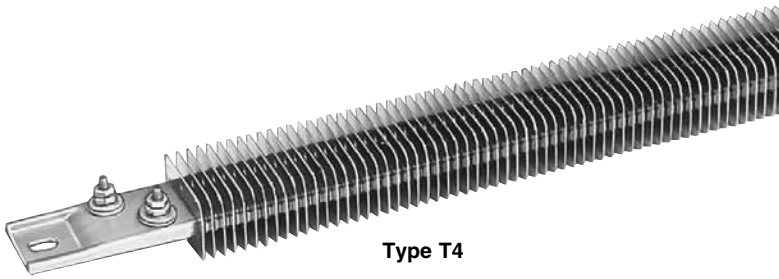
Ceramic Insulated Finned Strip Heaters

CSF4 Series



Type T4

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

Typical Applications

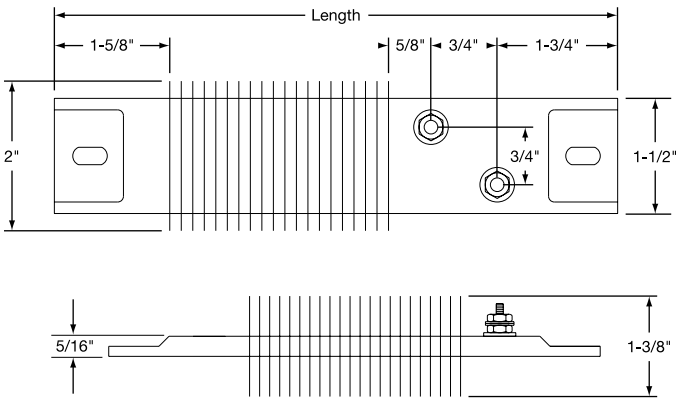
- Duct Heating
- Space Heaters
- Drying Ovens
- Food Warmers
- Dehumidifier
- Shrinking Tunnels
- Air Heating
- Heat Curing

OMEGA® 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.

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.

OMEGA finned strip heaters are manufactured in a full line of standard sizes, electrical ratings and terminations, or can be made to your specifications.



Fin Height

Specifications and Tolerances

If tighter tolerances are required consult OMEGA.

Performance Ratings

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

Maximum Watt Density:

Still Air	Max Watt/cm²	Max Watt/in²
Up to 149°C (300°F)	3.1	20
149 to 316°C (300 to 600°F)	2.5	16
316 to 427°C (600 to 800°F)	1.6	10
Moving Air	**Max Watt/cm²**	**Max Watt/in²**
At 3 m/sec, up to 93°C (600'/minute, up to 200°F)	6.2	40
At 3 m/sec, up to 204°C (600'/minute, up to 400°F)	4.7	30
At 3 m/sec, up to 316°C (600'/minute, up to 600°F)	3.1	20

Electrical Specifications

Maximum Voltage: 480 Vac (when applicable)

Maximum Amperage: 25 A

Resistance Tolerance: 10%, –5%

Wattage Tolerance: 5%, –10%

Material Specifications and Physical Sizes

Sheath: 304 stainless steel

Fins: Nickel plated steel (stainless steel optional)

Screw Terminals: Stainless steel 10-32 UNF threads

Width Including Fins: 51 mm (2")

Height Including Fins: 35 mm (1⅜")

Length Tolerance: Up to 0.61 m (24") ±1⁄16", over 0.61 m (24") ±⅛"

Mounting Slot Size: Standard 8 x 13 mm (5⁄16 x ½")

Slot Size For Secondary Insulating Bushing: 13 x 16 mm (½ x 5⁄8") for 300V and above

Secondary Insulating Bushings

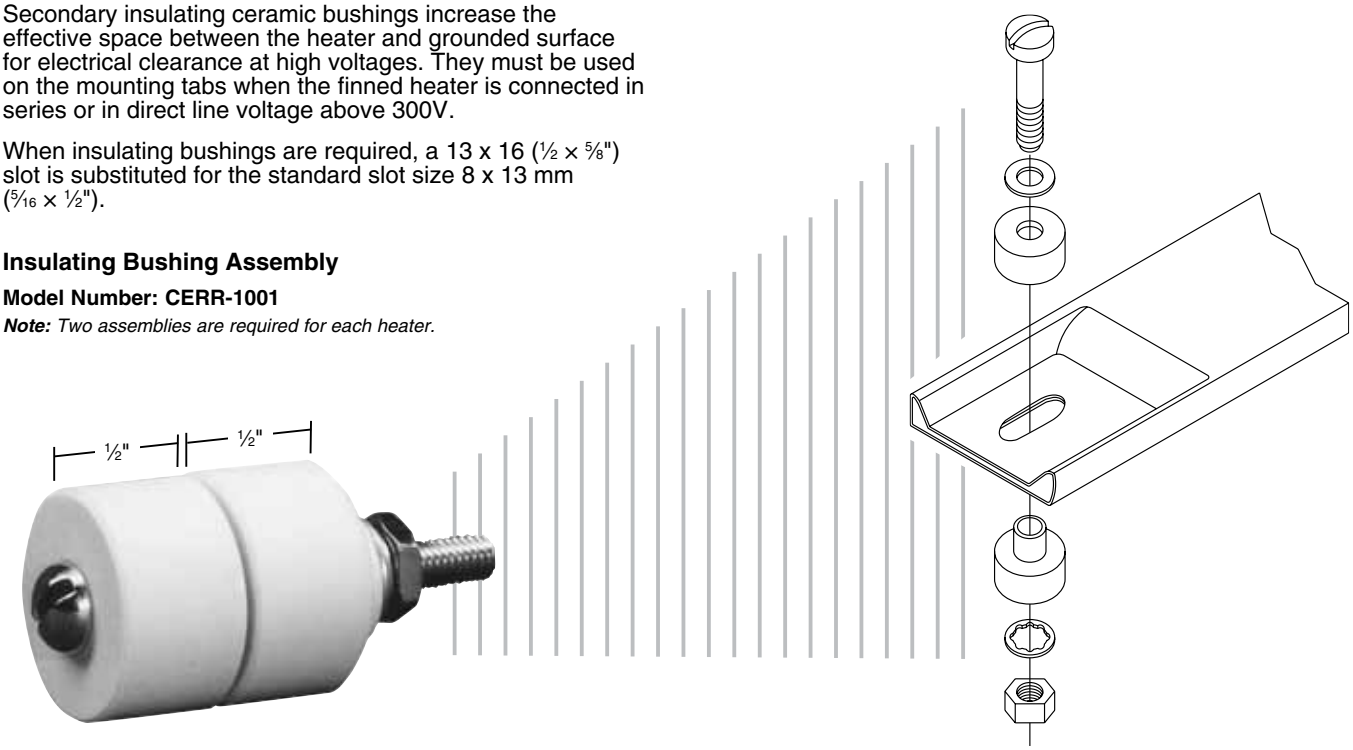
Secondary insulating ceramic bushings increase the effective space between the heater and grounded surface for electrical clearance at high voltages. They must be used on the mounting tabs when the finned heater is connected in series or in direct line voltage above 300V.

When insulating bushings are required, a 13 x 16 (½ × ⅝") slot is substituted for the standard slot size 8 x 13 mm (5⁄16 × ½").

Insulating Bushing Assembly

Model Number: CERR-1001

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



CAUTION: 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.

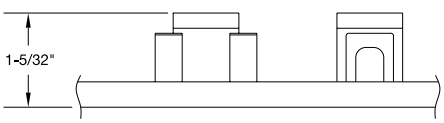
Ceramic Covers for Insulating Screw Terminals

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 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. Mica strip heaters with screw terminals that have a minimum center to center distance of 22 mm (⅞") 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.

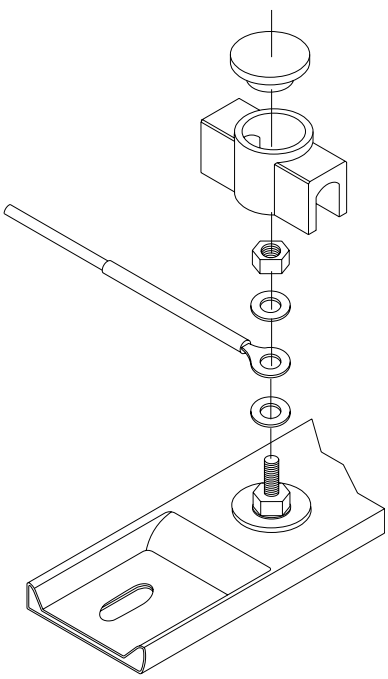


Type C6
Double Port In-Line
Model Number:
CER-101-104

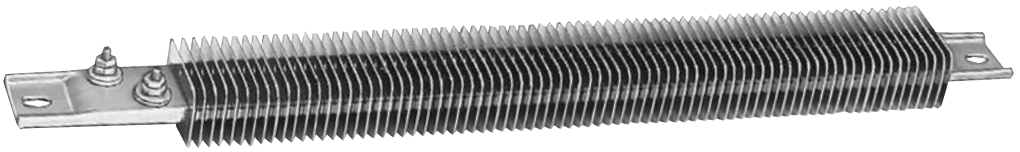
Type C7
Double Port 90°
Model Number:
CER-101-106

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

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



Finned Strip Heaters—T4 Termination



To Order ***Visit omega.com/csf4 for Pricing and Details***

Model No.		Length			Watt Density	
120V	240V	mm	inch	Watts	Watt/cm²	Watt/in²
CSF00252	—	215.9	8½	250	3	18
—	CSF00039	266.7	10½	350	3	17
CSF00129	CSF00130	266.7	10½	500	4	24
CSF00042	—	266.7	10½	600	4	29
CSF00044	CSF00045	266.7	10½	725	5	35
CSF00209	—	266.7	10½	850	6	40
CSF00047	—	304.8	12	500	3	19
CSF00053	CSF00054	304.8	12	900	5	34
CSF00056	CSF00057	355.6	14	750	3	23
CSF00060	CSF00061	355.6	14	1100	5	33
CSF00065	—	387.4	15¼	1000	4	27
CSF00143	CSF00067	387.4	15¼	1250	5	33
CSF00071	—	454.0	17⅞	1000	3	21
CSF00073	—	454.0	17⅞	1300	4	28
CSF00148	CSF00075	454.0	17⅞	1550	5	33
—	CSF00077	495.3	19½	1250	4	24
—	CSF00080	495.3	19½	1700	5	32
CSF00158	CSF00085	533.4	21	1900	5	33
—	CSF00088	603.3	23¾	1450	3	22
—	CSF00090	603.3	23¾	2200	5	33
—	CSF00100	679.5	26¾	2500	5	32
—	CSF00102	774.7	30½	1800	3	20
—	CSF00104	774.7	30½	2800	5	31
—	CSF00180	850.9	33½	3150	5	31
—	CSF00350	911.2	35⅞	2000	3	18
—	CSF00110	911.2	35⅞	3450	5	31
—	CSF00117	1079.5	42½	4150	5	31

Ordering Example: CSF00252, *250 watt, 120 Vac, finned strip heater.*

Custom Engineered/Manufactured Heaters

An electric heater can be very application specific; for sizes and ratings not listed, OMEGA will design and manufacture a finned strip heater to meet your requirements.

Please Specify the Following:

- Type of Application
- Termination Type
- Length
- Secondary Bushings (see page 2)
- Wattage
- Igloo™ Ceramic Terminal Covers
- Voltage

Type C – Terminal Box and Type P – High Temperature Quick Disconnect Plug are available. Visit omega.com