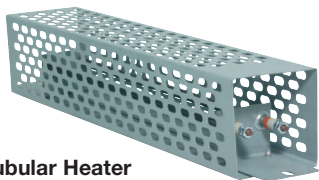


# Tubular Industrial Process

## Enclosure Heaters



**Tubular Heater**  
See Page 11-115

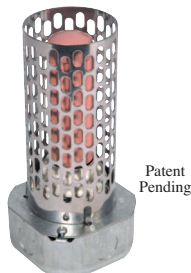


**Silicone Rubber Heater**  
See Page 9-18



**Finned Strip Heater**  
See Page 8-15

## Cabinet Enclosure Heaters



**Ceramic Heater**  
See Page 7-41

Patent Pending

TD enclosure heaters are the answer to all your enclosure heater needs. Our heaters are designed to help electric, electronic, pneumatic, hydraulic and mechanical equipment perform at top capacity by protecting them against low temperatures, condensation and corrosion. TD offers many different styles of heaters that can be used in enclosure heating applications. Our most popular styles are displayed on the next few pages.

### Typical Applications

- *Traffic Signal Control Boxes*
- *Control Panels*
- *Automatic Teller Machines*
- *Control Valve Housings*
- *Outdoor Electrical Power Enclosures*
- *Switch Gear*
- *Clothing Lockers*

### Determining the Minimum Wattage for Your Application

1. Determine the lowest temperature to which the enclosure is expected to be exposed.
2. Determine the operating temperature to which you want the enclosure heated.
3. Subtract the ambient temperature from the enclosure temperature to get the temperature change required.
4. Calculate the surface area of the enclosure. For a rectangular enclosure use the formula:  

$$2 [(Length \times Width) + (Length \times Height) + (Width \times Height)]$$
5. Select the correct table below depending upon whether your box is insulated or non-insulated. Read from the table the wattage required depending upon your calculated temperature change and surface area.
6. Add an additional 50% of the determined wattage if the enclosure is to be located in windy conditions.

### Selecting the Right Heater for Your Application

1. Determine the wattage of heater(s) that you need. See the instructions on this page to determine your wattage requirements.
2. Determine the type of heater that you need. Depending upon conditions, one heater type might be better than others. Items to take into consideration are space constraints inside the enclosure and wattages required.
3. Determine the number of heaters you need. You can combine multiple heaters to achieve your wattage requirements.
4. Determine how you will control the heaters. Will you use built-in thermostats to monitor the temperature? Or will you use a single temperature control to monitor and control the heaters? Factory manufactures a wide range of temperature control devices and when multiple heaters are required, TD can supply you with the temperature controls that will meet your needs.

**Insulated Enclosure Wattage Selection Table**

Δ Temperature °F (°C)	TOTAL SURFACE AREA ft <sup>2</sup> (m <sup>2</sup> )													
	2 (0.19)	3 (0.28)	4 (0.37)	5 (0.47)	6 (0.56)	7.5 (0.70)	9 (0.84)	10 (0.93)	15 (1.40)	20 (1.86)	25 (2.33)	30 (2.79)	40 (3.72)	50 (4.65)
20 (11)	10	10	15	20	20	25	30	35	50	65	80	100	130	160
40 (22)	15	20	30	35	40	50	60	65	100	130	160	195	260	320
60 (33)	20	30	45	50	60	75	90	100	145	195	240	290	385	480
80 (44)	30	40	55	65	80	100	115	130	195	260	320	320	515	640
100 (56)	35	50	65	80	100	125	145	160	240	320	400	400	640	800
120 (67)	40	60	80	100	115	150	175	195	290	385	480	480	770	960
140 (78)	45	70	90	115	135	175	205	225	340	450	560	560	900	1120

**Uninsulated Enclosure Wattage Selection Table**

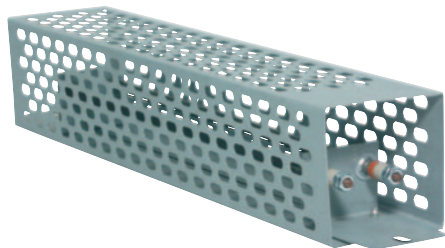
Δ Temperature °F (°C)	TOTAL SURFACE AREA ft <sup>2</sup> (m <sup>2</sup> )													
	2 (0.19)	3 (0.28)	4 (0.37)	5 (0.47)	6 (0.56)	7.5 (0.70)	9 (0.84)	10 (0.93)	15 (1.40)	20 (1.86)	25 (2.33)	30 (2.79)	40 (3.72)	50 (4.65)
20 (11)	30	40	55	70	80	100	120	135	205	270	335	405	540	670
40 (22)	55	80	110	135	160	200	245	270	405	540	670	805	1075	1340
60 (33)	90	120	160	205	245	300	365	405	605	805	1005	1210	1610	2010
80 (44)	110	160	215	270	325	400	485	540	805	1075	1340	1610	2145	2680
100 (56)	135	200	270	335	405	500	605	670	1005	1340	1675	2010	2680	3350
120 (67)	165	240	320	405	485	600	725	805	1210	1610	2010	2415	3220	4020
140 (78)	190	280	375	470	565	700	845	940	1410	1880	2345	2815	3775	4690

# Tubular Industrial Process

## Enclosure Heaters

### EHT Tubular Enclosure Heaters — Type 1 Box Style

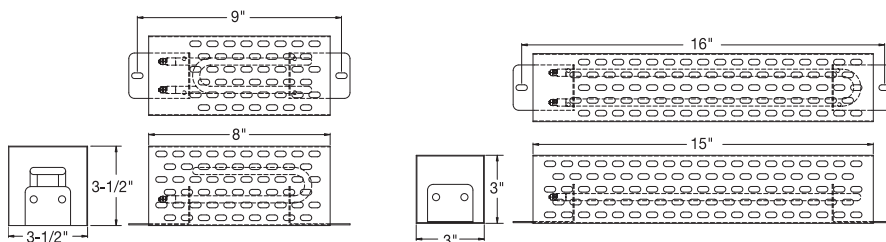
#### Stock Heaters



Wattage	3-1/2" Square by 8" Long Enclosure		3" Square by 15" Long Enclosure	
	120V	240V	120V	240V
100	EHT00006	—	EHT00017	—
250	EHT00008	EHT00009	EHT00019	EHT00020
350	EHT00010	EHT00011	EHT00021	EHT00022
375	EHT00012	EHT00013	EHT00023	EHT00024
400	EHT00054	EHT00055	EHT00056	EHT00057

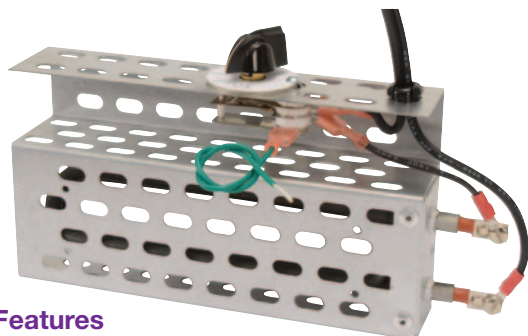
#### Design Features

- \* Incoloy tubular heating element
- \* Up to 15 w/in<sup>2</sup>
- \* 10-32 terminals standard



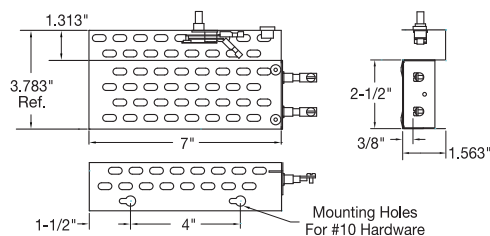
### EHT Tubular Enclosure Heaters — Type 2 Open Style

#### Stock Heaters



Wattage	Enclosure Heater			
	No Thermostat		With 30-150°F Thermostat	
	120V	240V	120V	240
100	EHT00029	—	EHT00030	—
150	EHT00031	—	EHT00032	—
250	EHT00033	EHT00046	EHT00034	EHT00047
350	EHT00035	EHT00048	EHT00036	EHT00049
400	EHT00052	EHT00050	EHT00053	EHT00051

Thermostat models include 36" HPN line cord



#### Design Features

- \* Incoloy<sup>®</sup> tubular heating element
- \* Available with 30-150°F thermostat prewired with 36" HPN line cord



**⚠ WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### EHA — Remote Thermostats for Enclosure Heaters

#### Stock EHA Remote Thermostats




See Page 9-18 for details

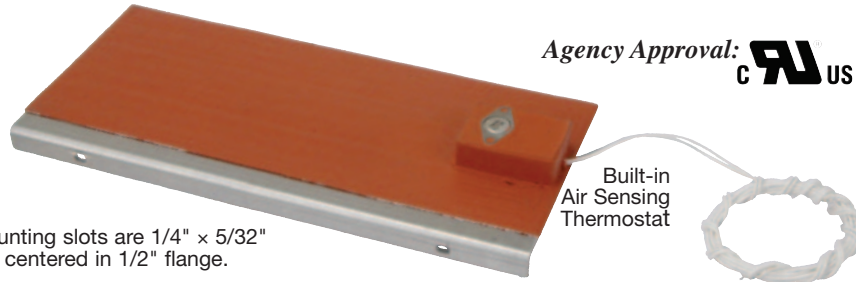
Opens °F	Closes °F	Part Number
60±5	40±7	EHA00001
140±5	110±10	EHA00002
180±5	150±10	EHA00003

# Flexible Heaters

## Enclosure Heaters

### EHR — Silicone Rubber Enclosure Heater

Agency Approval: 



Mounting slots are 1/4" x 5/32" centered in 1/2" flange.

Built-in Air Sensing Thermostat

### Standard (Non-Stock) Silicone Rubber Enclosure Heaters

Width	Length	Mounting Center	Watts	Volts	Lead Length	Thermostat (°F)		Part Number
						Opens	Closes	
2½	5	3	25	120	48	—	—	EHR00001
2½	5	3	25	120	48	60	40	EHR00002
2½	5	3	35	120	48	—	—	EHR00003
2½	5	3	50	24	48	—	—	EHR00039
2½	5	3	50	120	48	—	—	EHR00004
2½	5	3	50	120	48	60	40	EHR00005
2½	6	4	60	120	48	—	—	EHR00006
2½	6	4	60	120	48	60	40	EHR00007
2½	6	4	60	120	48	140	110	EHR00008
2½	6	4	60	120	48	180	150	EHR00009
2½	10	7	70	120	48	—	—	EHR00010
2½	10	7	100	12	48	—	—	EHR00049
2½	10	7	100	120	48	—	—	EHR00011
2½	10	7	100	120	48	60	40	EHR00012
2½	10	7	100	230	48	60	40	EHR00028
2½	12	9	80	240	48	60	40	EHR00032
2½	12	9	120	120	48	—	—	EHR00013
2½	12	9	120	120	48	60	40	EHR00014
2½	12	9	120	120	48	140	110	EHR00015
2½	12	9	120	120	48	180	150	EHR00016
2½	12	9	120	240	48	60	40	EHR00034
4½	10	7	140	120	48	—	—	EHR00017
4½	10	7	250	120	48	—	—	EHR00018
4½	10	7	250	120	48	60	40	EHR00019
4½	10	7	250	240	48	140	110	EHR00044

### Design Features

- \* Available with or without an Integrated Thermostat (See EHA below for Remote Thermostats)
- \* Custom Design and Alternate Thermostat Settings Available
- \* Heater Vulcanized to an Aluminum Mounting Plate for Easy Installation
- \* 120V Standard; Custom Voltages Available upon Request
- \* 48" Teflon® Leads Standard
- \* Dimensions Listed are for Heater and Bracket; Actual Heater Width is 1/2" Less
- \* Safe to Operate, No Exposed Electrical Connections

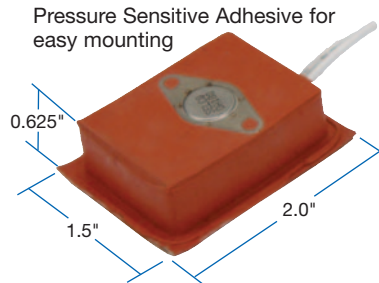
**EHR — Silicone Rubber Heaters** are designed for easy installation and safe operation. These rectangular shaped wire-wound Silicone Rubber Heaters are vulcanized to an aluminum mounting plate with mounting holes. They provide superior protection for enclosures of all types against condensation, humidity and freezing.

It is recommended that the enclosure heater be used with a thermostat either built in or mounted remotely to limit the maximum temperature reached and conserve energy. The suggested mounting method is at the bottom of the enclosure, mounted vertically. If a remote mounted thermostat is preferred, mount the heater on the bottom of the enclosure and the thermostat in the middle of the enclosure.

### EHA — Remote Thermostats for Enclosure Heaters

#### Design Features

- \* Standard 16ga Teflon® lead length: 48"
- \* Can easily be located anywhere in the enclosure using the pressure sensitive adhesive.
- \* Any standard thermostat can be used (see page 13-82 for available ranges)
- \* Silicone rubber base and enclosure
- \* Ratings: 10A/250 Vac, 15A/120 Vac



EHA00005 D-ring and strap mounting thermostat. Can be applied to sense the air around an object or an object directly.



### Stock EHA Remote Thermostats

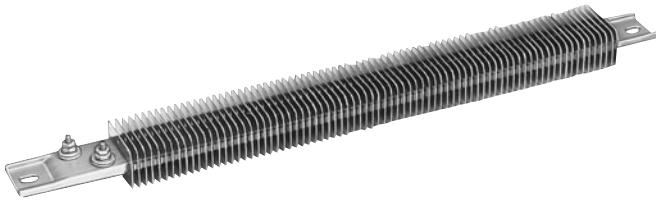
Opens °F	Closes °F	Part Number	
		PSA	D-ring & Strap
60±5	40±7	EHA00001	EHA00005
140±5	110±10	EHA00002	—
180±5	150±10	EHA00003	—

**⚠ WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

# Strip Heaters



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



Stock Items Are Shown In **RED**

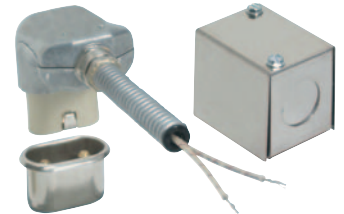
Length		Wattage	Watt Density		Part Number	
in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
8½	215.9	250	18	3	<b>CSF00252</b>	
10½	266.7	350	17	3		CSF00039
10½	266.7	500	24	4	<b>CSF00129</b>	<b>CSF00130</b>
10½	266.7	600	33	5	CSF00042	
10½	266.7	725	40	6	<b>CSF00044</b>	<b>CSF00045</b>
10½	266.7	850	47	7	<b>CSF00209</b>	
12	304.8	500	19	3	CSF00047	
12	304.8	900	34	5	CSF00053	<b>CSF00054</b>
14	355.6	750	23	3	<b>CSF00056</b>	CSF00057
14	355.6	1100	36	6	<b>CSF00060</b>	<b>CSF00061</b>
15¼	387.4	1000	27	4	CSF00065	
15¼	387.4	1250	33	5	<b>CSF00143</b>	<b>CSF00067</b>
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		Wattage	Watt Density		Part Number	
in	mm		W/in <sup>2</sup>	W/cm <sup>2</sup>	120V	240V
19½	495.3	1700	32	5	—	<b>CSF00080</b>
21	533.4	1900	33	5	CSF00158	<b>CSF00085</b>
23¾	603.3	1000	15	2	—	<b>CSF00528</b>
23¾	603.3	1450	22	3	—	CSF00088
23¾	603.3	2200	33	5	—	<b>CSF00090</b>
25½	647.7	2400	33	5	—	<b>CSF00094</b>
26¾	679.5	2500	32	5	—	<b>CSF00100</b>
30½	774.7	1800	20	3	—	CSF00102
30½	774.7	2800	28	4	—	CSF00104
33½	850.9	3150	31	5	—	<b>CSF00180</b>
35¾	911.2	2000	18	3	—	<b>CSF00350</b>
35¾	911.2	3450	31	5	—	<b>CSF00110</b>
42½	1079.5	4150	31	5	—	<b>CSF00117</b>

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



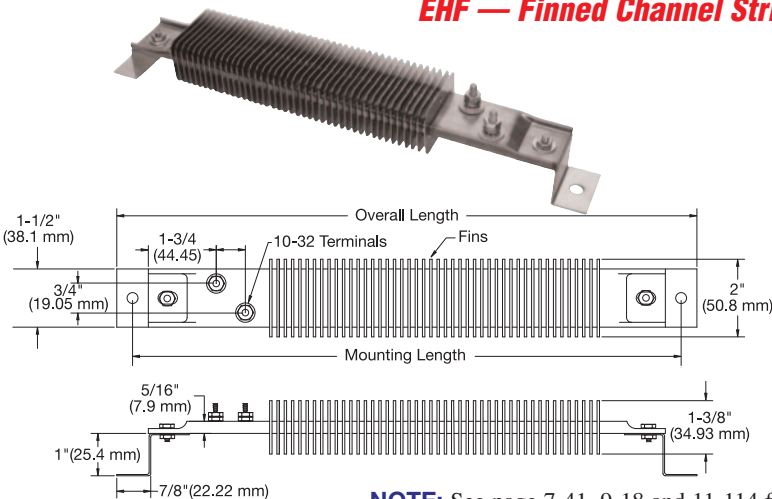
## EHF — Finned Channel Strip Enclosure Heaters

### 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

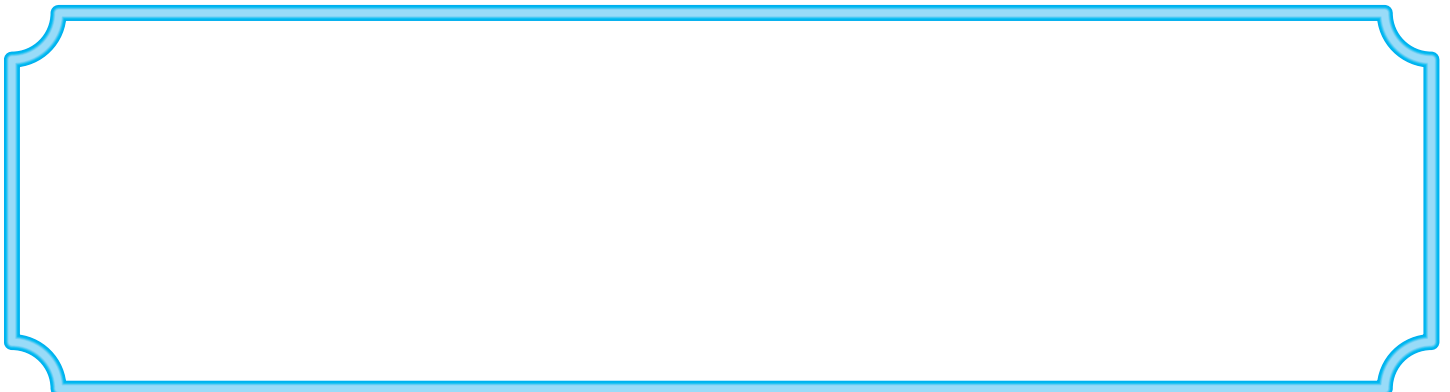
## Stock and Standard (Non-Stock) Series EHF Heaters

Stock Items Are Shown In **RED**



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

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

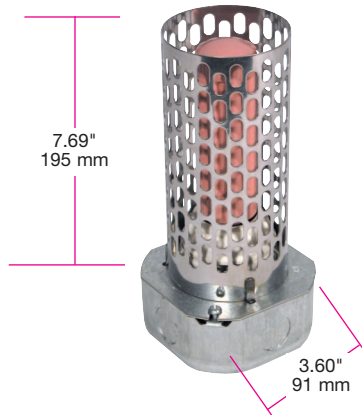




# Radiant Process Heaters

## Series EHC Enclosure Heaters

### EHC Ceramic E-Mitter Enclosure Heaters



#### Typical Applications

- ➔ Traffic Signal Control Boxes
- ➔ Automatic Teller Machines (ATMs)
- ➔ Outdoor Electrical Power Enclosures
- ➔ Control Panels
- ➔ Control Valve Housings
- ➔ Switch Gear
- ➔ Clothing Lockers

TD enclosure heaters are the answer to all your enclosure heater needs. Our heaters are designed to help electric, electronic, pneumatic, hydraulic and mechanical equipment perform at top capacity by protecting them against low temperatures, condensation and corrosion. TD offers many different styles of heaters that can be used in enclosure heating applications. Our most popular styles are displayed below.

#### EHC Enclosure Heaters with NEMA 1 Housing

Watts	Volts	Color	Part Number	Replacement Heater Bulb
50	120	Rose to Grey	EHC10100	CRT10100
75	120	Rose to Grey	EHC10101	CRT10101
75	240	Rose to Grey	EHC10106	CRT10106
100	120	Rose to Grey	EHC10102	CRT10102
100	240	Rose to Grey	EHC10107	CRT10107
150	120	Rose to Grey	EHC10103	CRT10103
150	240	Rose to Grey	EHC10108	CRT10108
200	120	Rose to Grey	EHC10104	CRT10104
200	240	Rose to Grey	EHC10109	CRT10109
250	120	Rose to Grey	EHC10105	CRT10105
250	240	Rose to Grey	EHC10110	CRT10110

See page 11-114 for help in sizing and determining the best enclosure heater for your application.

### EHA — Remote Thermostats for Enclosure Heaters

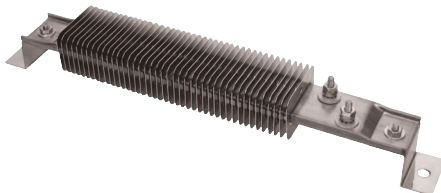


See Page 9-18 for details

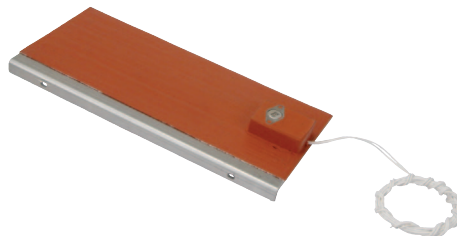
#### Stock EHA Remote Thermostats

Opens °F	Closes °F	Part Number
60±5	40±7	EHA00001
140±5	110±10	EHA00002
180±5	150±10	EHA00003

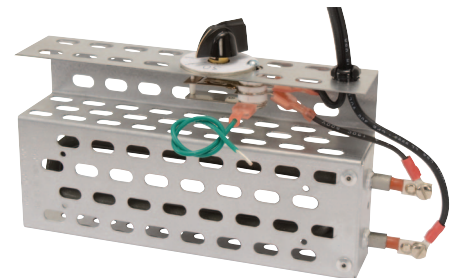
### Other Types of Enclosure Heaters



Finned Strip Heater  
See Page 8-14



Silicone Rubber Heater  
See Page 9-18



Tubular Heater  
See Page 11-115