DH

UL Listed Fintubular Air Duct Heater

- **Up to 533 kW**
- **Up to 35 kW/Ft² Power Densities**
- **Up to 600 Volt**
- **6 x 8" to 40 x 120" Duct Sizes**

Type DH duct heaters are pre-engineered, factory assembled units consisting of a standard frame section, metal sheath heating elements and a prewired terminal box. They are available in a wide range of standard frame sizes, with various heating capacities and heating stages operating on AC voltage ratings of 120 to 600V.

The standard duct heater is designed to be inserted in a rectangular opening cut in the side of a horizontal or vertical duct. For larger ducts or where it may be more desirable to attach the duct directly to the heater, a frame may be added to the heater.

Applications

- Primary or Secondary Heating
- Reheating or Preheating
- Comfort Heating in Industrial Buildings, Schools, Hospitals, Department Stores, Warehouses and Office Complexes
- Comfort Heating on Shipboard

Construction

Heavy Gauge Frame of aluminized, painted or stainless steel.

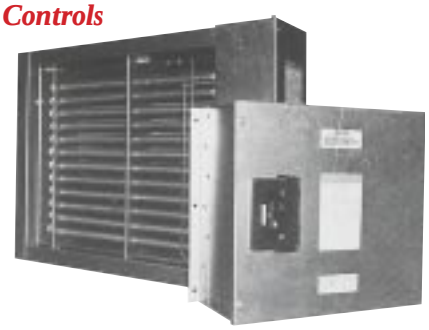
Terminal Box E1 General Purpose or Drip Proof.

Fintube® Elements — Famous, fast heat responding, individually replaceable Fintubular elements provide a long life dependable heat source. Heavy mass of elements reduces cycle time and thermal stress. Aluminum painted, MONEL® or Stainless Steel sheath and fin materials are available.

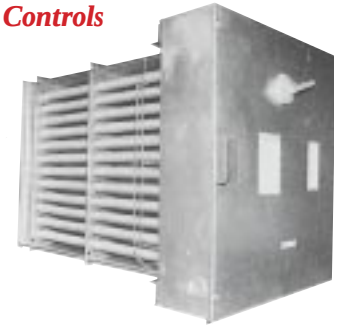
Integral or Remote Control panel of identical height as duct to ease field installation.

DHRI — Insert Type Remote Controls

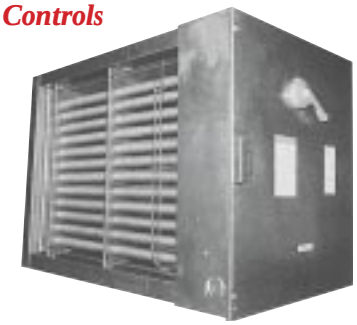
DHRF — Flange Type Remote Controls



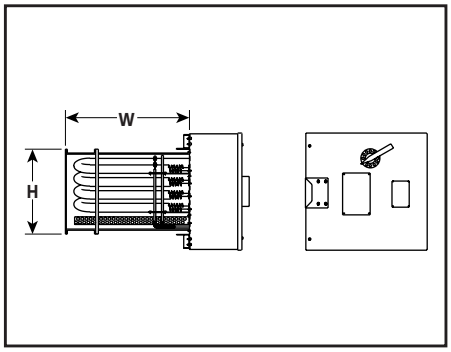
DHII — Insert Type Integral Controls



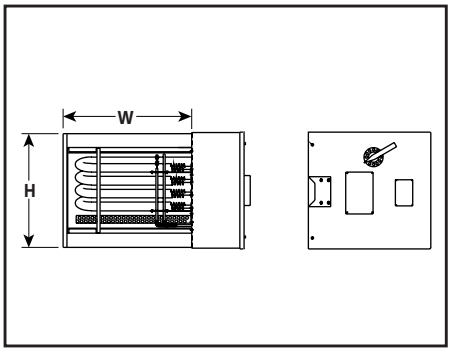
DHIF — Flange Type Integral Controls



Insert Type — Dimensions (Inches)



Flange Type — Dimensions (Inches)



Features

Insert Heaters — Type DHRI and DHII have frame dimensions sized so that the entire frame slides through a rectangular opening in the side of the duct.

Flange Heaters — Type DHRF and DHIF have face dimensions that exactly match inside duct dimensions. Heater flanges attach to matching external duct flanges in the field.

Pressure Drop — Lower than tubular duct heaters since fewer, higher watt density elements are required.

For Horizontal or Vertical upflow applications.

Uniform Heat Transfer to airstream since sheath and fins eliminate localized overheating on elements.

Listed for zero clearance to combustible materials.

Overtemperature Protection provided with both manual and automatic resets.

Factory Prewired 48 Amp maximum circuits to meet NEC requirements.

Control Options — The fan circuit must be interlocked with the control circuit of the heater. The options are air flow switch, fan interlock relay or fan interlock relay with fan delay. Optional disconnecting means include the choice of non-fused disconnect, fused disconnect or terminal block for remote disconnect by others.

Easy Wiring access through conduit opening in terminal box.

DH

UL Listed Fintubular Air Duct Heater *(cont'd.)*

Ordering Information

To Order — Complete the Model Number using the Matrix provided.

Model — UL Listed Fintube® Air Duct Heaters

DHRI	Duct heater, remote controls, insert type	**DHII**	Duct heater, integral controls, insert type
DHRF	Duct heater, remote controls, flange type	**DHIF**	Duct heater, integral controls, flange type

Terminal Box Construction & Terminal Box and Frame Material

GPA	General purpose terminal enclosure and all aluminized steel construction	**DPA**	Drip proof terminal enclosure and aluminized steel construction
GPP	General purpose terminal enclosure and all painted steel construction	**DPP**	Drip proof terminal enclosure and painted steel construction
GPS	General purpose terminal enclosure and all Stainless Steel construction	**DPS**	Drip proof terminal enclosure and Stainless Steel construction

Height of Duct (In.)

Code	
00H	06 - 40

Width of Duct (In.)

Code	
000W	08 - 120

Depth of Heater Frame (In.)

Code	
00.00	06.5 min. - 36.00 max.

Heater Voltage

Code	
000V	Up to 600V

Number of Circuits

Code	
0	

Phase

Code	
1P	Single
3P	Three

kW/Ft² (max.)

Code	
000.0kW	35 kW/Ft² max.

Mounting Position of Heater

1MP	Mounting position 1	**4MP**	Mounting position 4
2MP	Mounting position 2	**5MP**	Mounting position 5
3MP	Mounting position 3	**6MP**	Mounting position 6

Sheath, Fin and Finish of Heating Element

PS	Painted steel fin and sheath (Std.)	**MO**	MONEL® fin and sheath
SS	Stainless Steel fin and sheath		

Method of Attaching Heating Element to Heater Frame

Code	
WA	Mounting washer staked to element sheath (Std.)
GW	Mounting washer staked to element sheath with gasket
BF	Brass fitting with gasket
SS	Stainless Steel fitting with gasket

Heating Element Termination

Code	
M	Threaded terminals with mica insulation
R	Threaded terminals with ceramic insulation (480V max.)
H	Hermetic seals (480V max.)

Fan Interlock Method

Code	
AS	Air flow switch
FI	Fan interlock relay
FD	Fan interlock relay with fan delay

Control Circuit Power Supply

Code	
T	Control circuit by integral transformer (24 or 120V sec. only)
R	Remote control circuit by customer (24, 120, 208, 240 or 277V)

Control Circuit Voltage

Code	
000	24, 120, 208, 240 or 277V

Disconnecting Means

Code	
ND	Nonfused disconnect switch (200A max.)
FD	Fused disconnect switch (48A max.)
TB	Terminal block (200A max.), disconnect switch by others

DHRI - GPA -	**10H X**	**020W X 06.50D -**	**480V03P**	**010.0kW - 1MP -**	**PSWAM -**		**AST120ND**	Typical Model Number

DH

UL Listed Fintubular Air Duct Heater *(cont'd.)*

Fan Interlock Selection — UL Standard 1096 requires an acceptable means of interlocking the heater with the fan as an integral part of the heater, factory installed. One of the following must be used.

Differential Switch — The pressure switch method of proving air flow is the most reliable. Minimum requirements are met when the pressure in the sensing tube, combined velocity and static, is greater than the switch setting.

Fan Interlock Relay — A normally open relay (contactor) is wired in series with the duct heater control circuit. The coil of this relay is wired to a terminal block for field connection to the fan motor starter circuit.

Fan Interlock Relay with Fan Delay Control — Delays the fan or blower motor until after the Fintubes have reached a selected temperature, eliminating the initial delivery of unwarmed air.

Standard No. Fintube® Elements Supplied

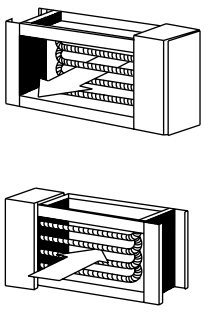
Duct Height (In.)	Duct Depth (In.)		
	6.5"	12"	17-1/2"
6	2	3 - 4	5 - 6
8	3	4 - 6	7 - 9
10	3 - 4	5 - 8	9 - 12
12	6	7 - 12	13 - 18
14	6 - 7	8 - 14	15 - 21
16	6 - 8	9 - 16	17 - 24
18	9	10 - 18	19 - 27
20	9 - 10	11 - 20	21 - 30
22	9 - 11	12 - 22	23 - 33
24	12	13 - 24	25 - 36
26	12 - 14	15 - 28	29 - 42
28	15	16 - 30	31 - 45
30	15 - 16	17 - 32	33 - 48
32	15 - 17	18 - 34	35 - 51
34	15 - 17	18 - 34	35 - 51
36	18	19 - 36	37 - 54
38	18 - 19	20 - 38	39 - 57
40	18 - 20	21 - 40	41 - 60

Heating Control Stages — In order to achieve modulating control of the heater, it is possible to specify multiple heating steps or stages. Normally, the number of stages available depends upon the number of Fintubes per heater. The number of Fintubes per heater is determined by the H dimension of the heater.

Control Circuit Supply — Optional. Built-in factory wired control transformers are frequently required if a field source of control voltage is unavailable for meeting control circuit requirements.

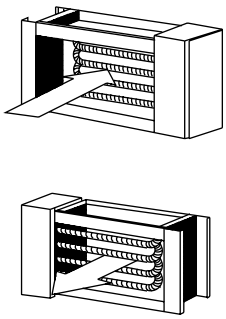
A complete selection of transformers with primary voltages of 120, 208, 240, 277, 380, 480 and 600V are available. Secondary voltages of 24 and 120 Vac are available. Unless specified, the transformer primary voltage will be the same as the heater line voltage.

Power Disconnect Switch — Optional. To meet the UL and NEC requirement for a disconnect switch at or in sight of the heater, its controls and fuses; a built-in disconnect is available for power loads greater than 200 Amps. When this option is not selected, power terminal blocks will be provided (200 Amps max per block).



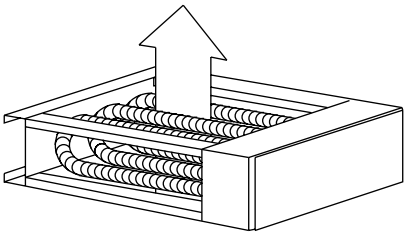
Horizontal Duct — Side terminal box entry for type DHRI & DHRF heaters. Air flow as shown. Install with this arrow up.

Mounting Position 1



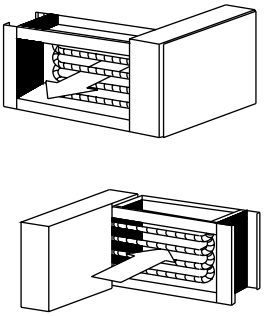
Horizontal Duct — Side terminal box entry for type DHRI & DHRF heaters. Air flow as shown. Install with this arrow up.

Mounting Position 2



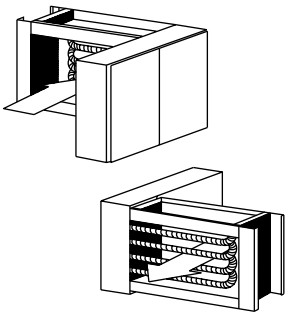
Vertical Duct — Side terminal box entry for type DHRI & DHRF heaters. Air flow as shown. Install with this arrow up.

Mounting Position 3



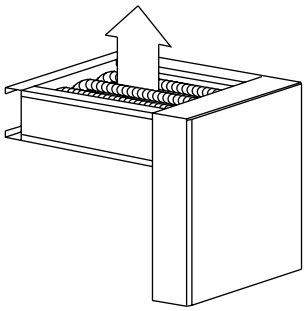
Horizontal Duct — Side terminal box entry for type DHII & DHIF heaters. Air flow as shown. Install with this arrow up.

Mounting Position 4



Horizontal Duct — Side terminal box entry for type DHII & DHIF heaters. Air flow as shown. Install with this arrow up.

Mounting Position 5



Vertical Duct — Side terminal box entry for type DHII & DHIF heaters. Air flow as shown. Install with this arrow up.

Mounting Position 6