

HIGH TEMPERATURE AIR DUCT HEATERS

ADH and ADHT Series

- ✓ Series ADH Outlet Air Temperatures to 426°C (800°F)
- ✓ Series ADHT Outlet Air Temperatures to 648°C (1200°F)
- ✓ 5 to 270 kW
- ✓ 480V, 3 Phase
- ✓ 0.475" Dia. Tubular Elements



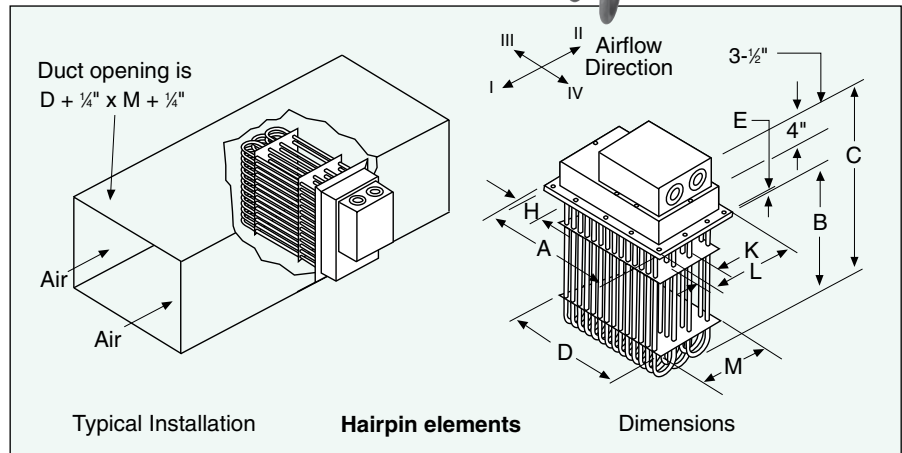
ADH-005/480V/3P shown smaller than actual size.

APPLICATIONS

Heating air for various drying/curing operations up to 648°C (1200°F) air temperature, heat treating, re-heating or dehumidification, and other similar air heating applications.

FEATURES

Rugged construction. Sturdy 0.475" diameter tubular elements mounted to a heavy ¼ or ⅝" thick steel flange. Terminal housing made of 18 gage aluminized steel. Element support plates of 16 gage aluminized steel are held in place by stainless steel support rods. High temperature units have the



additional feature of stainless steel material for the 3" insulation housing and element support plate—all of which provides superior rigidity, strength and reliability.

Long life metal sheath tubular elements—Corrosion/oxidation resistant sheath. High grade Incoloy sheath material for excellent corrosion/oxidation resistance at high operating temperatures.

To Order

ADH-Low-Medium Temperature (30 W/in²)

kW	Dimensions - Inches									No. Elem.	No. Circ.	Model No.	Wt. lbs
	A	B	C	D	E	H	K	L	M				
5	5 ⁵ / ₈	20 ¹ / ₈	28 ¹ / ₈	4	¼	2½	3½	11 ¹ / ₈	9½	3	1	ADH-005/480V/3P	8
10	7 ⁵ / ₈	20 ³ / ₈	28 ³ / ₈	6	¼	3½	3½	11 ³ / ₈	9½	6	1	ADH-010/480V/3P	15
15	9 ⁵ / ₈	20 ⁵ / ₈	28 ⁵ / ₈	8	¼	3	3½	11 ⁵ / ₈	9½	9	1	ADH-015/480V/3P	25
20	11 ⁵ / ₈	20 ⁷ / ₈	28 ⁷ / ₈	10	¼	2¾	3½	11 ⁷ / ₈	9½	12	1	ADH-020/480V/3P	35
25	13 ⁵ / ₈	20 ⁹ / ₈	28 ⁹ / ₈	12	¼	3¼	3½	11 ⁹ / ₈	9½	15	1	ADH-025/480V/3P	40
30	15 ⁵ / ₈	20 ¹¹ / ₈	28 ¹¹ / ₈	14	⅜	3¾	3½	11 ¹¹ / ₈	9½	18	1	ADH-030/480V/3P	55
35	17 ⁵ / ₈	20 ¹³ / ₈	28 ¹³ / ₈	16	⅝	4¼	3½	11 ¹³ / ₈	9½	21	1	ADH-035/480V/3P	65
40	19 ⁵ / ₈	20 ¹⁵ / ₈	28 ¹⁵ / ₈	18	⅝	4¾	3½	11 ¹⁵ / ₈	9½	24	2	ADH-040/480V/3P	70
45	21 ⁵ / ₈	20 ¹⁷ / ₈	28 ¹⁷ / ₈	20	⅝	5¼	3½	11 ¹⁷ / ₈	9½	27	2	ADH-045/480V/3P	80
50	23 ⁵ / ₈	20 ¹⁹ / ₈	28 ¹⁹ / ₈	20	⅝	5¾	3½	11 ¹⁹ / ₈	9½	30	2	ADH-050/480V/3P	90
60	27 ⁵ / ₈	20 ²¹ / ₈	28 ²¹ / ₈	26	⅝	4½	3½	11 ²¹ / ₈	9½	36	2	ADH-060/480V/3P	105
100	43 ⁵ / ₈	20 ²³ / ₈	28 ²³ / ₈	42	⅝	5⅝	3½	11 ²³ / ₈	9½	60	5	ADH-100/480V/3P	175
162	39 ⁵ / ₈	35	42 ⁷ / ₈	38	⅝	4 ⁷ / ₈	3½	11 ²⁵ / ₈	9½	54	6	ADH-162/480V/3P	185
216	27 ⁵ / ₈	35	42 ⁷ / ₈	26	⅝	4½	3 ⁷ / ₈	20	18 ³ / ₈	72	6	ADH-216F/480V/3P	240
270	33 ⁵ / ₈	35	42 ⁷ / ₈	32	⅝	5½	3 ⁷ / ₈	20	18 ³ / ₈	90	8	ADH-270F/480V/3P	300

Ordering Example: ADH-035/480V/3P, 21-element, 3-phase, 480V high temperature air duct heater. Refer to J-3 for application data.

Low watt density resistor wire. Watt density on the heating coil is designed for low watt density operation by increasing the coil diameter, gage and length of resistance wire to give maximum surface area and low operating coil surface temperature—providing longer coil life.

Easy element replacement. Individual elements are mechanically fastened to the flange permitting convenient, easy replacement.

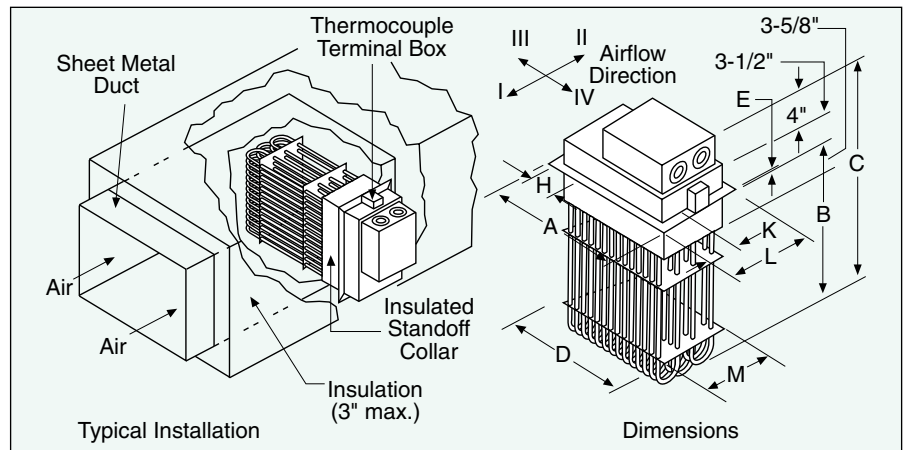
Low wiring compartment temperatures. Made possible by the addition of a one-inch thick blanket of insulation in the terminal box—allows use of low temperature field wiring instead of expensive high temperature busbars and wire. High temperature units include additional three inches of insulation to help reduce duct heat losses.

Easy access to simplified field wiring terminals. Terminal housing is completely removable for maximum access to field wiring terminals. Individual terminal blocks with threaded stud type terminals are provided for each circuit to permit quick positive attachment of circuit wiring conductors.

Dirt/dust resistant terminal housing. Terminal housing made of solid heavy gauge aluminized steel rather than perforated metal to resist dirt and dust accumulation on the electrical connections and thus provide longer service life.



ADHT-005/480V/3P shown smaller than actual size.



Flange mounting gasket. Packed separately with each duct heater to minimize leakage between the flange and air duct.

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To Order													
ADHT-High Temperature (20 W/in ²)													
kW	Dimensions - Inches									No. Elem.	No. Circ.	Model No.	Wt. lbs
	A	B	C	D	E	H	K	L	M				
5	5 ⁵ / ₈	20 ¹ / ₈	28 ⁵ / ₈	4	1/4	2 ¹ / ₂	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	3	1	ADHT-005/480V/3P	10
10	7 ⁵ / ₈	20 ³ / ₈	28 ⁵ / ₈	6	1/4	3 ¹ / ₂	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	6	1	ADHT-010/480V/3P	20
15	9 ⁵ / ₈	20 ³ / ₈	28 ⁵ / ₈	8	1/4	3	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	9	1	ADHT-015/480V/3P	30
20	11 ⁵ / ₈	20 ³ / ₈	28 ⁵ / ₈	10	1/4	2 ³ / ₄	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	12	1	ADHT-020/480V/3P	40
25	13 ⁵ / ₈	20 ³ / ₈	28 ⁵ / ₈	12	1/4	3 ¹ / ₄	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	15	1	ADHT-025/480V/3P	50
30	15 ⁵ / ₈	20 ³ / ₈	28 ¹ / ₄	14	3/8	3 ³ / ₄	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	18	1	ADHT-030/480V/3P	65
35	17 ⁵ / ₈	20 ³ / ₈	28 ¹ / ₄	16	3/8	4 ¹ / ₄	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	21	1	ADHT-035/480V/3P	80
40	19 ⁵ / ₈	20 ³ / ₈	28 ¹ / ₄	18	3/8	4 ³ / ₄	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	24	2	ADHT-040/480V/3P	90
45	21 ⁵ / ₈	20 ³ / ₈	28 ¹ / ₄	20	3/8	5 ¹ / ₄	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	27	2	ADHT-045/480V/3P	100
50	23 ⁵ / ₈	20 ³ / ₈	28 ¹ / ₄	22	3/8	5 ³ / ₄	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	30	2	ADHT-050/480V/3P	110
60	27 ⁵ / ₈	20 ³ / ₈	28 ¹ / ₄	26	3/8	4 ¹ / ₂	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	36	2	ADHT-060/480V/3P	130
80	35 ⁵ / ₈	20 ³ / ₈	28 ¹ / ₄	34	3/8	4 ³ / ₈	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	48	4	ADHT-080/480V/3P	175
90	39 ⁵ / ₈	20 ³ / ₈	28 ¹ / ₄	38	3/8	4 ⁷ / ₈	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	54	5	ADHT-090/480V/3P	200
100	43 ⁵ / ₈	20 ³ / ₈	28 ¹ / ₄	42	3/8	5 ³ / ₈	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	60	5	ADHT-100/480V/3P	220
120	27 ⁵ / ₈	35	42 ⁷ / ₈	26	3/8	4 ¹ / ₂	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	36	4	ADHT-120/480V/3P	205
160	35 ⁵ / ₈	35	42 ⁷ / ₈	34	3/8	4 ³ / ₈	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	48	8	ADHT-160/480V/3P	270
180	39 ⁵ / ₈	35	42 ⁷ / ₈	38	3/8	4 ⁷ / ₈	3 ¹ / ₂	11 ¹ / ₈	9 ¹ / ₂	54	6	ADHT-180/480V/3P	305
240	27 ⁵ / ₈	35	42 ⁷ / ₈	26	3/8	4 ¹ / ₂	3 ⁷ / ₈	20	18 ⁵ / ₈	72	8	ADHT-240F/480V/3P	400

Ordering Example: ADHT-020/480V/3P is a 12-element, 3-phase, 480V high temperature air duct heater.

Refer to J-3 for application data.

All ADHT models come with K type overtemp thermocouple.

HIGH TEMPERATURE AIR DUCT HEATERS

APPLICATION GUIDE

Selecting heater size. Refer to Technical Section for examples on determining kW requirements. For quick estimating purposes, the following formula may be used for standard conditions (includes 1.2 safety factor):

$$kW = \text{CFM} \times \text{temp. diff}/2500$$

Maximum work temperature. Types ADH and ADHT process air heaters can generally be used at the following maximum temperature shown, provided the minimum air velocity is maintained uniformly through the heater:

Air Velocity (ft/sec)	Max. Outlet Air Temp. °F	
	ADH	ADHT
4	800	1050
9	800	1100
16	800	1150
25	800	1200
36	800	1200

Application assistance. OMEGALUX sales/application engineers are available to assist you in the design or selection of equipment.

INSTALLATION MOUNTING TIPS

Low temperature duct heaters can be fastened directly to the sheet metal duct work with bolts or sheet metal screws.

High temperature duct heaters are generally mounted to a field fabricated stand off collar from the ductwork to position the heater such that the 3" insulation housing is in the same plane as the duct insulation.

All heaters can be mounted in any position; top, side or bottom (preferred) entry. Minimum duct size is A or L dimension plus 3/8" and B dimension plus 1/4".

Provide adequate heater support. Consideration should be given to installing hangers or some other means of heater support whenever there is any question about the ability of the ductwork to support the heater weight.

Overtemperature protection. All heaters should include an overtemperature (overheat) control whose temperature sensing element is located on the air discharge side of the heater as close to the heater as is practical. High temperature ADHT units include an overtemperature (Type K) thermocouple as standard.

Additional protection can be achieved by installing an air flow or pressure differential switch to protect the heater against low air flow conditions.

Operation controls. Selection of these controls, thermostat, SCR units, contactors etc., depends on the degree of accuracy required, reliability, electrical rating of heater and economic considerations.

Field power & control circuit wiring. Must be capable of carrying the electrical load and be protected by overcurrent protective devices, such as fusing, circuit breakers or ground fault detection in accordance with the requirements of the NEC and local codes as applicable.

Tandem mounting. Multiple heaters may be mounted in tandem with each other provided the maximum recommended outlet air temperature is not exceeded.

OPTIONS AVAILABLE

Gas tight design. Achieved by the use of threaded compression fittings with fiber washers to attach heating elements to flange—prevents leakage of ducted air into terminal housing.

Overtemperature protection. Thermocouple welded to the element sheath surface and wired to a terminal block can be provided for accurate overheat protection. Standard on high temperature units.

Moisture or explosion-resistant terminal housings are available for those applications requiring special terminal protection.

