

MODULAR ELECTRIC FURNACE

2, 3, 4, and 5 TONS

FEATURES

- Modular Blower Cabinet, Air Conditioning or Heat Pump ready
- Upflow, horizontal right or left applications
- Downflow requires sub-base accessory
- Electronic fan control board
- Three speed PSC motor on all models
- Matches with AC and HP cased coils (Hot water coil may be used, but doesn't match case size)
- Accepts accessory two stage outdoor thermostats
- Field installed electric heater packages from 5 kW - 25 kW available separately
- 208/230-1-60 supply voltage

SERVICE

- Direct drive slide-out blower assembly

QUALITY

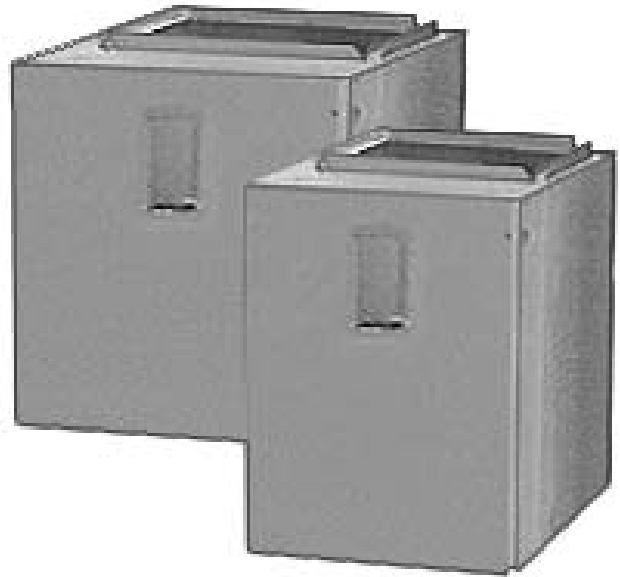
- Internally lined with 1/2" Tuf-Skin II insulation
- Prepainted galvanized steel cabinet

WARRANTY

- 5 year limited parts warranty

ACCESSORY HEATER

- UL listed for sale in U.S.A. and Canada
- Easy to install with simple 9-pin plug in connection to Modular Blower Cabinet
- Designed for 208/230 Volt
- Single & three-phase models
- Breakerless 5, 7.5, and 10 nominal kW models available
- 5, 7.5, 10, 15, 20, and 25 nominal kW models available with Circuit Breakers
- Auto-reset high temperature limits
- Requires a "NO HEAT KIT" if installed without electric heat.



Rated in accordance with ARI Standard 210 and/or 240. Certification applies only when used with proper components as listed with ARI.



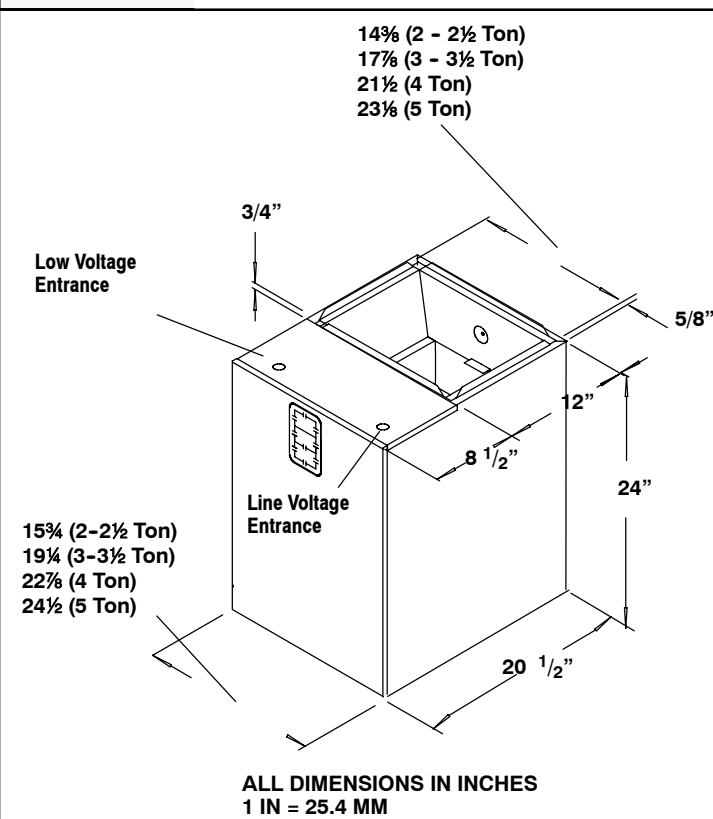
Model	Nominal Tons	Nominal CFM	Motor HP	Dimensions H x W x D in (mm)	Unit Weight lbs/kg	Ship Weight lbs/kg
MF08B1500B1	2	800	1/3	24 x 15½ x 20½ (610 x 394 x 521)	56/25	59/27
MF12F1900B1	3	1200	1/2	24 x 19⅞ x 20½ (610 x 495 x 521)	62/28	67/30
MF16J2200B1	4	1600	1/2	24 x 22¾ x 20½ (610 x 578 x 521)	67/30	73/33
MF20L2400B1	5	2000	3/4	24 x 24½ x 20½ (610 x 622 x 521)	70/32	78/35

UNIT SPECIFICATIONS - ELECTRIC FURNACE

Model Number		MF08B1500B1	MF12F1900B1	MF16J2200B1	MF20L2400B1
Application		Upflow / Horizontal / Downflow *			
Electrical Volts-Phase-Hz.		208 / 230 - 1 - 60			
Data **	Minimum Circuit Ampacity	3.1	3.6	3.6	7.5
	Time Delay Fuse (Amps)	15			
	Max Fuse or Breaker Size (Amps)	15			
Blower Data	Size	DD10 - 7	DD10 - 8	DD10 - 9	DD10 - 9
	Horsepower - Speed	1/3 - 3	1/2 - 3	1/2 - 3	3/4 - 3
	Full Load Rated (Amps)	2.5	2.9	2.9	6.0
Transformer		40 VA			
Weight	Unit / Shipping Lbs (Kg)	56/25 (59/27)	62/67 (28/30)	70/78 (32/35)	70/78 (32/35)

* Accessory subbase kit required for downflow application
 ** Disregard if electric heat is added. Refer to Electric Heat table.

NOMINAL INSTALLATION DIMENSIONS AND CLEARANCES



CLEARANCES	
NO HEATERS	
All Sides	0"
From Supply Duct	0"
Recommended Service From Front	20"
(Service for blower, filter if installed)	
WITH HEATERS	
All Sides	0"
From First Three Feet of Supply Duct to Combustibles	1"
From Duct after Three Feet	0"
Recommended Service From Front	20"
(Service for blower, heaters if installed)	

MODEL NUMBER IDENTIFICATION GUIDE

PRODUCT FAMILY		M	F	12	F19	00	B	1	SERIES
M = MODULAR									SALES CODES
B = MODULAR BLOWER (115V)								FIELD INSTALLED HEATER	
F = MODULAR ELECTRIC FURNACE (208/230V)								COIL WIDTH MATCH	
V = MODULAR VARIABLE SPEED BLOWER (208/230V)								B15 = 15 1/2 Cabinet	
NOMINAL CFM RANGE								F19 = 19 3/8 Cabinet	
08 = 800								J22 = 22 3/4 Cabinet	
12 = 1200								L24 = 24 1/2 Cabinet	
16 = 1600									
20 = 2000									

Airflow based on no coil, no filter, no electric heat (pre-accessory external static pressure). When heaters, filters, horizontal drain pan and/or downflow subbase are installed in an application, airflow must be re-calculated by adding the heater static, filter static, and coil static pressures (provided in the following tables) to the pre-accessory external static amount. See Coil Specification Sheet. Add .10 for Horizontal Drain Pan Kit. Add .20 for Downflow Subbase Kit.

AIRFLOW IS BLOWER ONLY, NO COIL ATTACHED

MF08		ESP IN WC						
SPEED	VOLTS	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Low	230v	1029	1020	1007	985	960	915	862
	208v	872	860	845	825	797	765	721
Med	230v	1286	1270	1254	1220	1180	1125	1058
	208v	1113	1105	1091	1070	1042	1000	947
High	230v	1500	1470	1432	1380	1315	1250	1168
	208v	1317	1305	1286	1255	1220	1170	1008

MF12		ESP IN WC						
SPEED	VOLTS	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Low	230v	973	975	979	979	973	955	931
	208v	811	815	816	810	797	780	749
Med	230v	1284	1295	1301	1305	1302	1280	1246
	208v	1084	1084	1084	1090	1089	1065	1030
High	230v	1663	1670	1671	1655	1631	1585	1519
	208v	1383	1385	1390	1390	1383	1365	1328

MF16		ESP IN WC						
SPEED	VOLTS	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Low	230v	1020	1015	1009	1002	991	975	950
	208v	858	845	830	815	801	780	749
Med	230v	1379	1385	1386	1379	1364	1343	1309
	208v	1156	1154	1149	1144	1134	1120	1098
High	230v	1776	1782	1783	1765	1738	1698	1643
	208v	1496	1496	1496	1495	1495	1470	1433

MF20		ESP IN WC						
SPEED	VOLTS	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Low	230v	1492	1495	1492	1475	1451	1395	1308
	208v	1246	1245	1238	1225	1203	1175	1125
Med	230v	1969	1955	1935	1890	1818	1700	1570
	208v	1641	1640	1633	1615	1584	1510	1406
High	230v	2696	2600	2492	2350	2192	2020	1844
	208v	2417	2355	2287	2200	2092	1940	1774

FILTER STATIC PRESSURE DROP

MODEL	WASHABLE FILTER SIZE	NOMINAL DISPOSABLE FILTER SIZE	CFM							
			600	800	1000	1200	1400	1600	1800	2000
MF08	14 1/4 x 20 1/4	14 x 20	0.05	0.09	0.13	0.19	---	---	---	---
MF12	17 3/4 x 20 1/4	18 x 20	----	----	0.09	0.12	0.17	0.22	---	---
MF16	21 1/4 x 20 1/4	20 x 20	----	----	---	---	0.12	0.15	0.19	---
MF20	24 3/4 x 20 1/4	24 x 20	----	----	---	---	0.09	0.11	0.14	0.18

HEATER STATIC TABLE HEATER KW / STATIC DROP

Single-Phase						
CFM	EHIA05	EHIA07	EHIA10	EHIA15	EHIA20	EHIA25
600	0.01	0.01	0.01	---	---	---
700	0.01	0.01	0.01	---	---	---
800	0.01	0.01	0.01	0.01	---	---
900	0.01	0.01	0.01	0.01	---	---
1000	0.01	0.01	0.01	0.01	0.02	---
1100	0.01	0.01	0.01	0.02	0.02	---
1200	0.01	0.01	0.01	0.02	0.02	---
1300	0.01	0.02	0.02	0.02	0.02	---
1400	0.01	0.02	0.02	0.02	0.03	0.03
1500	0.01	0.02	0.02	0.02	0.03	0.04
1600	0.01	0.02	0.02	0.03	0.03	0.04
1700	0.01	0.02	0.02	0.03	0.03	0.04
1800	0.01	0.02	0.02	0.03	0.04	0.04
1900	0.01	0.02	0.02	0.03	0.04	0.05
2000	0.01	0.02	0.02	0.03	0.04	0.05
Three-Phase						
CFM	---	---	EHIA10	EHIA15	EHIA20	EHIA25
600	---	---	0.01	---	---	---
700	---	---	0.01	---	---	---
800	---	---	0.01	0.01	---	---
900	---	---	0.01	0.01	---	---
1000	---	---	0.01	0.01	0.02	---
1100	---	---	0.01	0.02	0.02	---
1200	---	---	0.01	0.02	0.02	---
1300	---	---	0.02	0.02	0.02	---
1400	---	---	0.02	0.02	0.03	0.03
1500	---	---	0.02	0.02	0.03	0.04
1600	---	---	0.02	0.03	0.03	0.04
1700	---	---	0.02	0.03	0.03	0.04
1800	---	---	0.02	0.03	0.04	0.04
1900	---	---	0.02	0.03	0.04	0.05
2000	---	---	0.02	0.03	0.04	0.05
---	DO NOT OPERATE IN THIS AREA CFM / KW LIMIT EXCEEDED					

UNIT SPECIFICATIONS - No Heat Kit

No Heat Kit Model	Table 1	Supply Circuit			Supply Circuit No.	HP	Max. Motor Amps	MCA Branch Circuit AMP	Max Over-current Protection Devise (Amps)	Recommended				
		Volts	Phase	Hertz						Supply Wire 75°C copper			Ground Wire	
										# of Wires	Wire Size	Max. Ft. Length	# of Wires	Min Wire Size
EHIA00KN10	MF08*	208	1	60	Single	1/3	2.5	3.1	15	2	14	105	1	14
		230												
	MF12*	208	1	60	Single	1/2	2.9	3.6	15	2	14	105	1	14
		230												
	MF16*	208	1	60	Single	1/2	2.9	3.6	15	2	14	105	1	14
		230												
	MF20*	208	1	60	Single	3/4	6.0	7.5	15	2	14	90	1	14
		230												

* Modular blower without electric heat

Conversion: 1 foot = .305 meters

TECHNICAL DATA Single Phase with Circuit Breaker

Heater Model	Supply Volt-	Nom. Heat-BTUH	Heat KW	kW Per Element	Supply Circuit No.	Heater kW Per Circuit	Heater AMPS.	Max Motor AMPS.	FLA Total AMPS.	MCA Min Circuit Ampacity	Maximum Overcur-Protective Device (AMPS.)	Recommended				
												Supply Wire 75 ° C. Copper			Ground Wire	
												# of Wires	Wire Size	Max. Length (Ft)	# of Wires	Min Size
EHIA05KB10	240	16378	4.8	4.8	Single	4.8	20.0	6	26.0	32.5	35	2	8	113	1	10
	208	12283	3.6	3.6	Single	3.6	17.3	6	23.3	29.1	30	2	10	118	1	10
EHIA07KB10	240	24567	7.2	3.6	Single	7.2	30.0	6	36.0	45.0	45	2	8	81	1	10
	208	18425	5.4	2.7	Single	5.4	26.0	6	32.0	40.0	40	2	8	92	1	10
EHIA10KB10	240	32756	9.6	4.8	Single	9.6	40.0	6	46.0	57.5	60	2	6	101	1	10
	208	24567	7.2	3.6	Single	7.2	34.6	6	40.6	50.8	60	2	6	115	1	10
EHIA15KB10	240	49134	14.4	4.8	Single	14.4	60.0	6	66.0	82.5	90	2	4	113	1	8
					Mult. 1	9.6	40.0	6	46.0	57.5	60	2	6	101	1	10
					Mult. 2	4.8	20.0	0	20.0	25.0	25	2	10	95	1	10
	208	36851	10.8	3.6	Single	10.8	51.9	6	57.9	72.4	80	2	4	128	1	8
					Mult. 1	7.2	34.6	6	40.6	50.8	60	2	6	115	1	10
					Mult. 2	3.6	17.3	0	17.3	21.6	25	2	10	109	1	10
EHIA20KB10	240	65513	19.2	4.8	Single	19.2	80.0	6	86.0	107.5	110	2	2	137	1	6
					Mult. 1	9.6	40.0	6	46.0	57.5	60	2	6	101	1	10
					Mult. 2	9.6	40.0	0	40.0	50.0	50	2	8	73	1	10
	208	49134	14.4	3.6	Single	14.4	69.2	6	75.2	94.0	100	2	3	124	1	10
					Mult. 1	7.2	34.6	6	40.6	50.8	60	2	6	115	1	10
					Mult. 2	7.2	34.6	0	34.6	43.3	45	2	8	85	1	10
EHIA25KB10	240	81891	24	4.8	Single	24	100.0	6	106.0	132.5	150	2	1/0	177	1	6
					Mult. 1	9.6	40.0	6	46.0	57.5	60	2	6	101	1	10
					Mult. 2	14.4	60.0	0	60.0	75.0	80	2	4	124	1	8
	208	61418	18	3.6	Single	18	86.5	6	92.5	115.7	125	2	1	161	1	6
					Mult. 1	7.2	34.6	6	40.6	50.8	60	2	6	115	1	10
					Mult. 2	10.8	51.9	0	51.9	64.9	70	2	6	90	1	10

TECHNICAL DATA Single-Phase with Terminal Block

Heater Model	Supply Volt-	Nom. Heat-BTUH	Heat KW	kW Per Element	Supply Circuit No.	Heater kW Per Circuit	Heater AMPS.	Max Motor AMPS.	FLA Total AMPS.	MCA Min Circuit Ampacity	Maximum Overcur-Protective Device (AMPS.)	Recommended				
												Supply Wire 75 ° C. Copper			Ground Wire	
												# of Wires	Wire Size	Max. Length (Ft)	# of Wires	Min Size
EHIA05KN10	240	16378	4.8	4.8	Single	4.8	20.0	6	26.0	32.5	35	2	8	113	1	10
	208	12283	3.6	3.6	Single	3.6	17.3	6	23.3	29.1	30	2	10	118	1	10
EHIA07KN10	240	24567	7.2	3.6	Single	7.2	30.0	6	36.0	45.0	45	2	8	81	1	10
	208	18425	5.4	2.7	Single	5.4	26.0	6	32.0	40.0	40	2	8	92	1	10
EHIA10KN10	240	32756	9.6	4.8	Single	9.6	40.0	6	46.0	57.5	60	2	6	101	1	10
	208	24567	7.2	3.6	Single	7.2	34.6	6	40.6	50.8	60	2	6	115	1	10

TECHNICAL DATA Three Phase with Circuit Breaker

Heater Model	Supply Volt-	Nom. Heat-BTUH	Heat KW	kW Per Element	Supply Circuit No.	Heater kW Per Circuit	Heater AMPS.	Max Motor AMPS.	FLA Total AMPS.	MCA Min Circuit Ampacity	Maximum Overcur-Protective Device (AMPS.)	Recommended				
												Supply Wire 75 ° C. Copper			Ground Wire	
												# of Wires	Wire Size	Max. Length (Ft)	# of Wires	Min Size
EHIA10HB10	240	32756	9.6	3.2	Single	9.6	23.1	6	29.1	36.4	40	3	8	117	1	10
	208	24567	7.2	2.4	Single	7.2	20.0	6	26.0	32.5	35	3	8	131	1	10
EHIA15HB10	240	49134	14.4	4.8	Single	14.4	34.7	6	40.7	50.9	60	3	6	132	1	8
	208	36851	10.8	3.6	Single	10.8	30.0	6	36.0	45.0	45	3	8	94	1	10
EHIA20HB10	240	65513	19.2	3.2	Single	19.2	46.2	6	52.2	65.3	70	3	4	165	1	8
					Mult. 1	6.4	15.4	6	21.4	26.8	30	3	10	102	1	10
					Mult. 2	12.8	30.8	0	30.8	38.5	40	3	8	110	1	10
	208	49134	14.4	2.4	Single	14.4	40.0	6	46.0	57.5	60	3	6	117	1	8
					Mult. 1	4.8	13.3	6	19.3	24.2	30	3	10	113	1	10
					Mult. 2	9.6	26.7	0	26.7	33.3	35	3	8	127	1	10
EHIA25HB10	240	81891	24	4	Single	24	57.8	6	63.8	79.8	80	3	4	135	1	8
					Mult. 1	8	19.3	6	25.3	31.6	35	3	8	134	1	10
					Mult. 2	16	38.5	0	38.5	48.2	50	3	8	88	1	10
	208	61418	18	3	Single	18	50.0	6	56.0	70.0	70	3	4	153	1	8
					Mult. 1	6	16.7	6	22.7	28.3	30	3	10	96	1	10
					Mult. 2	12	33.3	0	33.3	41.7	45	3	8	102	1	10

Conversion: 1 foot = .305 meters

HEATER STAGING

Single-Phase							
ELECTRIC HEATER	VOLTAGE	TOTAL HEAT KW		1st STAGE KW (W1)		2nd STAGE KW (W2)	
		208V	240V	208V	240V	208V	240V
EHIA05KB10	208-240/1/60	3.6	4.8	3.6	4.8	-	-
EHIA07KB10	208-240/1/60	5.4	7.2	5.4	7.2	-	-
EHIA10KB10	208-240/1/60	7.2	9.6	7.2	9.6	-	-
EHIA15KB10	208-240/1/60	10.8	14.4	7.2	9.6	3.6	4.8
EHIA20KB10	208-240/1/60	14.4	19.2	7.2	9.6	7.2	9.6
EHIA25KB10	208-240/1/60	18	24	7.2	9.6	10.8	14.4
EHIA05KN10	208-240/1/60	3.6	4.8	3.6	4.8	-	-
EHIA07KN10	208-240/1/60	5.4	7.2	5.4	7.2	-	-
EHIA10KN10	208-240/1/60	7.2	9.6	7.2	9.6	-	-
Three-Phase							
ELECTRIC HEATER	VOLTAGE	TOTAL HEAT KW		1st STAGE KW (W1)		2nd STAGE KW (W2)	
		208v	240v	208v	240v	208v	240v
EHIA10HB10	208-240/3/60	7.2	9.6	7.2	9.6		
EHIA15HB10	208-240/3/60	10.8	14.4	10.8	14.4		
EHIA20HB10	208-240/3/60	14.4	19.2	4.8	6.4	9.6	12.8
EHIA25HB10	208-240/3/60	18	24	6	8	12	16

Conversion: 1 foot = .305 meters

HEAT STRIP STAGING			
	Single-Stage Operation (no staging - all electric heat together)	Two-Stage Capable	Three-Stage Capable (with ODTs only)
Single-Phase	EHIA05KB / KN EHIA07KB / KN EHIA10KB / KN EHIA15KB EHIA20KB EHIA25KB	EHIA15KB EHIA20KB EHIA25KB	EHIA25KB
Three-Phase	EHIA10HB EHIA15HB EHIA20HB EHIA25HB	EHIA10HB EHIA15HB EHIA20HB EHIA25HB	EHIA20HB EHIA25HB

ACCESSORIES					
Model	Description	Used with MF Model	SINGLE POINT WIRING KIT		
			Model	Description	Used with Heater size
EHIA00KN10	No Heat Kit	08, 12, 16, 20	AMFK20SPA	Single Point Wiring Kit (4-pole)	15-20 kW
EHIA05KB10	5 kW 1-Phase w/C.B.	08, 12, 16, 20	AMFK30SPA	Single Point Wiring Kit (6-pole)	25 kW
EHIA05KN10	5 kW 1-Phase w/T.B.	08, 12, 16, 20			
EHIA07KB10	7.5 kW 1-Phase w/C.B.	08, 12, 16, 20			
EHIA07KN10	7.5 kW 1-Phase w/T.B.	08, 12, 16, 20			
EHIA10KB10	10 kW 1-Phase w/C.B.	08, 12, 16, 20			
EHIA10KN10	10 kW 1-Phase w/T.B.	08, 12, 16, 20			
EHIA15KB10	15 kW 1-Phase w/C.B.	08, 12, 16, 20			
EHIA20KB10	20 kW 1-Phase w/C.B.	12, 16, 20			
EHIA25KB10	25 kW 1-Phase w/C.B.	16, 20			
EHIA10HB10	10 kW 3-Phase w/C.B.	12, 16, 20			
EHIA15HB10	15 kW 3-Phase w/C.B.	12, 16, 20			
EHIA20HB10	20 kW 3-Phase w/C.B.	16, 20			
EHIA25HB10	25 kW 3-Phase w/C.B.	16, 20			
KN = 1-phase KB = 1-phase HB = 3-phase					
T.B. = terminal block C.B. = circuit breaker					
			OUTDOOR THERMOSTAT		
Model	Description	Used with Heater size			
AMF002OTA	2-Stage ODTs	15 kW and above			
			DOWNFLOW KIT		
Model	Description	Used with MF Model			
AMF08DFB1	Downflow kit	08			
AMF12DFB1	Downflow kit	12			
AMF16DFB1	Downflow kit	16			
AMF20DFB1	Downflow kit	20			

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