



### HIGH DENSITY STRIP & FINNED STRIP HEATERS

#### Type A, B, & FA

##### Application

Strip Heaters have many applications, including: **surface heating** — on platens, dies, molds, tanks, piping and more; **process air heating** — both strip and finned strip heaters in drying cabinets, ovens, baking ovens and vacuum dehydrating ovens; and for moisture protection for motors, etc.; **resistors** — as dropping resistors for line applications in railroads and load banks; **winterizing** — on hoppers, conveyors, ducts, car heating, thawing; **original equipment** — air conditioning, laboratory equipment, food packaging, ovens, presses and drying equipment.



Type A



Type B



Type FA

##### Heater Construction

STSHD strip heaters are constructed of specially selected high quality materials, beginning with the high-temperature alloy resistance wire uniformly coiled and spaced over the width of the heated length of the strip heater. This controlled coil process and placement assures uniform heat distribution over the entire active surface of the heater.

Special care is taken to secure the stud-type terminal to the high-temperature alloy resistance contact. The coiled resistance wire is embedded in a special refractory material which possesses excellent heat transfer characteristics and superior insulation properties.

The entire heater assembly is encased in either an aluminized steel or stainless steel sheath and is compressed under high pressure. The completed assembly is heated under controlled conditions to bake and semi-vitrify the refractory material for a rigid, vibration resistant, heavy-duty heating unit.

##### Features

STSHD Strip Heaters are available with aluminized steel or stainless steel sheath. Aluminized steel strip heaters are suitable for applications where the maximum sheath temperature does not exceed 1000°F. Stainless steel strip heaters are suitable for applications where the maximum sheath temperature does not exceed 1200°F.

High Density strip heaters have slotted mounting tabs which allow for lineal expansion during the initial heat up period. The flat surface of the strip heater is suitable for clamp-on applications and provides uniform heat distribution for broad surfaces.

##### Finned Strip Heaters

Type FA strip heaters can be finned to improve heat transfer in free or forced air heating applications.

##### Benefits

- Aluminized steel sheath provides both corrosion resistance and an attractive appearance.
- Stainless steel sheath combines additional corrosion protection and excellent appearance.
- Vibration resistant — the compacted semi-vitrified refractory material with the rigid sheathed construction enable strip heaters to withstand severe vibration conditions.
- Rugged construction for long life.
- Application versatility — easy to use in a wide variety of surface and air heating applications.



### HIGH DENSITY STRIP & FINNED STRIP HEATERS

#### Specifications & Limitations

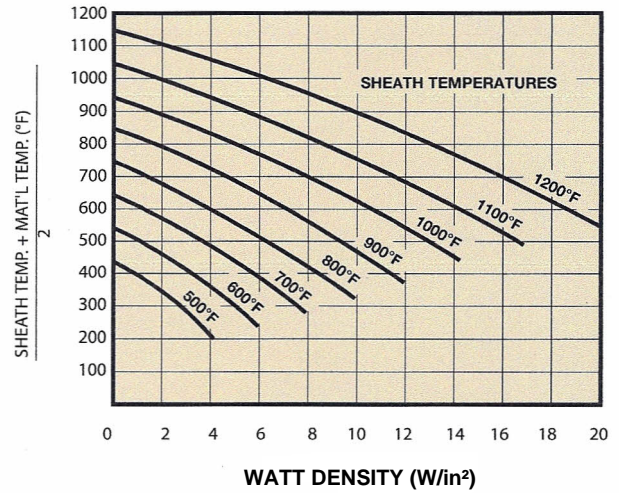
- Maximum Voltage (with Secondary Insulators)..... 600 volts
- Maximum Amps ..... 48 amps
- Overall Length Limit ..... 42 1/4 inches
- Effective Length Limit ..... 39 inches
- Approx. Weight/Inch of Length..... .08 lbs/inch
- Maximum Allowable Sheath Temperature.....  

Aluminized Steel	1000°F
Stainless Steel	1200°F
- Minimum Lengthwise Factory Bending Radius (Terminals on Outside) ..... 4 inches

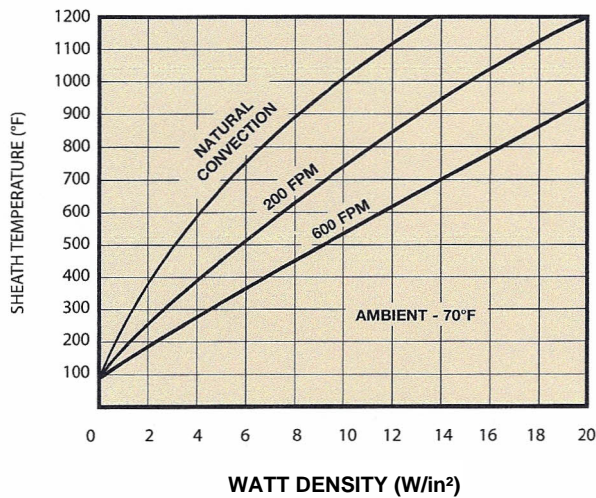
#### Selection

Use the graphs shown on this page to assist in the selection of the strip heater or finned strip heater with the correct watt density so that the sheath temperature will not exceed 1000°F for aluminized steel and 1200°F for stainless steel. Consult factory for additional assistance.

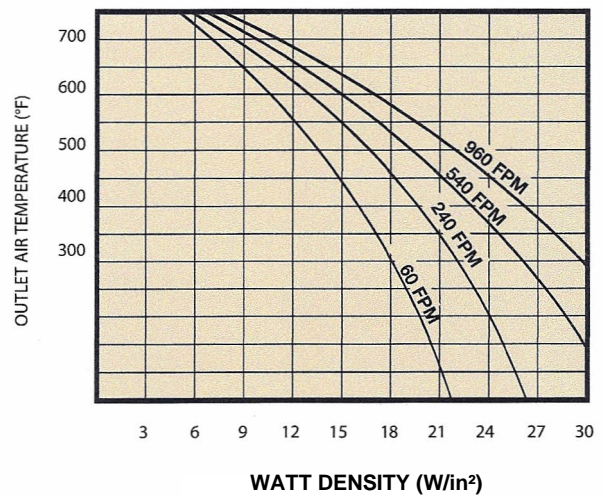
**FIG. 2 - STRIP HEATER SHEATH TEMPERATURE vs. WATT DENSITY FOR CLAMPED-ON APPLICATIONS**



**FIG. 1 - STRIP HEATER SHEATH TEMPERATURE vs. WATT DENSITY FOR AIR HEATING APPLICATIONS**



**FIG. 3 - FINNED STRIP HEATER OUTLET AIR TEMPERATURE vs. WATT DENSITY FOR 700 - 750°F SHEATH OPERATING TEMPERATURE**

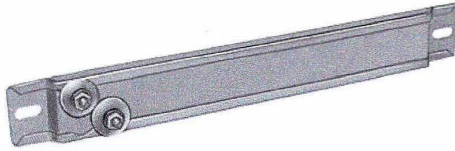




### HIGH DENSITY STRIP HEATERS

#### INSTALLATION

Type A strip heaters have two offset bolt type terminals at one end. Table 1 lists heaters having aluminized steel sheath.



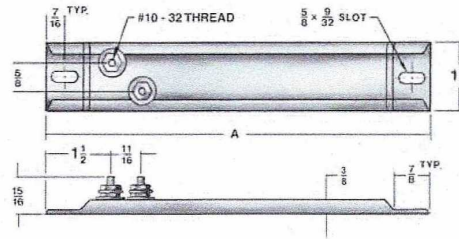
#### ALUMINIZED STEEL SHEATH Type A Terminals

The entire heater assembly is encased in an aluminized steel sheath and is compressed under high pressure. The sheath provides both corrosion resistance and an attractive appearance. Aluminized steel strip heaters are suitable for applications where the maximum sheath temperature does not exceed 1000°F.

If higher temperatures are anticipated, use stainless steel heaters listed in Table 2.

Standard strip heaters listed are rated at 120 and 240 volts. A limited selection of 287 V heaters is also tabled. All strip heaters can be used on voltages lower than listed for reduced wattage, and some designs can also be used on higher voltages — check factory.

Whenever voltage to ground exceeds 300V, secondary insulators must be used.



**TABLE 1 - TYPE A STRIP HEATERS - TERMINALS AT ONE END / ALUMINIZED STEEL SHEATH**

A. DIM.		WATTS	WATTS PER		120V	240V	120V	240V
(in.)	(mm)		(in <sup>2</sup> )	(cm <sup>2</sup> )				
5 1/2	140	125	15.7	2.4	HDA-055-1-125	-----	PT512	—
6	152	150	15.2	2.4	HDA-060-1-150	HDA-060-2-150	PT615	—
7 1/4	184	100	8.2	1.3	HDA-072-1-100	HDA-072-2-100	—	—
7 1/4	184	150	12.3	1.9	HDA-072-1-150	HDA-072-2-150	OT715	OT715
8	203	150	10.0	1.6	HDA-080-1-150	HDA-080-2-150	OT815	OT815
8	203	175	11.7	1.8	HDA-080-1-175	HDA-080-2-175	OT817	OT817
10 1/2	267	250	10.3	1.6	HDA-105-1-250	HDA-105-2-250	OT1025	—
11 3/4	298	250	8.6	1.3	HDA-117-1-250	HDA-117-2-250	OT1225	OT1225
14	356	300	8.0	1.2	HDA-140-1-300	HDA-140-2-300	OT1430	OT1430
15	381	325	7.9	1.2	HDA-150-1-325	HDA-150-2-325	OT1532	OT1532
17 3/4	451	350	6.8	1.1	HDA-177-1-350	HDA-177-2-350	OT1835	OT1835
17 3/4	451	375	7.3	1.1	HDA-177-1-375	HDA-177-2-375	OT1837	OT1837
17 3/4	451	500	9.7	1.5	HDA-177-1-500	HDA-177-2-500	OT1850	OT1850
17 3/4	451	250	4.8	0.7	HDA-177-1-250	HDA-177-2-250	—	—
19 1/2	495	350	6.0	0.9	HDA-195-1-350	HDA-195-2-350	—	OT1935
19 1/2	495	500	8.6	1.3	HDA-195-1-500	HDA-195-2-500	OT1950	OT1950
21	533	500	7.8	1.2	HDA-210-1-500	HDA-210-2-500	OT2150	OT2150
23 1/2	597	500	6.8	1.1	HDA-235-1-500	HDA-235-2-500	OT2450	OT2450
23 1/2	597	750	10.3	1.6	HDA-235-1-750	HDA-235-2-750	OT2475	OT2475
25 1/2	648	500	6.2	1.0	HDA-255-1-500	HDA-255-2-500	OT2550	OT2550
25 1/2	648	750	9.3	1.4	HDA-255-1-750	HDA-255-2-750	OT2575	OT2575
26 3/4	679	700	8.2	1.3	HDA-267-1-700	HDA-267-2-700	—	OT2670
30 1/4	768	750	7.6	1.2	HDA-302-1-750	HDA-302-2-750	OT3075	—
33 1/2	851	750	6.8	1.1	HDA-335-1-750	HDA-335-2-750	—	OT3375
35 3/4	908	1000	8.4	1.3	HDA-357-1-1000	HDA-357-2-1000	OT3610	OT3610
38 1/2	978	800	6.2	1.0	HDA-385-1-800	HDA-385-2-800	—	—
38 1/2	978	1000	7.7	1.2	HDA-385-1-1000	HDA-385-2-1000	OT3810	—
42 1/4	1073	1250	8.7	1.3	HDA-422-1-1250	HDA-422-2-1250	—	—
42 1/4	1073	1500	10.5	1.6	HDA-422-1-1500	HDA-422-2-1500	—	—

**TO ORDER SPECIFY: Quantity, Catalog Number, Wattage, Voltage, and Special Options**



**HIGH DENSITY STRIP HEATERS**

Type B strip heaters have two bolt type terminals at opposite ends. Table 3 lists heaters having aluminized steel sheath.



**ALUMINIZED STEEL SHEATH Type B Terminals**

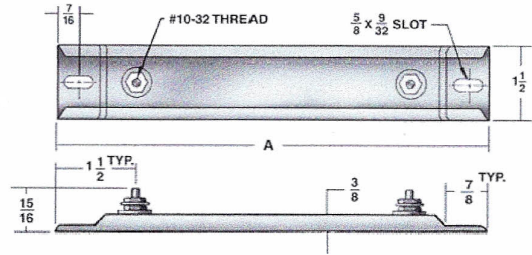
The entire heater assembly is encased in an aluminized steel sheath and is compressed under high pressure. The sheath provides both corrosion resistance and an attractive appearance. Aluminized steel strip heaters are suitable for applications where the maximum sheath temperature does not exceed 1000°F.

If higher temperatures are anticipated use stainless steel heaters listed in Table 4.

**INSTALLATION**

Standard strip heaters listed are rated at 120 and 240 volts. All strip heaters can be used on voltages lower than listed for reduced wattage, and some designs can also be used on higher voltages — check factory.

Whenever voltage to ground exceeds 300V, secondary insulators must be used.



**TABLE 3 - TYPE B STRIP HEATERS - TERMINALS AT EACH END / ALUMINIZED STEEL SHEATH**

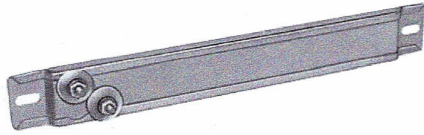
A. DIM. (in.)	(mm)	WATTS	WATTS PER		120V		240V	
			(in <sup>2</sup> )	(cm <sup>2</sup> )				
7 1/4	184	100	8.2	1.3	HDB-072-1-100	HDB-072-2-100	—	—
7 1/4	184	150	12.3	1.9	HDB-072-1-150	HDB-072-2-150	—	—
8	203	150	10.0	1.6	HDB-080-1-150	HDB-080-2-150	S815	S815
9 1/2	241	200	9.7	1.5	HDB-095-1-200	HDB-095-2-200	S920	—
11 3/4	298	250	8.6	1.3	HDB-117-1-250	HDB-117-2-250	S1225	S1225
14	356	300	8.0	1.2	HDB-140-1-300	HDB-140-2-300	S1430	—
15	381	325	7.9	1.2	HDB-150-1-325	HDB-150-2-325	—	—
17 3/4	451	350	6.8	1.1	HDB-177-1-350	HDB-177-2-350	—	—
17 3/4	451	375	7.3	1.1	HDB-177-1-375	HDB-177-2-375	—	—
17 3/4	451	500	9.7	1.5	HDB-177-1-500	HDB-177-2-500	S1850	S1850
19 1/2	495	500	8.6	1.3	HDB-195-1-500	HDB-195-2-500	—	—
21	533	500	7.8	1.2	HDB-210-1-500	HDB-210-2-500	S2050	—
23 1/2	597	250	3.4	0.5	HDB-235-1-250	HDB-235-2-250	—	S2425
23 1/2	597	500	6.8	1.1	HDB-235-1-500	HDB-235-2-500	S2450	S2450
25 1/2	648	750	9.3	1.4	HDB-255-1-750	HDB-255-2-750	—	—
26 3/4	679	700	8.2	1.3	HDB-267-1-700	HDB-267-2-700	—	—
30 1/4	768	750	7.6	1.2	HDB-302-1-750	HDB-302-2-750	—	S3075
33 1/2	851	750	6.8	1.1	HDB-335-1-750	HDB-335-2-750	—	—
35 3/4	908	1000	8.4	1.3	HDB-357-1-1000	HDB-357-2-1000	—	S3610
38 1/2	978	1000	7.7	1.2	HDB-385-1-1000	HDB-385-2-1000	—	—
42 1/4	1073	1250	8.7	1.3	HDB-422-1-1250	HDB-422-2-1250	—	—

**TO ORDER SPECIFY:** Quantity, Catalog Number, Wattage, Voltage, and Special Options



### HIGH DENSITY STRIP HEATERS

Heaters with high temperature stainless steel sheath are listed in Table 2.



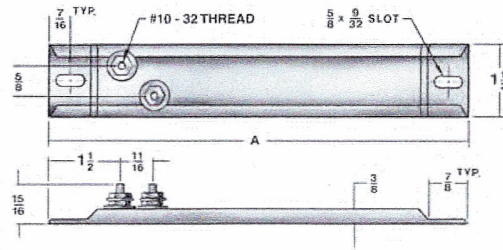
**STAINLESS STEEL SHEATH Type A Terminals**

The entire heater assembly is encased in a stainless steel sheath and is compressed under high pressure. The sheath combines additional corrosion protection and excellent appearance. Stainless steel strip heaters are suitable for applications where the maximum sheath temperature does not exceed 1200°F.

#### INSTALLATION

Standard strip heaters listed are rated at 120 and 240 volts. All strip heaters can be used on voltages lower than listed for reduced wattage, and some designs can also be used on higher voltages—contact us

Whenever voltage to ground exceeds 300V, secondary insulators must be used.



**TABLE 2 - TYPE A STRIP HEATERS - TERMINALS AT ONE END / STAINLESS STEEL SHEATH**

A. DIM.		WATTS	WATTS PER				CHROMALOX	
(in.)	(mm)		(in <sup>2</sup> )	(cm <sup>2</sup> )	120V	240V	120V	240V
5 1/2	140	250	31.4	4.9	HDS-055-1-250	-----	—	—
6	152	300	30.5	4.7	HDS-060-1-300	HDS-060-2-300	—	—
7 1/4	184	100	8.2	1.3	HDS-072-1-100	-----	—	—
7 1/4	184	200	16.4	2.5	HDS-072-1-200	HDS-072-2-200	—	OT702
8	203	250	16.7	2.6	HDS-080-1-250	HDS-080-2-250	OT802	OT802
8	203	400	26.7	4.1	HDS-080-1-400	HDS-080-2-400	OT804	OT804
10 1/2	267	350	14.4	2.2	HDS-105-1-350	HDS-105-2-350	OT1003	OT1003
10 1/2	267	400	16.4	2.5	HDS-105-1-400	HDS-105-2-400	OT1004	OT1004
11 3/4	298	350	12.0	1.9	HDS-117-1-350	HDS-117-2-350	OT1203	OT1203
11 3/4	298	500	17.2	2.7	HDS-117-1-500	HDS-117-2-500	OT1205	OT1205
14	356	500	13.3	2.1	HDS-140-1-500	HDS-140-2-500	OT1405	OT1405
15	381	500	12.1	1.9	HDS-150-1-500	HDS-150-2-500	—	OT1505
17 3/4	451	350	6.8	1.1	HDS-177-1-350	HDS-177-2-350	—	—
17 3/4	451	500	9.7	1.5	HDS-177-1-500	HDS-177-2-500	—	—
17 3/4	451	750	14.5	2.2	HDS-177-1-750	HDS-177-2-750	OT1807	OT1807
17 3/4	451	1000	19.4	3.0	HDS-177-1-1000	HDS-177-2-1000	OT1801	OT1801
19 1/2	495	500	8.6	1.3	HDS-195-1-500	HDS-195-2-500	OT1905	OT1905
19 1/2	495	1000	17.2	2.7	HDS-195-1-1000	HDS-195-2-1000	—	OT1901
21	533	750	11.8	1.8	HDS-210-1-750	HDS-210-2-750	OT2107	OT2107
23 1/2	597	500	6.8	1.1	HDS-235-1-500	HDS-235-2-500	OT2405	OT2405
23 1/2	597	750	10.3	1.6	HDS-235-1-750	HDS-235-2-750	OT2407	OT2407
23 1/2	597	1000	13.7	2.1	HDS-235-1-1000	HDS-235-2-1000	OT2401	OT2401
25 1/2	648	750	9.3	1.4	HDS-255-1-750	HDS-255-2-750	OT2507	OT2507
25 1/2	648	1000	12.4	1.9	HDS-255-1-1000	HDS-255-2-1000	—	OT2501
26 3/4	679	1000	11.7	1.8	HDS-267-1-1000	HDS-267-2-1000	—	OT2601
30 1/4	768	750	7.6	1.2	HDS-302-1-750	HDS-302-2-750	—	OT3007
30 1/4	768	1000	10.2	1.6	-----	HDS-302-2-1000	—	—
33 1/2	851	750	6.8	1.1	HDS-335-1-750	HDS-335-2-750	—	OT3307
35 3/4	908	1000	8.4	1.3	-----	HDS-357-2-1000	—	—
35 3/4	908	1500	12.6	2.0	HDS-357-1-1500	HDS-357-2-1500	—	—
38 1/2	978	1000	7.7	1.2	HDS-385-1-1000	HDS-385-2-1000	OT3801	—
42 1/4	1073	1250	8.7	1.3	HDS-422-1-1250	HDS-422-2-1250	—	—
42 1/4	1073	1500	10.5	1.6	HDS-422-1-1500	HDS-422-2-1500	—	OT4315

**TO ORDER SPECIFY: Quantity, Catalog Number, Wattage, Voltage, and Special Options**



**HIGH DENSITY STRIP HEATERS**

Heaters with high temperature stainless steel sheath are listed in Table 4.



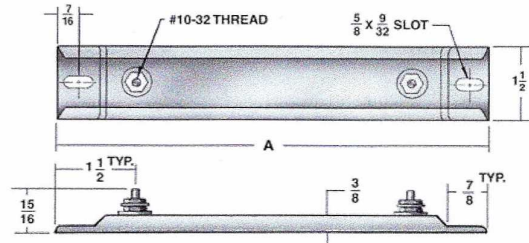
**STAINLESS STEEL SHEATH Type B Terminals**

The entire heater assembly is encased in a stainless steel sheath and is compressed under high pressure. The sheath combines additional corrosion protection and excellent appearance. Stainless steel strip heaters are suitable for applications where the maximum sheath temperature does not exceed 1200°F.

**INSTALLATION**

Standard strip heaters listed are rated at 120 and 240 volts. All strip heaters can be used on voltages lower than listed for reduced wattage, and some designs can also be used on higher voltages — check factory.

Whenever voltage to ground exceeds 300V, secondary insulators must be used.



**TABLE 4 - TYPE B STRIP HEATERS - TERMINALS AT EACH END / STAINLESS STEEL SHEATH**

A. DIM. (in.)	(mm)	WATTS	WATTS PER		CATALOG NUMBER		CHROMALOX PART NUMBER	
			(in <sup>2</sup> )	(cm <sup>2</sup> )	120V	240V	120V	240V
7 1/4	184	100	8.2	1.3	HDS-072-1-100B	HDS-072-2-100B	—	—
7 1/4	184	200	16.4	2.5	HDS-072-1-200B	HDS-072-2-200B	—	—
8	203	250	16.7	2.6	HDS-080-1-250B	HDS-080-2-250B	—	—
9 1/2	241	300	14.5	2.2	HDS-095-1-300B	HDS-095-2-300B	—	—
11 3/4	298	100	3.4	0.5	HDS-117-1-100B	HDS-117-2-100B	—	—
11 3/4	298	250	8.6	1.3	HDS-117-1-250B	HDS-117-2-250B	S1202	S1202
11 3/4	298	350	12.0	1.9	HDS-117-1-350B	HDS-117-2-350B	—	—
11 3/4	298	500	17.2	2.7	HDS-117-1-500B	HDS-117-2-500B	—	S1205
14	356	500	13.3	2.1	HDS-140-1-500B	HDS-140-2-500B	—	—
15	381	500	12.1	1.9	HDS-150-1-500B	HDS-150-2-500B	—	—
17 3/4	451	500	9.7	1.5	HDS-177-1-500B	HDS-177-2-500B	S1805	S1805
17 3/4	451	750	14.5	2.2	HDS-177-1-750B	HDS-177-2-750B	—	S1807
17 3/4	451	1000	19.4	3.0	HDS-177-1-1000B	HDS-177-2-1000B	S1801	S1801
19 1/2	495	500	8.6	1.3	HDS-195-1-500B	HDS-195-2-500B	—	—
19 1/2	495	750	12.9	2.0	HDS-195-1-750B	HDS-195-2-750B	—	S1907
19 1/2	495	1000	17.2	2.7	HDS-195-1-1000B	HDS-195-2-1000B	—	—
21	533	500	7.8	1.2	HDS-210-1-500B	HDS-210-2-500B	S2005	—
23 1/2	597	500	6.8	1.1	HDS-235-1-500B	HDS-235-2-500B	S2405	S2404
23 1/2	597	750	10.3	1.6	HDS-235-1-750B	HDS-235-2-750B	S2407	S2407
23 1/2	597	1000	13.7	2.1	HDS-235-1-1000B	HDS-235-2-1000B	S2401	S2401
23 1/2	597	1500	20.5	3.2	HDS-235-1-1500B	HDS-235-2-1500B	—	—
25 1/2	648	1000	12.4	1.9	HDS-255-1-1000B	HDS-255-2-1000B	—	—
26 3/4	679	750	8.8	1.4	HDS-267-1-750B	HDS-267-2-750B	—	—
30 1/4	768	750	7.6	1.2	HDS-302-1-750B	HDS-302-2-750B	—	—
33 1/2	851	1000	9.0	1.4	HDS-335-1-1000B	HDS-335-2-1000B	—	S3301
35 3/4	908	1000	8.4	1.3	HDS-357-1-1000B	HDS-357-2-1000B	—	S3601
38 1/2	978	1000	7.7	1.2	HDS-385-1-1000B	HDS-385-2-1000B	—	—
42 1/4	1073	1500	10.5	1.6	HDS-422-1-1500B	HDS-422-2-1500B	—	—

**TO ORDER SPECIFY: Quantity, Catalog Number, Wattage, Voltage, and Special Options**



### HIGH DENSITY STRIP AND FINNED STRIP HEATERS

#### SPECIAL WATTAGE, VOLTAGE AND LENGTHS

Check factory if you require a custom designed heater.

#### LENGTHWISE BENDING

Consult factory if lengthwise bending is required.

#### TYPE FA FINNED STRIP HEATERS

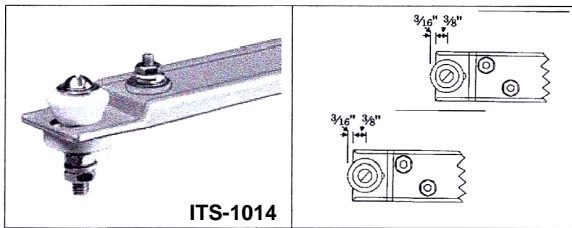
Type **A** strip heaters (with offset terminals) can be supplied with fins on request.

#### SECONDARY INSULATORS

Whenever the voltage to ground on the strip heater exceeds 300V secondary insulators must be used.

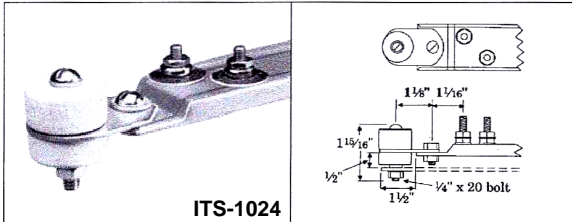
##### CATALOG NUMBER: ITS-1014

This insulator shown is for use where mounting space is limited to 1/2" longer than the strip heater. Strip heater mounting tabs must be factory punched to install insulator.



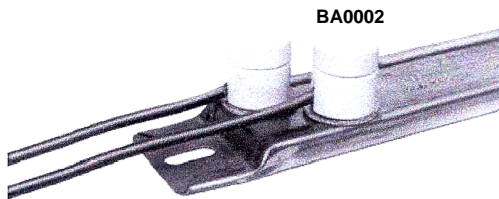
##### CATALOG NUMBER: ITS-1024

This secondary insulator is for use with stock strip heaters. The mounting space must be 3" longer than the strip heater.



#### CERAMIC POST TERMINAL COVERS (BA0002)

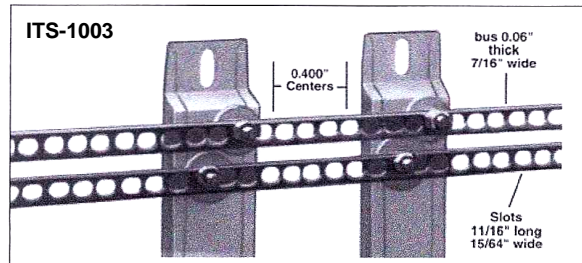
For heaters with standard 10-32 threaded terminals at both ends or with offset terminals at one end, these ceramic post terminal covers may be used with insulated wiring to provide protection against electrical shock.



#### BRASS BUS BAR - CATALOG NUMBER: ITS-1003

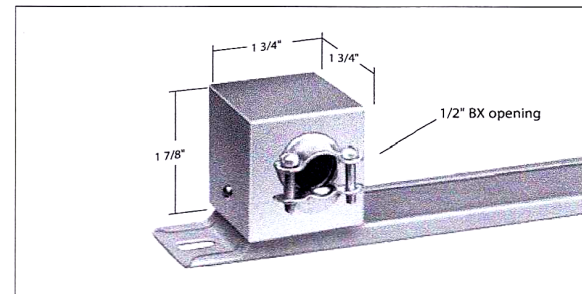
Perforated brass bus bar provides a sturdy conductor for connecting numerous strip heaters in series or parallel. Bus bars may be stacked for higher current-carrying capacities.

AMBIENT TEMPERATURE (°F)	CURRENT CAPACITY (AMPS)	
	1 BUS	2 BUSES
70	36	50
250	32	45
500	26	36
750	20	28



#### TERMINAL BOX - CATALOG NUMBER: ITS-1054

For type **A** strip heaters the box is equipped with BX cable fitting and can be mounted in any of four directions.



#### SURFACE CLAMP - CATALOG NUMBER: ITS-1044

This heavy-gauge, nickel-plated steel clamp is used to mount strip heaters securely to broad surfaces such as tank walls, platens, dies. Threaded 3/8" diameter studs must be first welded, brazed or threaded into the work surfaces.

