



Technical Guide

Standard ECM Single Piece Multi-Position Air Handlers

For use with split-system cooling and heat pumps

Models: JMET Series - 460 V - Three-Phase



Due to continuous product improvement, specifications are subject to change without notice.

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WARRANTY SUMMARY

Standard 5-year limited parts warranty.

Extended 10-year limited parts warranty when product is registered online within 90 days of purchase for replacement or closing for new home construction.

Description

This unique modular system allows the flexibility to handle any application. The versatile JMET blower can be used for upflow, downflow, or horizontal left or right applications. It can be combined with cased coils to function as a cooling only unit or with a heat pump including electric heat for three-phase applications. The JMET blower and 8HK electric heater kits can be used as stand-alone electric furnaces.

Features

Next generation high-efficiency blower - delivers increased airflow and reduced blower watts by 10%, using a standard ECM motor

Two-stage operation - provides flexibility in application with single and two-stage outdoor equipment

Next generation insulation and gasket design - reduces thermal transmission paths and reduces sweating

Electric heat kit - 8HK field-installed series available for easy installation and service application

Designed for easy installation and service - casing size of 20.5 in., smooth sides, and rigid construction provide ease of attic access and tight applications. Front facing components, slide out blower, laser cut knock outs and integrated duct flanges shorten install time.

Cabinet air leakage - less than 2% at 1 in. W.C. external static pressure when tested in accordance with ASHRAE Standard 193

Long lasting quality - structural components made of post-powder painted steel or galvanized steel to prevent corrosion

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Nomenclature

Brand	J	J = JCI air handler	
Type	M	M = modular blower	
Motor type	E	V = multi variable speed ECM	
		E = multi standard ECM	
		P = multi PSC	
Stage	T	S = single stage capable	
		T = two stage capable	
		V = variable stage capable	
Options	-	C = communications ready	
		- (no designator) = standard (no options)	
Nominal airflow	12	08 = 800 CFM	
		12 = 1,200 CFM	
		16 = 1,600 CFM	
		18 = 1,800 CFM	
Cabinet width	B	A = 14.5 in.	C = 21 in.
		B = 17.5 in.	D = 24.5 in.
Options	N	N = no options	
Voltage (voltage-phase-hertz)	4	4 = 460-3-60	
Generation (major revision)	1	1 = first generation	
		2 = second generation	
Style letter (minor revision) not used for ordering	A	A = style A	
		B = style B	

Dimensions and duct connections

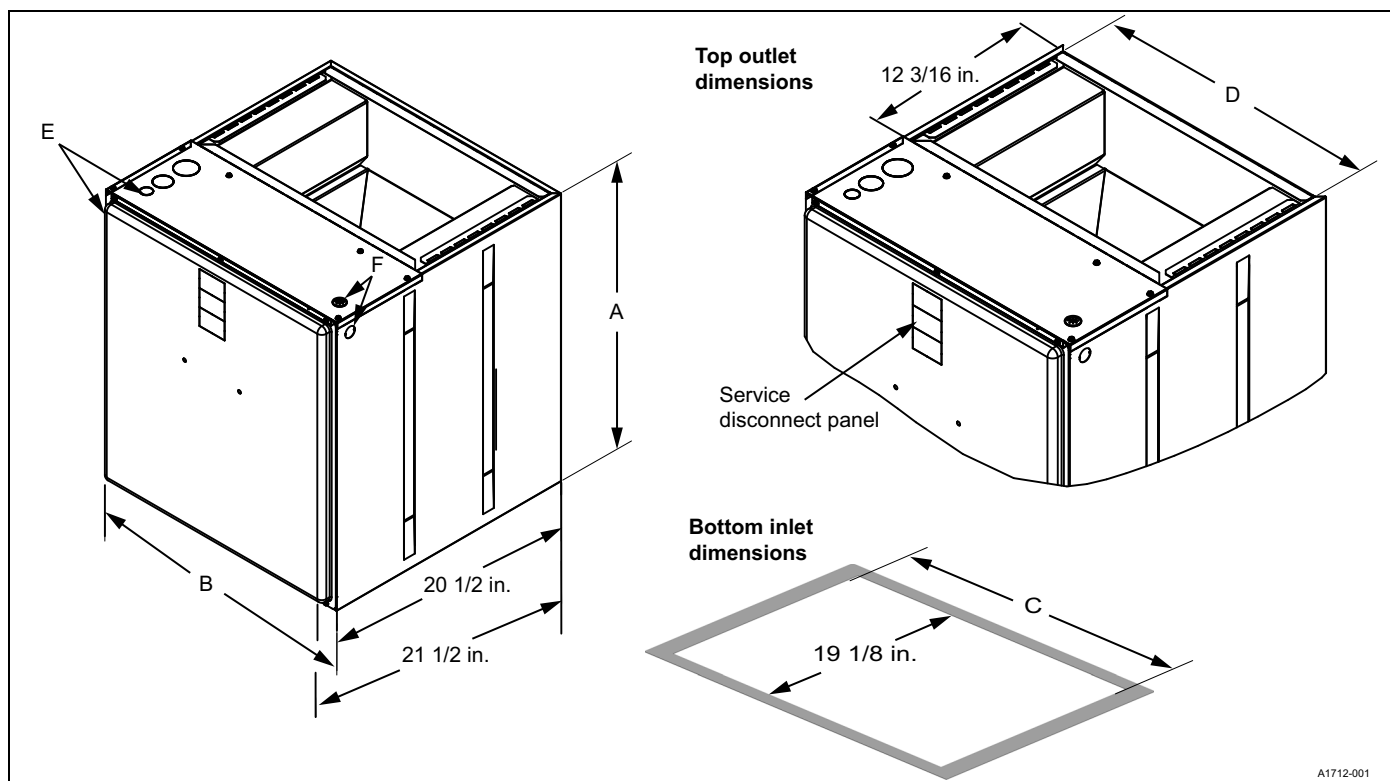


Figure 1: Duct connections

Table 1: Dimensions¹

Models	Dimensions ¹				Wiring knockouts ²	
	A	B	C	D	F	G
	Height (in.)	Width (in.)	Opening widths (in.)		Power (in.)	Control (in.)
JMET12BS4N1	22 3/4	17 1/2	16 1/2	13 1/2	7/8 (1/2) 1 3/8 (1) 1 23/32 (1 1/4)	7/8 (1/2)
JMET12CS4N1	22 3/4	21	20	20		
JMET16CS4N1	22 3/4	21	20	20		
JMET18DS4N1	22 3/4	24 1/2	23 1/2	23 1/2		

1. All dimensions are in inches
2. Actual size (conduit size)

Cooling capacity

Table 2: Cooling capacity XAF¹

Models	Rated CFM ²	Entering air dry/wet bulb (°F)	MBH at evaporation temperature and corresponding R-410A pressure (°F/psig)			
			35/107.9	40/118.9	45/130.7	50/143.3
XAFA18A	600	85/72	43.2	38.4	32.9	26.9
		80/67	34.8	29.9	24.4	18.9
		75/62	27.2	22.4	17.3	11.7
		70/57	20.6	15.8	10.7	8.1
XAFB18A	600	85/72	43.2	38.4	32.9	26.9
		80/67	34.8	29.9	24.4	18.9
		75/62	27.2	22.4	17.3	11.7
		70/57	20.6	15.8	10.7	8.1
XAFA24B	800	85/72	54.8	49.2	43	35.8
		80/67	44.7	39	32.3	25.2
		75/62	35.4	29.5	23	15.5
		70/57	27	20.9	14.2	10.9

Table 2: Cooling capacity XAF¹ (continued)

Models	Rated CFM ²	Entering air dry/wet bulb (°F)	MBH at evaporation temperature and corresponding R-410A pressure (°F/psig)			
			35/107.9	40/118.9	45/130.7	50/143.3
XAFB24B	800	85/72	54.8	49.2	43	35.8
		80/67	44.7	39	32.3	25.2
		75/62	35.4	29.5	23	15.5
		70/57	27	20.9	14.2	10.9
XAFB30C	1000	85/72	62.3	56.9	49.8	42.3
		80/67	51.9	45.7	38.4	30.5
		75/62	41.7	34.6	27.9	18.4
		70/57	32.1	25.3	18	13.9
XAFC30C	1000	85/72	62.3	56.9	49.8	42.3
		80/67	51.9	45.7	38.4	30.5
		75/62	41.7	34.6	27.9	18.4
		70/57	32.1	25.3	18	13.9
XAFA30D	1000	85/72	72	64.5	55.8	46.1
		80/67	58.6	50.8	42	32.4
		75/62	45.9	38.5	29.8	19.8
		70/57	35	27.6	19.1	14.5
XAFB36D	1200	85/72	80.2	72.1	62.8	52
		80/67	65.5	57.2	47.4	36.5
		75/62	52	43.5	33.4	22.2
		70/57	39.9	30.9	22.1	16.8
XAFC36D	1200	85/72	80.2	72.1	62.8	52
		80/67	65.5	57.2	47.4	36.5
		75/62	52	43.5	33.4	22.2
		70/57	39.9	30.9	22.1	16.8
XAFB36E	1200	85/72	73.6	67.5	60.5	52
		80/67	61.6	55	47.2	38.2
		75/62	50.3	43.1	34.9	23.8
		70/57	39.5	31.7	23.4	18.2
XAFC42E	1400	85/72	78.3	72.1	64.7	56
		80/67	65.7	59	50.9	41.4
		75/62	53.8	46.4	37.8	26.4
		70/57	42.5	34	26	20.3
XAFD42E	1400	85/72	78.3	72.1	64.7	56
		80/67	65.7	59	50.9	41.4
		75/62	53.8	46.4	37.8	26.4
		70/57	42.5	34	26	20.3
XAFC48F	1600	85/72	95.6	87.2	77.7	66.3
		80/67	79.5	70.6	60.5	48.4
		75/62	64.5	54.9	44.2	29.6
		70/57	50.2	40.1	29.4	22.9
XAFD48F	1600	85/72	95.6	87.2	77.7	66.3
		80/67	79.5	70.6	60.5	48.4
		75/62	64.5	54.9	44.2	29.6
		70/57	50.2	40.1	29.4	22.9
XAFC60G	1600	85/72	102.4	91.9	79.8	66.3
		80/67	83.7	72.6	60.3	47.3
		75/62	66.4	54.9	43.1	29
		70/57	50.5	39.3	27.5	20.7
XAFD60G	1800	85/72	109.1	98.2	85.3	71
		80/67	89	77.6	64.7	50.6
		75/62	71.1	58.9	46.2	30.4
		70/57	54.1	42.2	29.8	22.5
XAFC60H	1800	85/72	107	97.1	85.4	72.2
		80/67	88.2	77.8	65	51.9
		75/62	70.9	59.4	47.1	31.8
		70/57	54.5	43.1	30.6	23.4

Table 2: Cooling capacity XAF¹ (continued)

Models	Rated CFM ²	Entering air dry/wet bulb (°F)	MBH at evaporation temperature and corresponding R-410A pressure (°F/psig)			
			35/107.9	40/118.9	45/130.7	50/143.3
XAFD60H	1800	85/72	107	97.1	85.4	72.2
		80/67	88.2	77.8	65	51.9
		75/62	70.9	59.4	47.1	31.8
		70/57	54.5	43.1	30.6	23.4
XAFD60J	1800	85/72	112.1	101.6	89.2	75.4
		80/67	92.5	88.1	68.5	54.6
		75/62	74.2	62.3	49.7	33.6
		70/57	57.1	45.7	32.5	24.8

1. Actual capacity varies with the outdoor AC or HP that is used with the system.
2. Airflow is calculated for each system tonnage.

Table 3: Cooling capacity XAH¹

Models	Rated CFM ²	Entering air dry/wet bulb (°F)	MBH at evaporation temperature and corresponding R-410A pressure (°F/psig)			
			35/107.9	40/118.9	45/130.7	50/143.3
XAHA18A	600	85/72	43.2	38.4	32.9	26.9
		80/67	34.8	29.9	24.4	18.9
		75/62	27.2	2.4	17.3	11.7
		70/57	20.6	15.8	10.7	8.1
XAHA24B	800	85/72	54.8	49.2	43	35.8
		80/67	44.7	39	32.3	25.2
		75/62	35.4	29.5	23	15.5
		70/57	27	20.9	14.2	10.9
XAHB24B	800	85/72	54.8	49.2	43	35.8
		80/67	44.7	39	32.3	25.2
		75/62	35.4	29.5	23	15.5
		70/57	27	20.9	14.2	10.9
XAHB30C	1000	85/72	62.3	56.9	49.8	42.3
		80/67	51.9	45.7	38.4	30.5
		75/62	41.7	34.6	27.9	18.4
		70/57	32.1	25.3	18	13.9
XAHC30C	1000	85/72	62.3	56.9	49.8	42.3
		80/67	51.9	45.7	38.4	30.5
		75/62	41.7	34.6	27.9	18.4
		70/57	32.1	25.3	18	13.9
XAHB36D	1200	85/72	80.2	72.1	62.8	52
		80/67	65.5	57.2	47.4	36.5
		75/62	52	43.5	33.4	22.2
		70/57	39.9	30.9	22.1	16.8
XAHC36D	1200	85/72	80.2	72.1	62.8	52
		80/67	65.5	57.2	47.4	36.5
		75/62	52	43.5	33.4	22.2
		70/57	39.9	30.9	22.1	16.8
XAHC42E	1400	85/72	78.3	72.1	64.7	56
		80/67	65.7	59	50.9	41.4
		75/62	53.8	46.4	37.8	26.4
		70/57	42.5	34	26	20.3
XAHD42E	1400	85/72	78.3	72.1	64.7	56
		80/67	65.7	59	50.9	41.4
		75/62	53.8	46.4	37.8	26.4
		70/57	42.5	34	26	20.3
XAHC48F	1600	85/72	95.6	87.2	77.7	66.3
		80/67	79.5	70.6	60.5	48.4
		75/62	64.5	54.9	44.2	29.6
		70/57	50.2	40.1	29.4	22.9

Table 3: Cooling capacity XAH¹ (continued)

Models	Rated CFM ²	Entering air dry/wet bulb (°F)	MBH at evaporation temperature and corresponding R-410A pressure (°F/psig)			
			35/107.9	40/118.9	45/130.7	50/143.3
XAHD48F	1600	85/72	95.6	87.2	77.7	66.3
		80/67	79.5	70.6	60.5	48.4
		75/62	64.5	54.9	44.2	29.6
		70/57	50.2	40.1	29.4	22.9
XAHC60G	1800	85/72	102.4	91.9	79.8	66.3
		80/67	83.7	72.6	60.3	47.3
		75/62	66.4	54.9	43.1	29
		70/57	50.5	39.3	27.5	20.7
XAHD60G	1800	85/72	109.1	98.2	85.3	71
		80/67	89	77.6	64.7	50.6
		75/62	71.1	58.9	46.2	30.4
		70/57	54.1	42.2	29.8	22.5
XAHC60H	1800	85/72	107	97.1	85.4	72.2
		80/67	88.2	77.8	65	51.9
		75/62	70.9	59.4	47.1	31.8
		70/57	54.5	43.1	30.6	23.4
XAHD60H	1800	85/72	107	97.1	85.4	72.2
		80/67	88.2	77.8	65	51.9
		75/62	70.9	59.4	47.1	31.8
		70/57	54.5	43.1	30.6	23.4
XAHD60J	1800	85/72	112.1	101.6	89.2	75.4
		80/67	92.5	88.1	68.5	54.6
		75/62	74.2	62.3	49.7	33.6
		70/57	57.1	45.7	32.5	24.8

1. Actual capacity varies with the outdoor AC or HP that is used with the system.

2. Airflow is calculated for each system tonnage.

Physical and electrical data

Table 4: Physical and electrical data - cooling only

Models	JMET12B	JMET12C	JMET16C	JMET18D
Blower - diameter x width (in.)	11 x 8	11 x 10	11 x 10	11 x 11
Motor	HP	1/2 HP	1/2 HP	1 HP
	Nominal RPM	1050	1050	1050
Voltage (V)	460	460	460	460
Full load amps at 460 V (A)	1.9	1.9	3.3	3.3
Filter ¹	Type	Disposable or cleanable		
	Size	16 x 20 x 1	20 x 20 x 1	20 x 20 x 1
	Bottom rack kit	1BR01117	1BR01121	1BR01121
Shipping/operating weight (lb)	57/56	61/60	63/62	67/66

1. Field-supplied.

Table 5: Electrical data - cooling only

Models	Motor FLA ¹	Minimum circuit ampacity (A)	MOP ²
JMET12B/JMET12C	1.9	2.4	15
JMET16C/JMET18D	3.3	4.1	15

1. FLA = Full Load Amps

2. MOP = Maximum Overcurrent Protection device; must be HACR type circuit breaker or time delay fuse. Refer to the latest edition of the National Electric Code or in Canada the Canadian Electrical Code and local codes to determine correct wire sizing.

Table 6: Electrical heat with heat pump - minimum fan speed - XAF

Heater kit models ¹	Nominal kW at 480 V	Air handler models			
		JMET12B	JMET12C	JMET16C	JMET18D
8HK06501046	9.6	High (5)	High (5)	Medium high (4)	Medium (3)
8HK06501546	14.4	High (5)	High (5)	Medium high (4)	Medium (3)
8HK06502046	19.2	High (5)	High (5)	Medium high (4)	Medium (3)
8HK06502546	24	—	—	—	Medium (3)

1. All kits have no service disconnect. Terminal blocks only.

Table 7: Electrical heat with heat pump - minimum fan speed - XAH

Heater kit models ¹	Nominal kW at 480 V	Air handler models			
		JMET12B	JMET12C	JMET16C	JMET18D
8HK06501046	9.6	High (5)	High (5)	Medium high (4)	Medium (3)
8HK06501546	14.4	High (5)	High (5)	Medium high (4)	Medium (3)
8HK06502046	19.2	High (5)	High (5)	Medium high (4)	Medium (3)
8HK06502546	24	—	—	—	Medium (3)

1. All kits have no service disconnect. Terminal blocks only.

Table 8: Electric heat performance data: 460-3-60

Heater models ¹		Total heat at 480 V	
		kW	MBH
Three phase	8HK06501046	9.6	32.8
	8HK06501546	14.4	49.1
	8HK06502046	19.2	65.5
	8HK06502546	24	81.9

1. All kits have no service disconnect. Terminal blocks only.

Table 9: Electrical data for single source power supply: 460-3-60

Air handler models	Heater models ¹	Heater amps (A) at 480 V	Field wiring at 480 V	
			Minimum circuit ampacity (A)	MOP ² (A)
JMET12B	8HK06501046	11.5	16.8	20
	8HK06501546	17.3	24.0	25
	8HK06502046	23.1	31.2	35
JMET12C	8HK06501046	11.5	16.8	20
	8HK06501546	17.3	24.0	25
	8HK06502046	23.1	31.2	35
JMET16C	8HK06501046	11.5	18.6	20
	8HK06501546	17.3	25.8	30
	8HK06502046	23.1	33.0	35
JMET18D	8HK06501046	11.5	18.6	20
	8HK06501546	17.3	25.8	30
	8HK06502046	23.1	33.0	35
	8HK06502546	28.9	40.2	45

1. All kits have no service disconnect. Terminal blocks only.

2. MOP = Maximum Overcurrent Protection device; must be HACR type circuit breaker or time delay fuse. Refer to the latest edition of the National Electric Code or in Canada the Canadian Electrical Code and local codes to determine correct wire sizing.

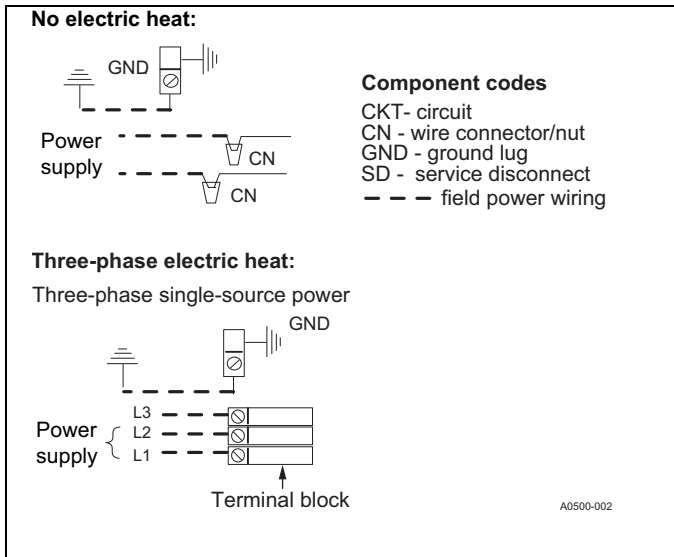


Figure 2: Power wiring - line connections

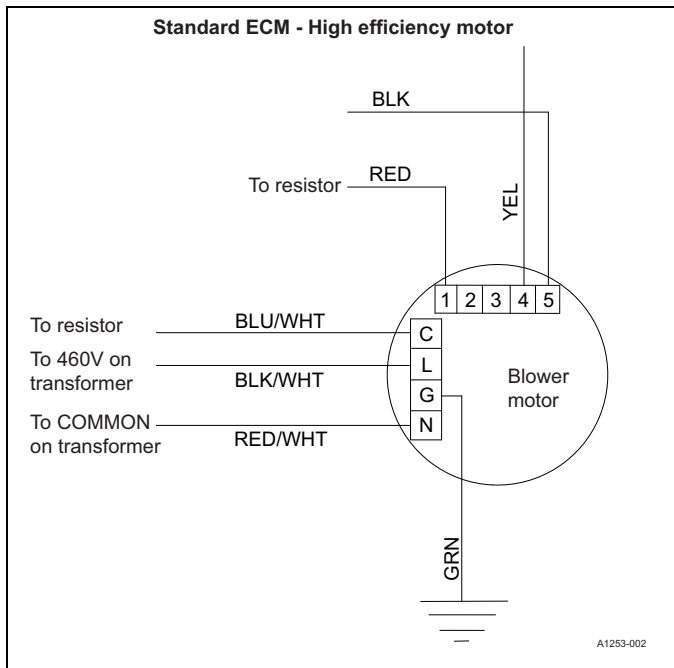


Figure 3: Blower speed connections

Accessories

Refer to the Price Manual for specific model numbers where not shown.

Electric heaters - 8HK models shown under electrical data include sequential operation and temperature dual limit switches for safe, efficient operation. Service disconnects are provided where shown.

Single source power accessory (three-phase)	
S1-32436041000	Contains a terminal block and wiring to connect service disconnects together.

Combustible floor base accessory - If an electric heat accessory which is rated for greater than zero clearance to combustible surfaces is installed in these air handlers in the downflow operating positions on a combustible floor, one of the following combustible floor base accessory models is required: S1-1FB1917, S1-1FB1921, S1-1FB1924.

Breaker moisture seal accessory - A clear circuit breaker moisture barrier seals the breakers from humidity and dust. The flexibility of the clear cover allows circuit breakers to be turned ON or OFF without removing the cover. The cover firmly attaches to the access panel around the circuit breakers with the use of double backed adhesive tape. To ensure that moisture or dust does not contaminate circuit breakers, an S1-02435672000, Circuit Breaker, Cover Seal may be ordered.

Thermostat - Compatible thermostat controls are available through accessory sourcing. For optimum performance, these indoor units are fully compatible with our YORK touch screen thermostat with proprietary (patent-pending) hexagon interface. For more information, see the thermostat section of the Product Equipment Catalog.

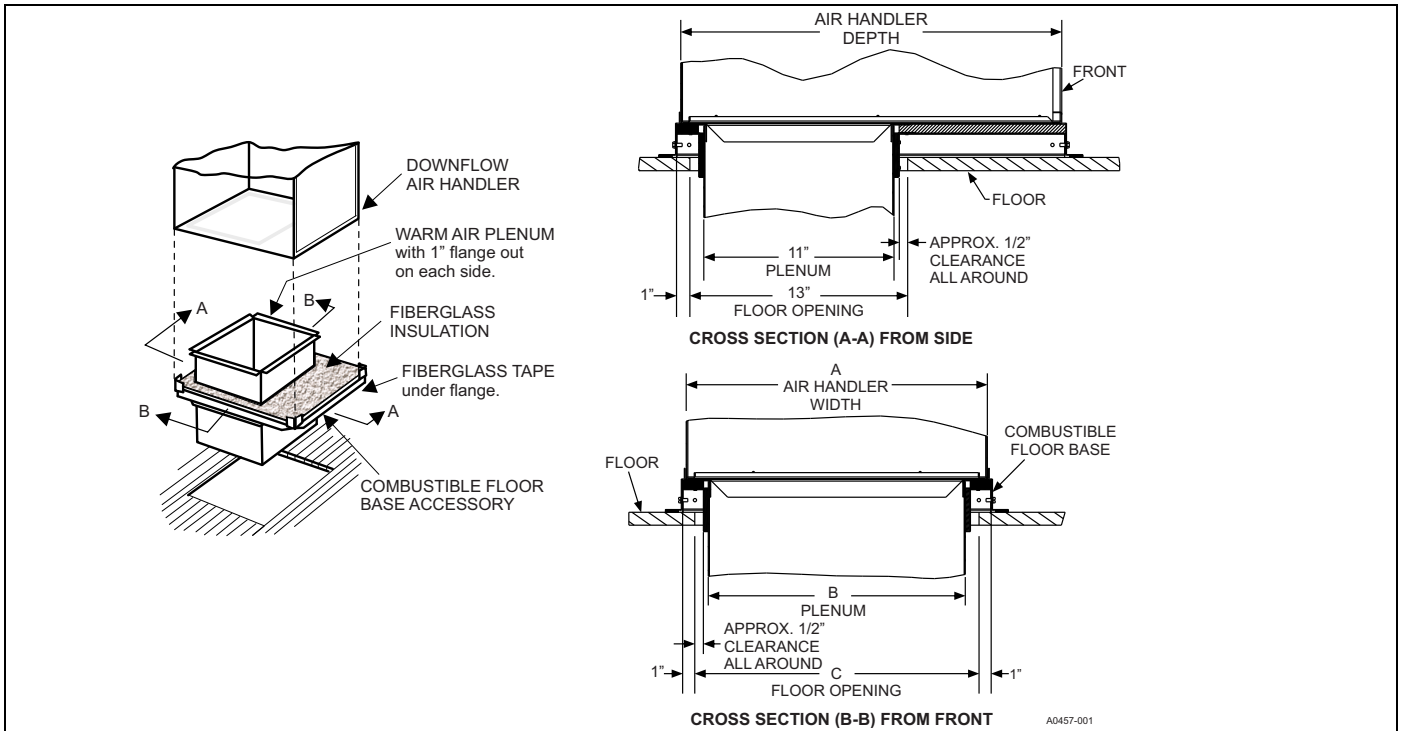


Figure 4: Combustible floor base accessory

Table 10: Combustible floor base accessory dimensions

Floor base models	Used with	Dimensions (in.)		
		A	B	C
1FB1917	JMET12B	17.5	14.0	16.0
1FB1921	JMET12C, JMET16C	21.0	17.5	19.5
1FB1924	JMET18D	24.5	21.0	23.0

Limitations

These units must be wired and installed in accordance with all national and local safety codes.

Voltage limits are as follows:

Air handler voltage	Voltage code	Normal operating voltage range ¹
460-3-60	06	432-504

1. Rated in accordance with ARI Standard 110, utilization range A.

Airflow must be within the minimum and maximum limits approved for electric heat, evaporator coils and outdoor units.

Typical applications

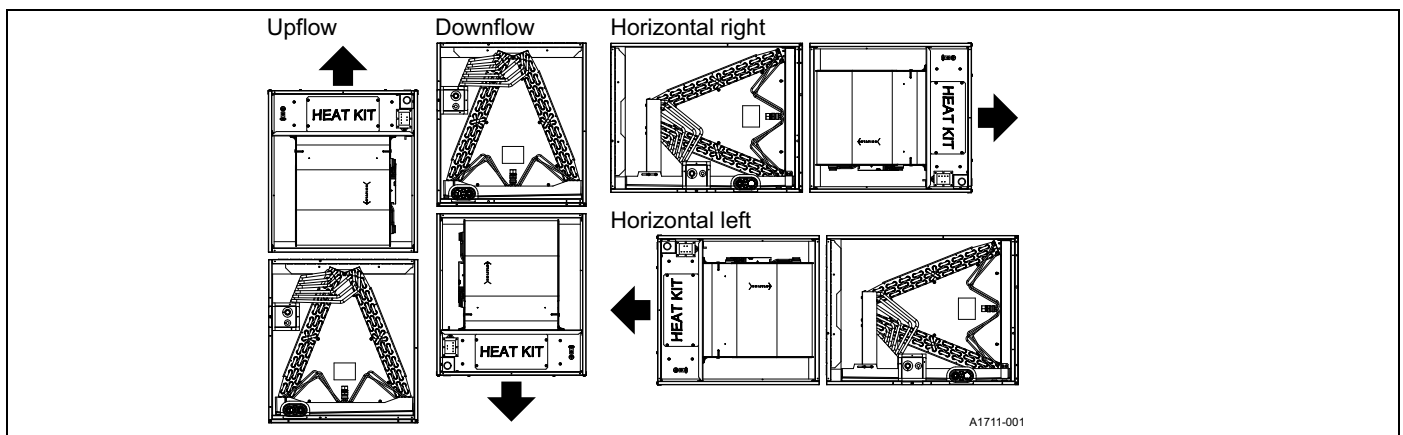


Figure 5: Typical applications

Typical thermostat connection

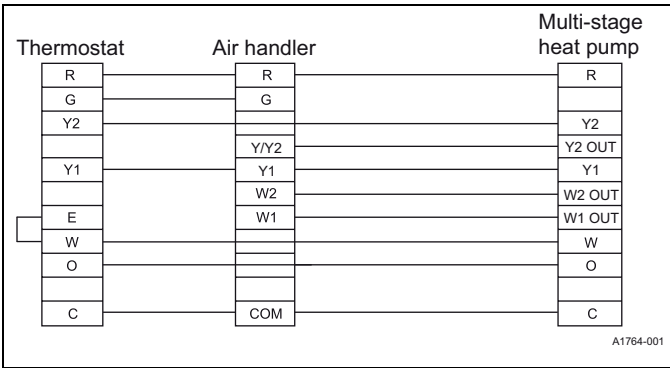


Figure 6: Standard ECM AH and premium multi-stage HP - conventional wiring

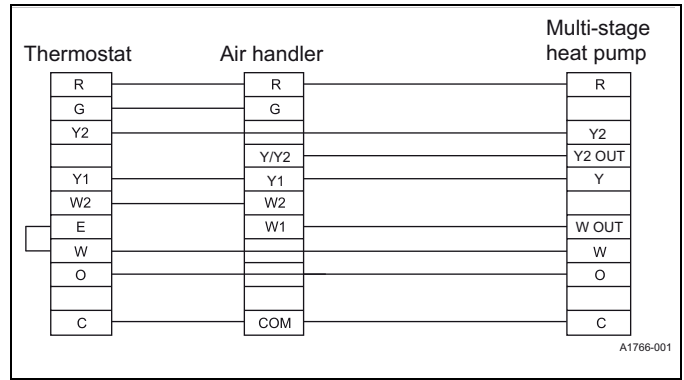


Figure 9: Standard ECM AH and standard multi-stage HP - conventional wiring

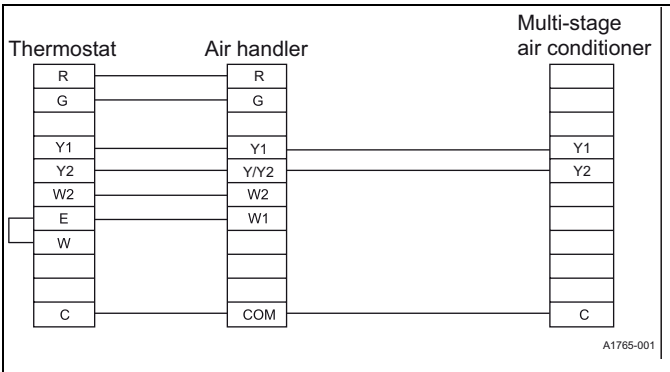


Figure 7: Standard ECM AH and standard multi-stage AC - conventional wiring

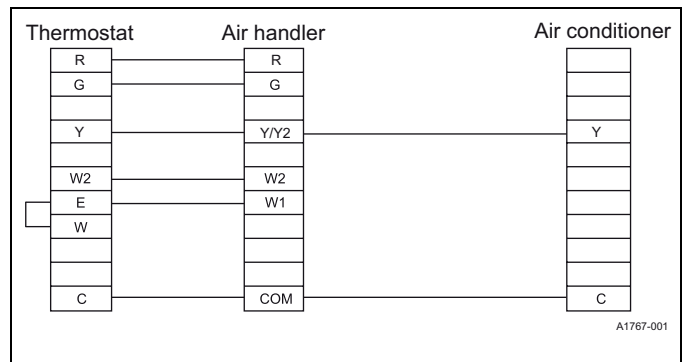


Figure 10: Standard ECM AH and single-stage AC - conventional wiring

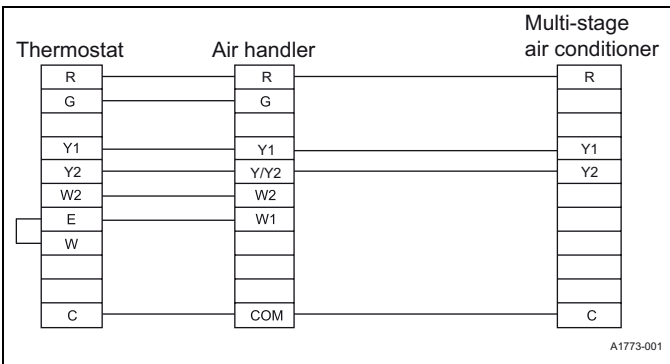


Figure 8: Standard ECM AH and standard multi-stage AC - conventional wiring

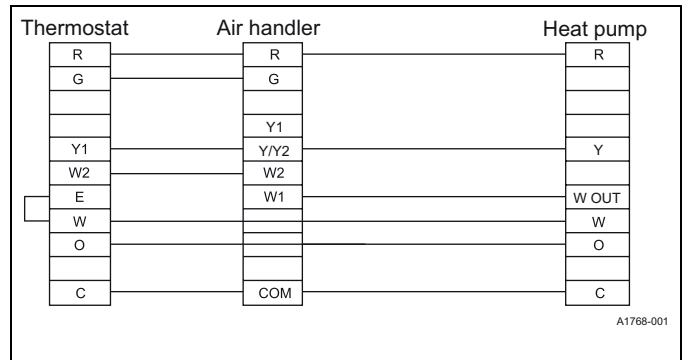


Figure 11: Standard ECM AH and single-stage HP - conventional wiring

Airflow data

Table 11: Airflow data (CFM per W)

Models	Blower motor speed	External static pressure (in. W.C.)										
		Unit	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
JMET12B	5 High	CFM	1475	1425	1400	1375	1325	1300	1275	1225	1200	1175
		W	274	284	294	304	314	324	334	344	354	364
	4 Medium high	CFM	1275	1250	1200	1175	1125	1100	1050	1000	950	875
		W	194	200	206	213	222	232	243	255	269	283
	3 Medium	CFM	1125	1075	1025	975	900	850	800	750	675	625
		W	128	137	146	156	165	174	183	193	202	211
	2 Medium low	CFM	1050	975	925	850	800	750	675	625	550	500
		W	106	114	123	132	140	149	157	166	175	183
	1 Low	CFM	775	700	600	525	450	—	—	—	—	—
		W	60	66	72	77	83	—	—	—	—	—
JMET12C	5 High	CFM	1700	1650	1600	1550	1525	1475	1425	1400	1350	1300
		W	292	305	319	333	346	360	373	387	400	414
	4 Medium high	CFM	1500	1475	1425	1400	1350	1300	1225	1175	1100	1025
		W	221	230	240	251	263	276	291	306	322	340
	3 Medium	CFM	1350	1325	1275	1225	1175	1100	1050	975	900	800
		W	164	176	189	201	213	226	238	251	263	276
	2 Medium low	CFM	1050	1000	925	850	775	700	625	575	500	425
		W	87	99	111	122	132	141	149	157	164	170
	1 Low	CFM	950	875	800	725	650	575	500	425	—	—
		W	71	83	94	104	113	121	128	135	—	—
JMET16C	5 High	CFM	2050	2000	1975	1950	1900	1875	1850	1825	1775	1750
		W	443	457	471	485	499	513	527	541	555	569
	4 Medium high	CFM	1875	1825	1775	1750	1700	1675	1625	1600	1550	1525
		W	340	353	367	381	395	409	422	436	450	464
	3 Medium	CFM	1500	1450	1425	1375	1325	1250	1200	1125	1050	975
		W	193	206	218	231	244	257	269	282	295	308
	2 Medium low	CFM	1200	1125	1050	975	900	825	750	675	600	525
		W	112	121	130	139	149	158	167	177	186	195
	1 Low	CFM	1025	950	875	775	700	625	550	450	—	—
		W	82	92	102	111	119	127	134	140	—	—
JMET18D	5 High	CFM	2350	2325	2275	2250	2225	2175	2150	2100	2075	2050
		W	550	569	587	606	624	643	662	680	699	717
	4 Medium high	CFM	2175	2150	2100	2050	2025	1975	1925	1900	1850	1825
		W	438	456	473	491	508	525	543	560	578	595
	3 Medium	CFM	1950	1900	1850	1825	1775	1725	1675	1625	1575	1525
		W	327	344	360	377	394	410	427	444	460	477
	2 Medium low	CFM	1500	1425	1350	1275	1200	1125	1050	975	900	825
		W	159	172	185	198	211	224	237	249	262	275
	1 Low	CFM	1350	1250	1175	1100	1000	925	850	750	675	600
		W	125	136	148	159	170	182	193	204	215	227

Notes:

1. No electric heat installed
2. Air handler units are tested to UL60335-2-40 standards up to 0.6 in. W.C. external static pressure.
3. Dry coil conditions only; tested without filters
4. For optimal performance, external static pressures of 0.2 in. W.C. to 0.5 in. W.C. are recommended. Heating applications are tested at 0.5 in. W.C. external static pressure.
5. Airflow data shown is from testing performed at 460 V. JMET units use a standard ECM constant torque motor and there is minimal variation of airflow at other distribution voltage values. The above data can be used for airflow at other distribution voltages.