

HUHAA SERIES

HORIZONTAL/DOWN FLOW UNIT HEATERS

- HORIZONTAL OR DOWN FLOW OPERATION IN ONE UNIT
- PULL-THROUGH AIR FLOW DESIGN
- 24V CONTROL TRANSFORMER STANDARD ON MOST MODELS
- FROM 3 TO 50 KW
- FROM 10,236 TO 170,600 BTU/HR.

APPLICATIONS

Auxiliary, supplementary or primary heat source in factories, stores, garages, basements, warehouses, public buildings, service stations, stock-rooms,, offices, large or exposed areas, or additions.



FILE # E21609

FEATURES

HORIZONTAL AND DOWN FLOW CAPABILITY

One unit mounts either horizontally or vertically. Totally versatile. In addition, louvers adjust up and down for even greater control of throw direction. Louvers have stops to prevent complete closing of the discharge area. Horizontal and down flow in one unit. 360° positioning. Adjustable louvers.

ELEMENTS

Aluminum-finned, copper clad steel sheath heating element has longer useful life, because of cooler sheath temperature and faster heat dissipation. Advanced pull-through air flow design draws air across heating element for more even air distribution and cooler element operation.

WIDE RANGE OF POWER AND OUTPUT

32 compatible models (no need to try to assemble a heating system from 70 or 80 models!) Forced air unit heater with 10 power ratings, from 3 Kw to 50 Kw heating output; 208, 240, 277 and 480V. 10,230 to

170,600 BTU/hr. 1- or 3-phase wiring on 5 through 10 Kw 208/240V and 15 Kw 208V units (field interchangeable). Branch circuit fusing (when required).

STAGING

Two-stage operation is available 2-speed fan selector switch (25 to 50 Kw models).

AUTOMATIC FAN DELAY

Automatic control delays fan action until heating element is warm. When thermostat is satisfied, fan continues to operate until heating element is cool. By preventing circulation of cold air and expelling excess heat, comfort level is raised and component life is extended.

THERMAL CUTOUT

Automatic reset linear thermal cut-out capillary type, provides protection over entire length of element area. (Manual reset protection available on made-to-order basis.)

LONG, DIRECTED HEAT THROWS

Specially designed venturi outlet to meet

that added throw required in vertical position. Choice of optional diffusers for variety of air patterns, maximizing heat concentration and coverage in the vertical position.

24-VOLT AND OPTIONAL 120-VOLT CONTROLS

24V control transformer standard on most models, providing a safer and more accurate means of temperature control (Optional 120V.) 3 Kw and 5 Kw, 208-277V, have line voltage controls as standard. (24V or 120V control available on made-to-order basis.)

SMOOTH, QUIET OPERATION

Ruggedly built, yet lighter weight for easier installation. No piping flutes, valves, or traps. Heavy gauge die-formed steel housing. Large, dynamically balanced fan blades provide maximum air flow with minimum turbulence and noise. Rugged, totally enclosed motor.

CATALOG NUMBER	VOLTS	KW	AMPS	PH	2-STAGE ELEM.	STANDARD CONT. VOLT	Air Delivery Data		Fan Motor Data			SHIP. WT
							CFM See note 2 & 4	FPM See note 2	ΔT (F)	RPM See note 2	HP	
HUHAA320	208	3	14.5	1	NA	208	350	800	27	1600	1/100	24
** HUHAA520	208	5	24	1-3	5A	208	350	800	45	1600	1/100	24
HUHAA720	208	7.5	36	1-3	5B	24	650	970	37	1600	1/30	36
HUHAA1020	208	10	48	1-3	5B	24	650	970	49	1600	1/30	36
HUHAA1520	208	15	72	1-3	5A	24	910	1640	52	1530	1/20	56
HUHAA2020	208	20	56	3	5A	24	1320	2060	48	1500	1/10	63
HUHAA3020	208	30	84	3	5A	24	2100/1800	2100/2030	45/53	1600/1375	1/4	91
HUHAA5020	208	50	139	3	5A	24	3000/2600	3260/2900	53/61	1525/1420	1/2	125
HUHAA324	208/240	2.2/3.0	11.0/12.5	1	NA	208/240	350	800	27	1600	1/100	24
** HUHAA524	208/240	3.7/5.0	18.0/21.0	1-3	5A	208/240	350	800	45	1600	1/100	24
HUHAA724	208/240	5.6/7.5	27.0/31.3	1-3	5B	24	650	970	37	1600	1/30	36
HUHAA1024	208/240	7.5/10.0	36.0/42.0	1-3	5B	24	650	970	49	1600	1/30	36
HUHAA1524	208/240	11.2/15.0	31.3/36.1	3	5C	24	910	1640	52	1530	1/20	56
HUHAA2024	208/240	15.0/20.0	41.2/48	3	5C	24	1320	2060	48	1500	1/10	63
HUHAA2524	208/240	18.7/25.0	52.0/60.0	3	5A	24	2100/1800	2100/2030	38/44	1600/1375	1/4	91
HUHAA3024	208/240	22.5/30.0	63.0/72.3	3	5A	24	2100/1800	2100/2030	45/53	1600/1375	1/4	91
HUHAA4024	208/240	30.0/40.0	83.4/96.4	3	5A	24	3000/2600	3260/2900	42/49	1525/1420	1/2	125
HUHAA5024	208/240	37.5/50.0	104.2/120.0	3	5A	24	3000/2600	3260/2900	53/61	1525/1420	1/2	125
HUHAA327	277	3	11	1	NA	277	350	800	27	1600	1/100	24
HUHAA527	277	5	18	1	NA	277	350	800	45	1600	1/100	24
HUHAA727	277	7.5	27	1	5B	24	650	970	37	1600	1/30	36
HUHAA1027	277	10	36	1	5B	24	650	970	49	1600	1/30	36
HUHAA348	480	3	3.6	3	NA	24	350	800	27	1600	1/100	24
HUHAA548	480	5	6	3	NA	24	350	800	45	1600	1/100	24
HUHAA748	480	7.5	9	3	5B	24	650	970	37	1600	1/30	36
HUHAA1048	480	10	12	3	5B	24	650	970	49	1600	1/30	36
HUHAA1548	480	15	18	3	5C	24	910	1640	52	1530	1/20	56
HUHAA2048	480	20	24	3	5C	24	1320	2060	48	1500	1/10	63
HUHAA2548	480	25	30	3	5C	24	2100/1800	2100/2030	38/44	1600/1375	1/4	91
HUHAA3048	480	30	36	3	5C	24	2100/1800	2100/2030	45/53	1600/1375	1/4	91
HUHAA4048	480	40	48	3	5A	24	3000/2600	3260/2900	42/49	1525/1420	1/2	125
HUHAA5048	480	50	60.2	3	5A	24	3000/2600	3260/2900	53/61	1525/1420	1/2	125

NOTE:

- All standard units are supplied with a low voltage control transformer and contactor (24V) except HUHAA-3 & 5 Kw, 208, 240, & 277 volt models. Low voltage control on these units is available on made-to-order. All units are also available on special order 120 volt control; internal with transformer or external without transformer.
- On dual voltage units, CFM, FPM, and RPM are shown at higher voltage.
- On dual phase units, maximum amp draw is listed for respective voltage.

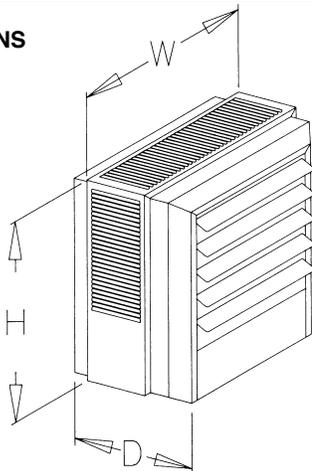
4. 25 thru 50 Kw models have two speed motors and dual CFM ratings.

5A. Standard

5B. Optional-made to order-amp load unbalanced on 3 phase.

5C. Optional-made to order-amp load balanced on 3 phase.

DIMENSIONS



HEATER	HEIGHT	WIDTH	DEPTH
3 & 5	16"	14"	8-1/2"
7.5 & 10	21-3/4"	19"	8-1/2"
15 & 20	21-3/4"	19"	13-3/4"
25 & 30	30"	26-5/8"	13-3/4"
40 & 50	30"	26-5/8"	18-1/8"

MOUNTING LIMITATIONS

Unit heaters should not be used in potentially explosive atmospheres. The finish is not intended for direct salt spray exposure in marine applications or the highly corrosive atmospheres of swimming pools, chemical storage bins, etc. Do not install unit heaters above recommended maximum mounting height. Obstructions must not block unit heater air inlet or discharge. Heaters must be mounted at least 7' above the floor to prevent accidental contact with the heating element or fan blade which could cause injury.

**OPTIONAL FACTORY INSTALLED
CONTROLS & ACCESSORIES**
(Factory Installed Only - Not to be Field Installed)

3 & 5 KW Heaters with 208, 208/240 or 277 Volt Supply <ul style="list-style-type: none"> • Control Transformer (120 or 24 Volt Sec.) • Power Contactor (120 or 24 Volt Holding Coil)
Optional 120 Volt control <ul style="list-style-type: none"> • 3 & 5 KW with 480 Volt supply and 7.5 KW thru 50 KW.
Two Stage Element Control (See Note 5 Page 2)
Manual Reset
Bird Screen (Outlet Mesh)

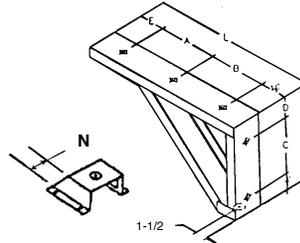
OPTIONAL FIELD INSTALLED ELECTRICAL CONTROLS

CAT. NO.	ACCESSORY	ELECTRICAL RATING	USE WITH
HUHAAMT-1 **	Single Pole Internal Thermostat - Temp. Range: 40F - 85F	25A @ 120, 240VAC Res. 22A @ 277VAC Res. 125VA Pilot Duty	All HUHAA Series Heaters (except 5KW, 208 volt, 3 ph and 208/240 volt 3 ph which use HUHAAMT-2)
HUHAAMT-2 **	Two-Stage Internal Thermostat - Temp. Range: 40F - 85F	25A @ 120, 240VAC Res. 22A @ 277VAC Res. 125VA Pilot Duty	5 KW, 208 volt 3 ph & 208/240 volt 3 ph, 208 volt: 15, 20, 30 & 50 KW, 208/240 volt: 25, 30, 40 & 50 KW, 480 volt: 40 & 50 KW heaters.
HUHAAFS *	Internal Summer Fan Switch	6A, 600VAC Res 2 Hp - 250, 480, 600VAC	All HUHAA Series Heaters
HUHAARFS-1	Remote Summer Fan Switch (Line Voltage)	2 HP, 250-480VAC	All HUHAA Series Heaters
HUHAARFS-2 *	Remote Summer Fan Switch with Relay (24V Coil-Single Pole Normally Open)	6 AFL, 35 ALR, 250VAC, 60Hz 3 AFL, 18 ALR, 480VAC, 60Hz	All HUHAA Series Heaters (except 3 & 5 KW & 208, 208/240 & 277 volt units, unless optional control transformer is supplied)
HUHAAHRT *	Heat Recovery Thermostat with Relay (24V Coil-Single Pole Normally Open) Hi - 120F, Low - 60F	6 AFL, 35 ALR, 250VAC, 60Hz 3 AFL, 18 ALR, 480VAC, 60Hz	All HUHAA Series Heaters (except 3 & 5 KW & 208, 208/240 & 277 volt units, unless optional control transformer is supplied)
HUHAADS-25	Power Disconnect Switch (3 Pole)	25A @ 600VAC, Res	All 3 and 5 KW Heaters and 7.5, 10, 15 & 20 KW 480 volt heaters.
HUHAADS-60	Power Disconnect Switch (3 Pole)	63A @ 600VAC, Res.	208 volt: 7.5, 10, 15 (3 ph only) & 20 KW, 208/240 volt: 7.5, 10, 15, 20 & 25 KW, 277 volt: 7.5 & 10 KW, 480 volt: 25, 30, 40 & 50 KW heaters.

NOTE: * Summer Fan Switch HUHAAFS cannot be used with Remote Fan Switch/Relay HUHAARFS-2 or with Heat Recovery Thermostat/Relay HUHAAHRT. **HUHAAHRT cannot be used with HUHAAMT-1 or HUHAAMT-2

OPTIONAL FIELD INSTALLED MECHANICAL CONTROLS

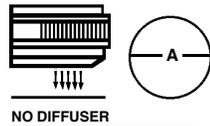
UNIVERSAL WALL & CEILING MOUNTING BRACKET CATALOG NO.	CEILING MOUNTING BRACKET CATALOG NO.	USED ON HEATER KW
HUHAAB-10	HCMB-10	3.5, 7.5, & 10
HUHAAB-20	HCMB-20	15 & 20
HUHAAB-30	HCMB-30	25 & 30
HUHAAB-50	HCMB-50	40 & 50



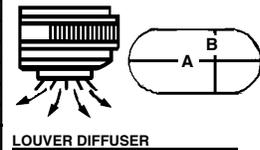
DIM	3-20KW	25-50KW
A	7-1/4"	9-7/16"
B	9-1/2"	14-3/8"
C	7-1/4"	12-1/8"
D	1-15/16"	2-1/16"
E	2-1/4"	3"
L	20-1/2"	28-5/16"
N	3-1/4"	4-1/2"

DIFFUSER	HEATER KW	MAX MNT. HT.	A DIM
NONE	3 & 5	9	18
NONE	7.5 & 10	14	26
NONE	15	20	35
NONE	20	23	40
NONE	25	23	63
NONE	30	20	55
NONE	40	28	70
NONE	50	25	63

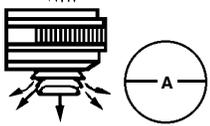
DIFFUSER PATTERN AND AREA



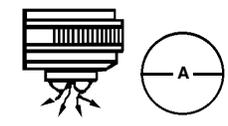
DIFFUSER CAT. NO.	USED ON HEATER KW	MAX. MNT. HT.	A DIM	B DIM
HUHAALD-S	3 & 5	9	25	12
HUHAALD-M	7.5 & 10	14	39	19
HUHAALD-M	15	18	50	25
HUHAALD-M	20	20	56	28
HUHAALD-L	25	23	68	32
HUHAALD-L	30	20	72	36
HUHAALD-L	40	24	88	44
HUHAALD-L	50	22	80	40



DIFFUSER CAT. NO.	USED ON HEATER KW	MAX. MNT. HT.	A DIM.
HUHAAAD-S	3 & 5	8	18
HUHAAAD-M	7.5 & 10	12	26
HUHAAAD-M	15	15	35
HUHAAAD-M	20	17	40
HUHAAAD-L	25	19	60
HUHAAAD-L	30	17	55
HUHAAAD-L	40	22	77
HUHAAAD-L	50	20	70



DIFFUSER CAT. NO.	USED ON HEATER KW	MAX. MNT. HT.	A DIM.
HUHAARD-S	3 & 6	9	20
HUHAARD-M	7.5 & 10	14	31
HUHAARD-M	15	18	40
HUHAARD-M	20	20	45
HUHAARD-L	25	23	69
HUHAARD-L	30	20	60
HUHAARD-L	40	24	75
HUHAARD-L	50	22	68



ARCHITECT'S AND ENGINEER'S SPECIFICATIONS*

Furnish and install type HUHAA horizontal / vertical unit heaters as manufactured by Berko, A Marley Engineered Products Brand, Bennettsville, SC with heating and air delivery capacities as shown on the heating schedule.

The cabinet shall be made of 18 gauge die formed furniture grade steel. Individual adjustable louvers with 30 degrees downward stops shall be furnished to provide desired control of discharge air. All metal surfaces of the enclosure shall be phosphate coated to resist corrosion and finished in a decorative baked enamel. Mounting brackets designed for either ceiling or wall swivel mounting shall be furnished as shown on the heating schedule.

Heaters shall be of the draw-through air flow design to eliminate the element hot spots and extend design life.

Fans shall be aluminum, directly connected to fan motor, and designed specifically for unit heater application.

Low voltage control 24 volt transformers shall be standard on models 7.5 KW and greater (Optional 120V), to allow safer more precise temperature control.

Individual optional field installed control kits shall be available for all models. All controls shall have pig tails and spade terminals for ease of wiring to centrally located terminal board. All heaters of 63 amperes or less shall be provided with power disconnect switches (field installed kits or factory installed).

All heaters shall be UL Listed and meet the requirements of the National Electrical Code.

For safety, the electric heating bank shall consist of metal sheath heating elements. The elements shall consist of 80/20 Nichrome wire and have a copper clad steel sheath for strength and corrosion resistance, and aluminum fins for faster heat transfer. Automatic reset thermal overheat protection shall be of the linear capillary type wired for instantaneous de-energizing in case of the thermal overload. Heating bank to have protective air inlet louvers.

All heaters drawing in excess of 48 amperes shall be provided with factory installed subdivided and fused circuits of 48 amps or less.

Motors shall be totally enclosed, designed for continuous heavy-duty all-angle operation and equipped with built-in thermal overload protection. Motors used on 25 thru 50 KW models shall be rated for two speed operation.

* *Berko reserves the right to change specifications without prior notice.*