5	—	CSF00026
25½	647.7	1500	21	3	CSF00513	CSF00514
25½	647.7	2400	32	5	—	CSF00027
26¾	679.5	2500	30	5	—	CSF00028
30½	774.7	1800	19	3	—	CSF00515
30½	774.7	2800	30	5	—	CSF00031
33½	850.9	2100	20	3	—	CSF00517
33½	850.9	3150	30	5	—	CSF00033
35⅞	911.2	3450	31	5	—	CSF00034
42½	1079.5	4150	31	5	—	CSF00036
48	1219.2	2250	14	2	—	CSF00037

Standard (Non-Stock) and Stock Sizes and Ratings



Stock Items Are Shown In **RED**

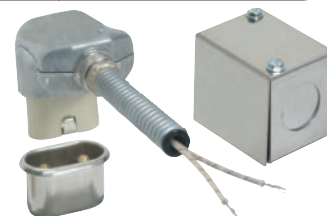
Length in mm	Wattage	Watt Density		Part Number	
		W/in ²	W/cm ²	120V	240V
8½ 215.9	250	18	3	CSF00252	
10½ 266.7	350	17	3		CSF00039
10½ 266.7	500	24	4	CSF00129	CSF00130
10½ 266.7	600	33	5	CSF00042	
10½ 266.7	725	40	6	CSF00044	CSF00045
10½ 266.7	850	47	7	CSF00209	
12 304.8	500	19	3	CSF00047	
12 304.8	900	34	5	CSF00053	CSF00054
14 355.6	750	23	3	CSF00056	CSF00057
14 355.6	1100	36	6	CSF00060	CSF00061
15¼ 387.4	1000	27	4	CSF00065	
15¼ 387.4	1250	33	5	CSF00143	CSF00067
17⅞ 454.0	1000	23	3	CSF00071	
17⅞ 454.0	1300	28	4	CSF00073	
17⅞ 454.0	1550	30	5	CSF00148	CSF00075
19½ 495.3	1250	24	4		CSF00077

Finned Strip Heaters with T4 Terminals

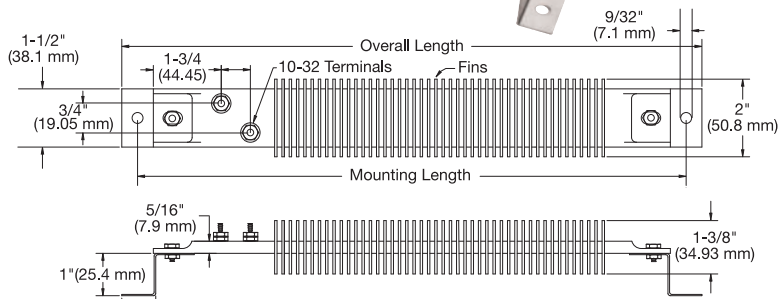
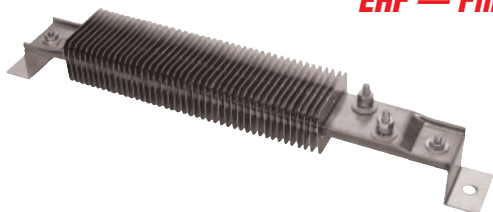
Stock Items Are Shown In **RED**

Length in mm	Wattage	Watt Density		Part Number	
		W/in ²	W/cm ²	120V	240V
19½ 495.3	1700	32	5	—	CSF00080
21 533.4	1900	33	5	CSF00158	CSF00085
23¼ 603.3	1000	15	2	—	CSF00528
23¼ 603.3	1450	22	3	—	CSF00088
23¼ 603.3	2200	33	5	—	CSF00090
25½ 647.7	2400	33	5	—	CSF00094
26¼ 679.5	2500	32	5	—	CSF00100
30½ 774.7	1800	20	3	—	CSF00102
30½ 774.7	2800	28	4	—	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

NOTE: Type C – Terminal Box and Type P – High Temperature Quick Disconnect Plug are available. See page 8-6 for details.



EHF — Finned Channel Strip Enclosure Heaters



NOTE: See page 7-41, 9-18 and 11-114 for other type enclosure heaters.

Design Features

- * 10-32 offset screw terminals (T4 style) standard, other terminations available
- * UL recognized component
- * Stainless steel sheath and fins
- * Easy installation with special enclosure mounting brackets

Stock and Standard (Non-Stock) Series EHF Heaters

Stock Items Are Shown In **RED**

Overall Length	Mounting Dimension	Watts	Part Number	
			120V	240V
12.125	11.375	200	EHF00001	EHF00002
15.625	14.875	350	EHF00003	EHF00004
19.5	18.75	450	EHF00005	EHF00006
25.375	24.625	700	EHF00007	EHF00008

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 in **RED** are available from Stock for immediate delivery.

Standard Non-Stock Part Numbers have a 3-week lead time.

Custom Engineered/Manufactured Heaters

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
- Power Variation (see page 8-8)

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

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