



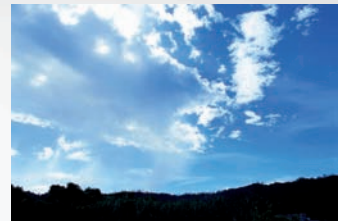
FALCON

Rooftop Units

ACPSB, ACPSE 50/60Hz

Cooling Capacity : 59 to 1439 MBH (17 to 422 kW)

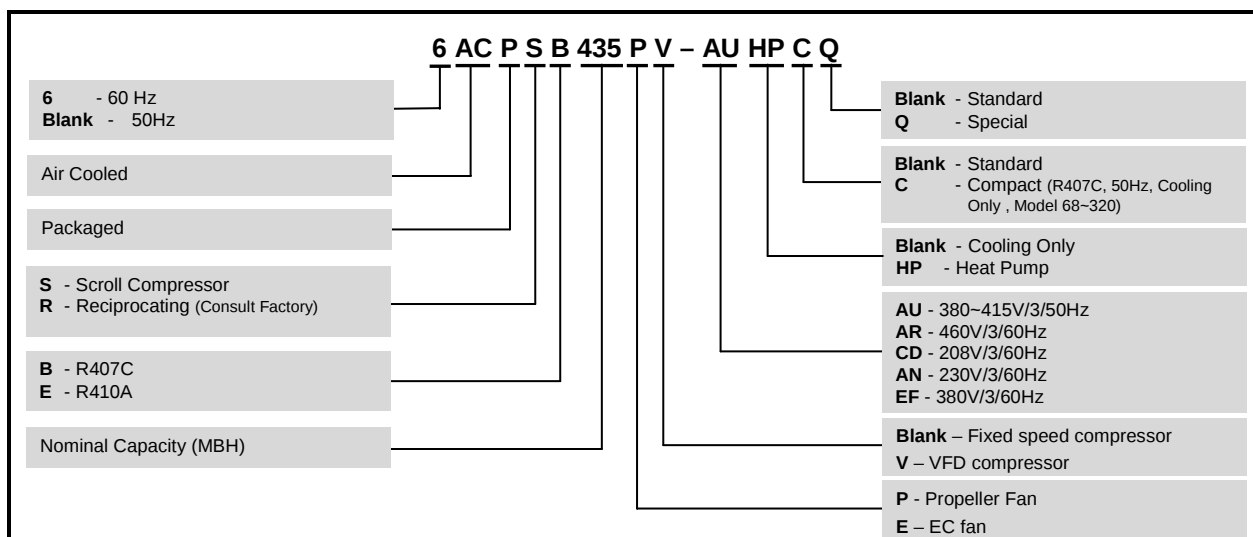
Heating Capacity : 53 to 1260 MBH (16 to 369 kW)



DUNHAM-BUSH®

Products that perform...By people who care

NOMENCLATURE



GENERAL DESCRIPTION

The ACPSB/E-P Series with new features is suitable for hotel, office, hospital, school, factory and supermarket applications. The low noise and compact series are completely leak tested, evacuated, dehydrated and charged with refrigerant prior to shipment. The units are rated in accordance with AHRI standards 340/360.

HERMETIC SCROLL COMPRESSOR(S)

Reliability

- ✱ No contact scroll design that minimizes friction, increases volumetric efficiency and reduces vibration, thus longer service life.
- ✱ Suction gas cooled motor.

Low Power Consumption:

- ✱ High EER.

CLASS F INSULATION CONDENSER FAN MOTOR

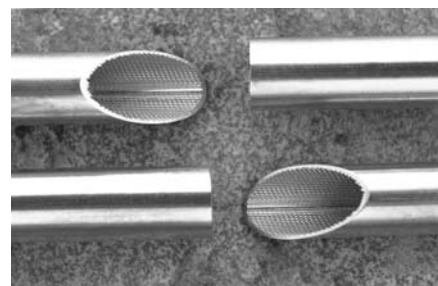
- ✱ Extra safety margin and longer motor life even in extreme operating conditions.
- ✱ IP 55 construction ensure extra motor protection (ACPSB/E Series 68P to 1520P).
- ✱ Low motor speed at 950 rpm ensures quiet condenser fan operation.

MULTIPLE COMPRESSOR (ACPSB220P/ACPSE250P and above)

- ✱ By cycling off compressor operation to match building load, no energy is being wasted when room load requires lesser cooling capacity.
- ✱ No total shut down when servicing or repairing a faulty compressor.

EFFICIENT CONDENSER COIL

- ✱ Staggered row of 3/8"OD inner groove tubes with 25 to 30% more surface area guarantee better heat transfer.
- ✱ Mechanically expanded into die-formed corrugated aluminum fins.
- ✱ Integral subcooling circuit to maximize efficiency.
- ✱ One or multiple thermal expansion valve promotes efficient cooling and superheat during reverse cycle
- ✱ Leak and pressure tested to 450 psig (R407C) and 650 psig (R410A).



GENERAL DESCRIPTION

SAFETY CONTROL

- ✿ High-low pressure cutout to protect compressor from high discharge pressure and system leakage.
- ✿ Suction accumulator to prevent liquid flood back to the compressor during heating cycle

FULLY LEAK TESTED REFRIGERANT CIRCUIT

- ✿ Compressor, condenser coil, filter drier, sight glass, thermo-expansion valve, distributor and evaporator coil is brazed in complete sealed loop.
- ✿ Leak and pressure tested at 450 psig (R407C) and 650 psig (R410A).
- ✿ Pressure ports are provided on the discharge, liquid and suction line.
- ✿ Evacuated, dehydrated and charge with refrigerant gas prior to shipment.

CASING

- ✿ Constructed from heavy gauge galvanized steel.
- ✿ Panels are painted with epoxy powder paint for excellent finish, weatherability and corrosion resistance.
- ✿ Evaporator section is insulated with acoustical closed cell Polyethylene (PE) foam insulation.

EFFICIENT EVAPORATOR COIL

- ✿ Independent thermal expansion valve with external equalizer for better refrigerant control and wider load condition.
- ✿ Leak and pressure tested to 450 psig (R407C) and 650 psig (R410A).
- ✿ Evacuated, dehydrated and charged with refrigerant gas.

DRIVE PACKAGE AND BLOWERS

- ✿ Belt driven drive package offers flexibility on various air flow rate and various static pressure applications (160P and above).
- ✿ Single large diameter double inlet double width blowers (AMCA certified) reduce the noise level and eliminates the need for common transition and eliminates air unbalance.

FILTERS

- ✿ 1" thick with side loading for ACPSB/E Series 68P to 145P.
- ✿ 2" thick with side loading for ACPSB/E Series 160P and above



OPTIONAL ACCESSORIES

- ✿ Factory wired starters
 - DOL for compressors and fan motors.
 - Soft Starter for compressors.
- ✿ Suction stop valve(s), discharge stop valve(s) and liquid stop valve(s).
- ✿ Fan staging (ACPSB/E Series 160P and above) of multiple fans for head pressure control.
- ✿ Thermostat.
- ✿ Hydrophilic fins or copper fins for better corrosion resistance.
- ✿ Hot gas by pass for low load and low ambient conditions.
- ✿ Electric heaters.

COOLING & HEATING PORTFOLIO

Reference		Capacity (MBH)			
		50Hz		60Hz	
		R407C	R410A	R407C	R410A
ACPSB/E 68	Cooling	60.1	61.1	59.0	61.1
	Heating	54.9	57.3	53.2	59.7
ACPSB/E 81	Cooling	70.3	69.9	73.4	71.3
	Heating	65.5	67.9	67.9	70.6
ACPSB/E 95	Cooling	86.0	77.8	85.3	82.6
	Heating	76.8	73.7	75.4	79.8
ACPSB/E 125	Cooling	117.0	107.5	118.1	111.2
	Heating	104.1	100.0	105.4	102.7
ACPSB/E 145	Cooling	135.5	122.5	136.8	129.0
	Heating	116.7	110.6	122.2	118.4
ACPSB/E 160	Cooling	143.7	136.8	154.6	141.9
	Heating	130.3	129.0	142.6	134.4
ACPSB/E 190	Cooling	168.6	160.7	173.3	163.1
	Heating	151.2	147.1	153.9	150.1
ACPSB/E 220	Cooling	195.5	184.3	199.3	187.7
	Heating	174.7	169.9	180.8	175.7
ACPSB/E 250	Cooling	229.6	218.7	232.4	224.5
	Heating	207.5	201.3	210.2	207.5
ACPSB/E 290	Cooling	259.0	241.9	272.6	259.3
	Heating	229.6	220.8	242.9	239.2
ACPSB/E 320	Cooling	289.7	278.8	310.2	288.7
	Heating	261.0	259.7	284.9	270.9
ACPSB/E 380	Cooling	339.2	323.5	348.0	328.2
	Heating	306.4	300.0	311.9	306.4
ACPSB/E 435	Cooling	387.6	362.7	397.5	380.1
	Heating	347.0	331.0	360.3	351.5
ACPSB/E 480	Cooling	404.7	390.3	430.6	403.0
	Heating	377.4	376.7	413.2	392.7
ACPSB/E 510	Cooling	439.5	431.6	476.7	465.8
	Heating	399.6	397.2	444.3	439.1
ACPSB/E 570	Cooling	484.5	480.1	512.5	504.0
	Heating	446.3	438.8	474.6	468.5
ACPSB/E 640	Cooling	577.7	532.0	608.4	556.2
	Heating	496.5	502.9	535.0	531.3
ACPSB/E 700	Cooling	617.6	596.8	669.8	639.1
	Heating	557.5	557.9	609.4	609.7
ACPSB/E 760	Cooling	659.6	636.7	722.0	684.5
	Heating	594.4	592.3	650.0	649.7
ACPSB/E 800	Cooling	724.4	706.7	797.1	768.8
	Heating	644.6	651.0	728.5	723.0
ACPSB/E 890	Cooling	805.6	768.4	865.0	815.8
	Heating	723.0	717.6	782.1	776.3
ACPSB/E 960	Cooling	866.7	823.0	940.0	860.2
	Heating	760.9	765.7	837.7	807.7
ACPSB/E 1020	Cooling	934.6	895.1	1031.8	964.3
	Heating	809.4	827.8	917.9	919.6
ACPSB/E 1140	Cooling	1031.8	975.2	1098.4	1030.1
	Heating	912.4	917.2	975.5	985.1
ACPSB/E 1340	Cooling	1199.7	1142.4	1234.5	1232.5
	Heating	1023.3	1050.9	1076.2	1153.0
ACPSB/E 1520	Cooling	1365.2	1293.5	1438.6	1359.4
	Heating	1139.7	1158.1	1259.8	1230.1

Notes: 1) Ratings Are Gross Capacities - For Net Capacities, Deduct Evaporator Blower Motor Heat.
2) Cooling Mode: At 80 °F (DB), 67 °F (WB) Air on Evaporator And 95°F Ambient Air Temperature on Condenser.
3) Heating Mode: At 70 °F (DB) Air on Evaporator And 45°F Ambient Air Temperature on Condenser.

Compact Series

Model	Capacity (MBH)	
	50Hz	
	Cooling	
ACPSB 68	62.8	
ACPSB 95	88.9	
ACPSB 125	121.2	
ACPSB 160	152.3	
ACPSB 220	207.8	
ACPSB 250	243.9	
ACPSB 290	273.6	
ACPSB 320	308.1	

Notes: 1) Ratings Are Gross Capacities - For Net Capacities, Deduct Evaporator Blower Motor Heat.
2) Cooling Mode: At 80 °F (DB), 67 °F (WB) Air on Evaporator And 95°F Ambient Air Temperature on Condenser.

PHYSICAL SPECIFICATIONS

R407C, 50 Hz

Model ACPSB	Compr.	Condenser Coil			Cond.Fan MotorHP (Qty)	Evaporator Blower			EvaporatorCoil		Air Filter	Refrigerant Charge		Approx. Operating Weight (Lbs)	Sound Pressure Level ±2 dB(A)
	Qty	Face Area ft²	Row / FPI			StandardSize (Qty)	Motor Max HP (Qty)	Fan Min-Max Cfm	FaceArea ft²	Row / FPI	Size Inches (Qty)	Lbs Per System (Qty)			
			Cooling Only	Heat Pump								Cooling Only	Heat Pump		
68P	1	8.3	2/10	2/12	3/4(1)	270-270(1)	1.0(1)	1400 2800	4.7	3/12	16x25x1(2)	7.5(1)	10.2(1)	1100	66
81P	1	9.4	2/10	3/12	3/4(1)	270-270(1)	1.0(1)	1550 3100	5.2	3/12	16x25x1(1) 20x25x1(1)	9.9(1)	15.4(1)	1200	66
95P	1	10.9	2/12	3/12	3/4(1)	270-270(1)	1.0(1)	1550 3100	5.2	4/12	16x25x1(1) 20x25x1(1)	12.1(1)	17.6(1)	1300	66
125P	1	14.2	3/12	3/12	3/4(1)	270-270(2)	1.0(2)	2000 3900	6.6	4/12	20x25x1(2)	13.2(1)	18.7(1)	1600	67
145P	1	16.3	3/10	4/12	3/4(1)	270-270(2)	1.0(2)	2600 5100	8.5	4/12	20x25x1(2)	15.4(1)	20.9(1)	1750	67
160P	1	19.5	3/12	3/12	3/4(2)	15x15(1)	5.5(1)	3500 7000	11.7	3/12	20x20x2(2) 20x25x2(2)	23.1(1)	28.7(1)	1700	69
190P	1	19.5	2/14	3/12	3/4(2)	15x15(1)	5.5(1)	3500 7000	11.7	4/12	20x20x2(2) 20x25x2(2)	25.4(1)	30.9(1)	1800	70
220P	2	19.5	3/12	4/12	3/4(2)	15x15(1)	5.5(1)	3700 7300	12.3	4/12	20x20x2(2) 20x25x2(2)	13.2(2)	18.7(2)	1900	69
250P	2	27.4	2/16	4/12	3/4(2)	18x13(1)	7.5(1)	4400 8700	14.6	4/12	25x25x2(4)	13.2(2)	18.7(2)	2100	71
290P	2	27.4	3/16	5/12	3/4(2)	18x13(1)	7.5(1)	5000 10000	16.7	4/12	25x25x2(4)	15.4(2)	20.9(2)	2400	71
320P	2	37.5	2/14	4/12	3/4(3)	18x18(1)	15(1)	5850 11600	19.4	4/12	16x25x2(2) 20x25x2(4)	23.1(2)	28.7(2)	2900	71
380P	2	37.5	3/14	5/12	3/4(3)	18x18(1)	15(1)	6700 13400	22.6	4/12	16x20x2(3) 20x20x2(6)	25.4(2)	30.9(2)	3000	72
435P	3	40	4/12	5/12	3/4(3)	450x450(1)	20(1)	7000 14000	23.3	4/12	16x20x2(3) 20x20x2(6)	15.4(3)	20.9(3)	3100	72
480P	3	48.3	2/14	4/12	3/4(4)	500x500(1)	20(1)	8900 17900	29.7	3/12	20x20x2(2) 20x25x2(5) 25x25x2(2)	23.1(3)	28.7(3)	4000	73
510P	3	48.3	3/12	4/12	3/4(4)	500x500(1)	20(1)	8900 17900	29.7	3/13	20x20x2(2) 20x25x2(5) 25x25x2(2)	23.1(2) 25.4(1)	28.7(2) 30.9(1)	4300	73
570P	3	48.3	4/12	5/12	3/4(4)	500x500(1)	20(1)	8900 17900	29.7	4/10	20x20x2(2) 20x25x2(5) 25x25x2(2)	25.4(3)	30.9(3)	4400	74
640P	4	65.3	3/10	3/12	2(4)	560x560(1)	30(1)	10000 20000	33.4	4/10	20x20x2(4) 20x25x2(8)	23.1(4)	28.7(4)	5800	79
700P	4	65.3	3/10	4/12	2(4)	560x560(1)	30(1)	10000 20000	33.4	4/12	20x20x2(4) 20x25x2(8)	23.1(2) 25.4(2)	28.7(2) 30.9(2)	6100	79
760P	4	65.3	3/12	4/12	2(4)	560x560(1)	30(1)	10400 20800	34.7	4/12	20x20x2(4) 20x25x2(8)	25.4(4)	30.9(4)	6300	79
800P	5	94.0	3/12	4/12	2(4)	630x630(1)	40(1)	13500 27000	45.1	4/10	20x20x2(4) 20x25x2(9) 25x25x2(2)	23.1(5)	28.7(5)	7000	79
890P	5	94.0	4/10	5/12	2(4)	630x630(1)	40(1)	14000 28000	46.9	4/12	20x20x2(4) 20x25x2(9) 25x25x2(2)	25.4(3) 23.1(2)	30.9(3) 28.7(2)	7100	79
960P	6	94.0	4/12	5/12	2(4)	630x630(1)	40(1)	14500 29000	48.6	4/12	20x20x2(4) 20x25x2(9) 25x25x2(2)	23.1(6)	28.7(6)	7400	79
1020P	6	123.0	3/12	4/12	2(6)	710x710(1)	40(1)	16600 33300	55.6	4/10	20x20x2(12) 20x25x2(8)	23.1(4) 25.4(2)	28.7(4) 30.9(2)	9800	81
1140P	6	123.0	4/10	5/12	2(6)	710x710(1)	40(1)	19000 38300	63.9	4/10	20x25x2(20)	25.4(6)	30.9(6)	10000	81
1340P	8	129.0	4/12	5/12	2(6)	800x800(1)	50(1)	21600 43300	72.2	4/10	20x20x2(8) 20x25x2(18)	23.1(6) 25.4(2)	28.7(6) 30.9(2)	11200	81
1520P	8	129.0	4/12	5/12	2(6)	800x800(1)	50(1)	21600 43300	72.2	5/10	20x20x2(8) 20x25x2(16)	25.4(8)	30.9(8)	11500	82

Notes: 1) Evaporator blower motor for 68P to 145P is 220/240-1-50Hz and direct drive.
2) Sound Pressure Level is calculated based on nominal airflow at external static pressure of 0.5" WG (Model 30-145) / 1.5 WG (Model 160-1520), 3m (9.8ft) distance away from unit at free field. Unit supply and return are assumed to be entirely insulated. The actual sound at field could be affected by the supply and return duct break out noise.
3) Minimum-maximum voltage is 360V to 440V.

PHYSICAL SPECIFICATIONS

R407C, 60 Hz

Model 6ACPSE	Comp.	Condenser Coil			Condenser Fan Motor HP (Qty)	Evaporator Blower			Evaporator Coil		Air Filter	R410A Charge		Approx. Unit Weight lbs	Sound Pressure Level ±2 dB(A)
	Qty	Face Area ft²	Row/ FPI			Standard Size (Qty)	Mtr. Max HP	Fan Min- Max Cfm	Face Area ft²	Row/ FPI	Size Inches (Qty)	Lbs Per System (Qty)			
			Cooling Only	Heat Pump								Cooling Only	Heat Pump		
68P	1	8.3	2/12	2/12	5/8 (1)	DD9/9 (1)	1.0(1)	1400 2800	4.7	3/12	16x25x1 (1) 20x25x1 (1)	6.4(1)	9.7(1)	1100	66
81P	1	9.4	2/14	3/12	5/8 (1)	DD9/9 (2)	0.6(2)	1550 3100	5.2	3/12	16x25x1 (1) 20x25x1 (1)	6.6(1)	6.9(1)	1200	66
95P	1	10.9	2/16	3/12	5/8 (1)	DD9/9 (2)	0.6(2)	1550 3100	5.2	4/12	16x25x1(1) 20x25x1 (1)	7.5(1)	11.1(1)	1300	66
125P	1	14.2	3/14	3/12	5/8 (1)	DD9/9 (2)	1.0(2)	2000 3900	6.6	4/12	20x25x1 (2)	11.0(1)	16.9(1)	1600	67
145P	1	16.3	3/16	3/12	5/8 (1)	DD9/9 (2)	1.0(2)	2600 5100	8.5	4/12	20x25x1 (2)	16.0(1)	19.2(1)	1750	67
160P	1	19.7	2/16	3/12	5/8 (2)	15x15 (1)	4.0(1)	3500 7000	11.7	3/12	20x20x2 (2) 20x25x2 (2)	18.6(1)	22.7(1)	1700	69
190P	1	19.7	3/12	3/12	5/8 (2)	15x15 (1)	4.0(1)	3500 7000	11.7	4/12	20x20x2 (2) 20x25x2 (2)	15.2(1)	23.0(1)	1800	70
220P	1	19.7	3/16	4/12	5/8 (2)	15x15 (1)	5.5(1)	3700 7300	12.3	4/12	20x20x2 (2) 20x25x2 (2)	22.3(1)	23.4(1)	1900	69
250P	2	27.4	3/16	4/12	5/8 (2)	18x13 (1)	5.5(1)	4400 8700	14.6	4/12	25x25x2 (4)	11.3(2)	15.5(2)	2100	71
290P	2	27.4	4/16	5/12	5/8 (2)	18x13 (1)	7.5(1)	5000 10000	16.7	4/12	25x25x2 (4)	15.5(2)	21.4(2)	2400	71
320P	2	37.5	3/14	4/12	5/8 (3)	18x18 (1)	7.5(1)	5850 11600	19.4	4/12	16x25x2 (2) 20x25x2(4)	20.6(2)	26.5(2)	2900	71
380P	2	37.5	4/14	5/12	5/8 (3)	18x18 (1)	10.0(1)	6700 13400	22.6	4/12	16x20x2 (3) 20x20x2 (6)	21.2(2)	29.0(2)	3000	72
435P	2	40.0	4/16	5/12	5/8 (3)	450x450 (1)	15.0(1)	7000 14000	23.3	4/12	16x20x2 (3) 20x20x2 (6)	27.9(2)	35.9(2)	3100	72
480P	3	48.3	3/14	4/12	5/8 (4)	500x500 (1)	10.0(1)	8900 17900	29.7	3/12	20x20x2 (2) 20x25x2 (5) 25x25x2 (2)	20.0(3)	25.8(3)	4000	73
510P	3	48.3	3/16	4/12	5/8 (4)	500x500 (1)	15.0(1)	8900 17900	29.7	3/16	20x20x2 (2) 20x25x2 (5) 25x25x2 (2)	18.3(3)	24.9(3)	4300	73
570P	3	48.3	4/14	5/12	5/8 (4)	500x500 (1)	20.0(1)	8900 17900	29.7	4/14	20x20x2 (2) 20x25x2 (5) 25x25x2 (2)	17.9(2) 19.0(1)	23.2(2) 28.3(1)	4400	74
640P	3	65.3	3/12	3/12	1 1/2 (4)	560x560 (1)	15.0(1)	10000 20000	33.4	4/10	20x20x2 (4) 20x25x2 (8)	24.1(3)	30.5(3)	6500	79
700P	4	65.3	3/14	4/12	1 1/2 (4)	560x560 (1)	20.0(1)	10000 20000	33.4	4/14	20x20x2 (4) 20x25x2 (8)	38.8(2)	40.7(2)	6650	79
760P	4	65.3	4/12	4/12	1 1/2 (4)	560x560 (1)	20.0(1)	10400 20800	34.7	4/14	20x20x2 (4) 20x25x2 (8)	36.3(1) 41.3(1)	48.8(1) 55.9(1)	6750	79
800P	4	94.0	3/16	4/12	1 1/2 (4)	630x630 (1)	20.0(1)	13500 27000	45.1	4/14	20x20x2 (4) 20x25x2 (9) 25x25x2 (2)	50.2(2)	52.6(2)	7000	79
890P	5	94.0	4/14	5/12	1 1/2 (4)	630x630 (1)	20.0(1)	14000 28000	46.9	4/14	20x20x2 (4) 20x25x2 (9) 25x25x2 (2)	43.1(2) 24.0(1)	58.2(2) 32.6(1)	7100	79
960P	6	94.0	4/16	5/12	1 1/2 (4)	630x630 (1)	25.0(1)	14500 29000	48.6	4/14	20x20x2 (4) 20x25x2 (9) 25x25x2 (2)	53.6(1) 59.7(1) 29.5(1)	65.4(1) 77.8(1) 40.3(1)	7250	79
1020P	6	123.0	3/16	4/12	1 1/2 (6)	710x710 (1)	25.0(1)	16600 33300	55.6	4/12	20x20x2(12) 20x25x2 (8)	48.0(3)	61.6(3)	8350	81
1140P	6	123.0	4/14	5/12	1 1/2 (6)	710x710	25.0(1)	19000 38300	63.9	4/12	20x25x2(20)	43.0(2) 53.2(1)	59.4(2) 74.8(1)	9400	81
1340P	8	129.0	4/16	5/12	1 1/2 (6)	800x800 (1)	30.0(1)	21600 43300	72.2	4/12	20x20x2 (8) 20x25x2(16)	46.9(3) 43.0(1)	63.6(3) 59.4(1)	10400	81
1520P	8	129.0	4/16	5/12	1 1/2 (6)	800x800 (1)	40.0(1)	21600 43300	72.2	5/12	20x20x2 (8) 20x25x2(16)	46.9(3) 60.2(1)	63.6(3) 66.0(1)	11000	82

Notes: 1) Evaporator Blower motor for 6ACPSB 68P to 145P is 220/240-1-60Hz and direct drive.
2) Sound Pressure Level is calculated based on nominal airflow at external static pressure of 0.5" WG (Model 30-145) / 1.5 WG (Model 160-1520), 3m (9.8ft) distance away from unit at free field. Unit supply and return are assumed to be entirely insulated. The actual sound at field could be affected by the supply and return duct break out noise.

PHYSICAL SPECIFICATIONS

R410A, 50 Hz

Model ACPSE	Comp.	Condenser Coil			Condenser Fan Motor HP (Qty)	Evaporator Blower			Evaporator Coil		Air Filter	R410A Charge		Approx. Unit Weight lbs	Sound Pressure Level ±2 dB(A)
	Qty	Face Area ft²	Row/ FPI			Standard Size (Qty)	Motor Max HP (Qty)	Fan Min-Max Cfm	Face Area ft²	Row/ FPI	Size Inches (Qty)	Lbs Per System (Qty)			
			Cooling Only	Heat Pump								Cooling Only	Heat Pump		
68P	1	8.3	2/16	2/12	3/4(1)	10-8(1)	2.0(1)	1400 2800	4.7	3/16	16x25x1(2)	6.6(1)	6.9(1)	1100	66
81P	1	9.4	2/16	3/12	3/4(1)	10-10(1)	2.0(1)	1550 3100	5.2	3/16	16x25x1(1) 20x25x1(1)	7.5(1)	11.1(1)	1200	66
95P	1	10.9	2/16	3/12	3/4(1)	10-10(1)	3.0(1)	1550 3100	5.2	4/16	16x25x1(1) 20x25x1(1)	8.6(1)	13.2(1)	1300	66
125P	1	14.2	3/16	3/12	3/4(1)	10-10(1)	4.0(1)	2000 3900	6.6	4/16	20x25x1(2)	16.0(1)	19.2(1)	1600	67
145P	1	16.2	3/16	3/12	3/4(1)	12-9(1)	7.5(1)	2600 5100	8.5	4/16	20x25x1(2)	18.6(1)	22.7(1)	1750	67
160P	1	19.7	2/16	3/12	3/4(2)	12-9 (2)	7.5(1)	3500 7000	12.9	3/16	16x25x2(2) 16x20x2(4)	15.2(1)	23.0(1)	1700	69
190P	1	19.7	2/16	3/12	3/4(2)	12-9(2)	5.5(1)	3500 7000	12.9	4/16	16x25x2(2) 16x20x2(4)	22.3(1)	23.4(1)	1800	70
220P	2	19.7	3/14	4/12	3/4(2)	12-9(2)	10(1)	3700 7300	12.9	4/16	16x25x2(2) 16x20x2(4)	11.3(2)	15.5(2)	1900	69
250P	2	27.4	3/16	4/12	3/4(2)	15-11(2)	10(1)	4400 8500	14.2	4/16	16x25x2(4) 16x20x2(2)	15.5(2)	21.4(2)	2100	71
290P	2	27.4	4/16	5/12	3/4(2)	15-11 (2)	15(1)	5000 9800	16.4	4/16	16x25x2(6)	20.6(2)	26.5(2)	2400	71
320P	2	29.8	3/14	4/12	3/4(3)	15-11(2)	15(1)	5850 10700	18.5	4/16	20x25x2(6)	21.2(2)	29.0(2)	2900	71
380P	2	37.5	4/14	5/12	3/4(3)	18x18 (1)	15(1)	6700 13400	22.6	4/12	16x20x2(3) 20x20x2(6)	27.9(2)	35.9(2)	3000	72
435P	3	40.0	4/16	5/12	3/4(3)	450x450 (1)	20(1)	7000 14000	23.3	4/12	16x20x2(3) 20x20x2(6)	20.0(3)	25.8(3)	3100	72
480P	3	48.3	3/14	4/12	3/4(4)	500x500 (1)	20(1)	8900 17900	29.7	3/12	20x20x2(2) 20x25x2(5) 25x25x2(2)	18.3(3)	24.9(3)	4000	73
510P	3	48.3	3/16	4/12	3/4(4)	500x500 (1)	20(1)	8900 17900	29.7	3/16	20x20x2(2) 20x25x2(5) 25x25x2(2)	17.9(2) 19.0(1)	23.2(2) 28.3(1)	4300	73
570P	3	48.3	4/14	5/12	3/4(4)	500x500 (1)	20(1)	8900 17900	29.7	4/14	20x20x2(2) 20x25x2(5) 25x25x2(2)	24.1(3)	30.5(3)	4400	74
640P	4	65.3	3/12	3/12	2(4)	560x560 (1)	30(1)	10000 20000	33.4	4/10	20x20x2(4) 20x25x2(8)	38.8(2)	40.7(2)	5800	79
700P	4	65.3	3/14	4/12	2(4)	560x560 (1)	30(1)	10000 20000	33.4	4/14	20x20x2(4) 20x25x2(8)	36.3(1) 41.3(1)	48.8(1) 55.9(1)	6100	79
760P	4	65.3	4/12	4/12	2(4)	560x560 (1)	30(1)	10400 20800	34.7	4/14	20x20x2(4) 20x25x2(8)	50.2(2)	52.6(2)	6300	79
800P	4	89.2	3/16 2/14	4/12	2(2) 3(2)	630x630 (1)	40(1)	13500 27000	45.1	4/14	20x20x2(4) 20x25x2(9) 25x25x2(2)	43.1(2) 24.0(1)	58.2(2) 32.6(1)	7000	79
890P	4	89.2	4/14 3/14	5/12	2(2) 3(2)	630x630 (1)	40(1)	14000 28000	46.9	4/14	20x20x2(4) 20x25x2(9) 25x25x2(2)	53.6(1) 59.7(1) 29.5(1)	65.4(1) 77.8(1) 40.3(1)	7100	79
960P	4	89.2	3/16	5/12	3(4)	630x630 (1)	40(1)	14500 29000	48.6	4/14	20x20x2(4) 20x25x2(9) 25x25x2(2)	48.0(3)	61.6(3)	7400	79
1020P	6	123.0	3/12	4/12	2(6)	710x710 (1)	40(1)	16600 33300	55.6	4/12	20x20x2(12) 20x25x2(8)	43.0(2) 53.2(1)	59.4(2) 74.8(1)	9800	81
1140P	6	123.0	4/14	5/12	2(6)	710x710 (1)	40(1)	19000 38300	63.9	4/12	20x25x2(20)	62.5(3)	80.1(3)	10000	81
1340P	6	133.8	3/16(4) 3/14(2)	5/12	2(2) 3(4)	800x800 (1)	50(1)	21600 43300	72.2	4/12	20x20x2(8) 20x25x2(16)	46.9(3) 60.2(1)	63.6(3) 66.0(1)	11200	81
1520P	6	133.8	3/16(6)	5/12	3(6)	800x800 (1)	50(1)	21600 43300	72.2	5/12	20x20x2(8) 20x25x2(16)	51.1(4)	65.1(4)	11500	82

- Notes: 1) Evaporator blower motor for 68P to 145P is 220/240-1-50Hz and direct drive.
2) Sound Pressure Level is calculated based on nominal airflow at external static pressure of 0.5" WG (Model 68-145) / 1.5 WG (Model 160-1520), 3m (9.8ft) distance away from unit at free field. Unit supply and return are assumed to be entirely insulated. The actual sound at field could be affected by the supply and return duct break out noise.
3) Minimum-maximum voltage is 380V to 440V.

PHYSICAL SPECIFICATIONS

R410A, 60 Hz

Model 6ACPSE	Comp.	Condenser Coil			Condenser Fan Motor HP (Qty)	Evaporator Blower			Evaporator Coil		Air Filter	R410A Charge		Approx. Unit Weight lbs	Sound Pressure Level ±2 dB(A)
	Qty	Face Area ft²	Row/ FPI			Standard Size (Qty)	Mtr. Max HP	Fan Min- Max Cfm	Face Area ft²	Row/ FPI	Size Inches (Qty)	Lbs Per System (Qty)			
			Cooling Only	Heat Pump								Cooling Only	Heat Pump		
68P	1	8.3	2/12	2/12	5/8 (1)	DD9/9 (1)	1.0(1)	1400 2800	4.7	3/12	16x25x1 (1) 20x25x1 (1)	6.4(1)	9.7(1)	1100	66
81P	1	9.4	2/14	3/12	5/8 (1)	DD9/9 (2)	0.6(2)	1550 3100	5.2	3/12	16x25x1 (1) 20x25x1 (1)	6.6(1)	6.9(1)	1200	66
95P	1	10.9	2/16	3/12	5/8 (1)	DD9/9 (2)	0.6(2)	1550 3100	5.2	4/12	16x25x1(1) 20x25x1 (1)	7.5(1)	11.1(1)	1300	66
125P	1	14.2	3/14	3/12	5/8 (1)	DD9/9 (2)	1.0(2)	2000 3900	6.6	4/12	20x25x1 (2)	11.0(1)	16.9(1)	1600	67
145P	1	16.3	3/16	3/12	5/8 (1)	DD9/9 (2)	1.0(2)	2600 5100	8.5	4/12	20x25x1 (2)	16.0(1)	19.2(1)	1750	67
160P	1	19.7	2/16	3/12	5/8 (2)	15x15 (1)	4.0(1)	3500 7000	11.7	3/12	20x20x2 (2) 20x25x2 (2)	18.6(1)	22.7(1)	1700	69
190P	1	19.7	3/12	3/12	5/8 (2)	15x15 (1)	4.0(1)	3500 7000	11.7	4/12	20x20x2 (2) 20x25x2 (2)	15.2(1)	23.0(1)	1800	70
220P	1	19.7	3/16	4/12	5/8 (2)	15x15 (1)	5.5(1)	3700 7300	12.3	4/12	20x20x2 (2) 20x25x2 (2)	22.3(1)	23.4(1)	1900	69
250P	2	27.4	3/16	4/12	5/8 (2)	18x13 (1)	5.5(1)	4400 8700	14.6	4/12	25x25x2 (4)	11.3(2)	15.5(2)	2100	71
290P	2	27.4	4/16	5/12	5/8 (2)	18x13 (1)	7.5(1)	5000 10000	16.7	4/12	25x25x2 (4)	15.5(2)	21.4(2)	2400	71
320P	2	37.5	3/14	4/12	5/8 (3)	18x18 (1)	7.5(1)	5850 11600	19.4	4/12	16x25x2 (2) 20x25x2(4)	20.6(2)	26.5(2)	2900	71
380P	2	37.5	4/14	5/12	5/8 (3)	18x18 (1)	10.0(1)	6700 13400	22.6	4/12	16x20x2 (3) 20x20x2 (6)	21.2(2)	29.0(2)	3000	72
435P	2	40.0	4/16	5/12	5/8 (3)	450x450 (1)	15.0(1)	7000 14000	23.3	4/12	16x20x2 (3) 20x20x2 (6)	27.9(2)	35.9(2)	3100	72
480P	3	48.3	3/14	4/12	5/8 (4)	500x500 (1)	10.0(1)	8900 17900	29.7	3/12	20x20x2 (2) 20x25x2 (5) 25x25x2 (2)	20.0(3)	25.8(3)	4000	73
510P	3	48.3	3/16	4/12	5/8 (4)	500x500 (1)	15.0(1)	8900 17900	29.7	3/16	20x20x2 (2) 20x25x2 (5) 25x25x2 (2)	18.3(3)	24.9(3)	4300	73
570P	3	48.3	4/14	5/12	5/8 (4)	500x500 (1)	20.0(1)	8900 17900	29.7	4/14	20x20x2 (2) 20x25x2 (5) 25x25x2 (2)	17.9(2) 19.0(1)	23.2(2) 28.3(1)	4400	74
640P	3	65.3	3/12	3/12	1 1/2 (4)	560x560 (1)	15.0(1)	10000 20000	33.4	4/10	20x20x2 (4) 20x25x2 (8)	24.1(3)	30.5(3)	6500	79
700P	4	65.3	3/14	4/12	1 1/2 (4)	560x560 (1)	20.0(1)	10000 20000	33.4	4/14	20x20x2 (4) 20x25x2 (8)	38.8(2)	40.7(2)	6650	79
760P	4	65.3	4/12	4/12	1 1/2 (4)	560x560 (1)	20.0(1)	10400 20800	34.7	4/14	20x20x2 (4) 20x25x2 (8)	36.3(1) 41.3(1)	48.8(1) 55.9(1)	6750	79
800P	4	94.0	3/16	4/12	1 1/2 (4)	630x630 (1)	20.0(1)	13500 27000	45.1	4/14	20x20x2 (4) 20x25x2 (9) 25x25x2 (2)	50.2(2)	52.6(2)	7000	79
890P	5	94.0	4/14	5/12	1 1/2 (4)	630x630 (1)	20.0(1)	14000 28000	46.9	4/14	20x20x2 (4) 20x25x2 (9) 25x25x2 (2)	43.1(2) 24.0(1)	58.2(2) 32.6(1)	7100	79
960P	6	94.0	4/16	5/12	1 1/2 (4)	630x630 (1)	25.0(1)	14500 29000	48.6	4/14	20x20x2 (4) 20x25x2 (9) 25x25x2 (2)	53.6(1) 59.7(1) 29.5(1)	65.4(1) 77.8(1) 40.3(1)	7250	79
1020P	6	123.0	3/16	4/12	1 1/2 (6)	710x710 (1)	25.0(1)	16600 33300	55.6	4/12	20x20x2(12) 20x25x2 (8)	48.0(3)	61.6(3)	8350	81
1140P	6	123.0	4/14	5/12	1 1/2 (6)	710x710	25.0(1)	19000 38300	63.9	4/12	20x25x2(20)	43.0(2) 53.2(1)	59.4(2) 74.8(1)	9400	81
1340P	8	129.0	4/16	5/12	1 1/2 (6)	800x800 (1)	30.0(1)	21600 43300	72.2	4/12	20x20x2 (8) 20x25x2(16)	46.9(3) 43.0(1)	63.6(3) 59.4(1)	10400	81
1520P	8	129.0	4/16	5/12	1 1/2 (6)	800x800 (1)	40.0(1)	21600 43300	72.2	5/12	20x20x2 (8) 20x25x2(16)	46.9(3) 60.2(1)	63.6(3) 66.0(1)	11000	82

Notes: 1) Evaporator Blower motor for 6ACPSE 68P to 6ACPSE 145P is 220/240-1-60Hz and direct drive.

2) Sound Pressure Level is calculated based on nominal airflow at external static pressure of 0.5" WG (Model 40-145) / 1.5 WG (Model 160-1520), 3m (9.8ft) distance away from unit at free field. Unit supply and return are assumed to be entirely insulated. The actual sound at field could be affected by the supply and return duct break out noise.

PHYSICAL SPECIFICATIONS

Compact Series (R407C, 50 Hz Only)

Model ACPSB	Comp.	Condenser Coil		Cond. Fan Motor HP (Qty)	Evaporator Blower			Evaporator Coil		Air Filter	Charge Lbs Per System (Qty)
	Qty	Face Area ft²	Row / FPI		Standard Size (Qty)	Motor Max HP (Qty)	Fan Min- Max Cfm	Face Area ft²	Row / FPI	Size Inches (Qty)	
			Cooling Only								Cooling Only
68P	1	8.3	2/16	3/4(1)	10-8(1)	2.0(1)	1400 2800	4.7	3/16	16x25x1(2)	7.5(1)
81P	1	9.4	2/16	3/4(1)	10-10(1)	2.0(1)	1550 3100	5.2	3/16	16x25x1(1) 20x25x1(1)	9.9(1)
95P	1	10.9	2/16	3/4(1)	10-10(1)	3.0(1)	1550 3100	5.2	4/16	16x25x1(1) 20x25x1(1)	12.1(1)
125P	1	14.2	3/16	3/4(1)	10-10(1)	4.0(1)	2000 3900	6.6	4/16	20x25x1(2)	13.2(1)
145P	1	16.2	3/16	3/4(1)	12-9(1)	7.5(1)	2600 5100	8.5	4/16	20x25x1(2)	15.4(1)
160P	1	19.7	2/16	3/4(2)	12-9 (2)	7.5(1)	3500 7000	12.9	3/16	16x25x2(2) 16x20x2(4)	23.1(1)
190P	1	19.7	2/16	3/4(2)	12-9(2)	7.5(1)	3500 7000	12.9	4/16	16x25x2(2) 16x20x2(4)	25.4(1)
220P	2	19.7	3/14	3/4(2)	12-9(2)	10(1)	3700 7300	12.9	4/16	16x25x2(2) 16x20x2(4)	13.2(2)
250P	2	27.4	3/16	3/4(2)	15-11(2)	10(1)	4400 8500	14.2	4/16	16x25x2(4) 16x20x2(2)	13.2(2)
290P	2	27.4	4/16	3/4(2)	15-11 (2)	15(1)	5000 9800	16.4	4/16	16x25x2(6)	15.4(2)
320P	2	29.8	3/14	2(2)	15-11(2)	15(1)	5850 10700	18.5	4/16	20x25x2(6)	23.1(2)

Notes: 1) Sound Pressure Level is calculated based on nominal airflow at external static pressure of 0.5" WG (Model 68-145) / 1.5 WG (Model 160-320), 3m (9.8ft) distance away from unit at free field. Unit supply and return are assumed to be entirely insulated. The actual sound at field could be affected by the supply and return duct break out noise.
2) Minimum-maximum voltage is 360V to 440V.

BLOWER PERFORMANCE

EVAPORATOR

Model ACPSB/E	Airflow on Evaporator		Blower Size Standard (Qty)		External Static Pressure - in WG [Pa]							
					0.5 [125]		1.0 [249]		1.5 [374]		2.0 [498]	
	CFM	m ³ /h	50 Hz	60 Hz	RPM	Motor Hp (Qty)	RPM	Motor Hp (Qty)	RPM	Motor Hp	RPM	Motor Hp
68P	2,000	3,398	270-270 (1)	DD 9/9	1,200	750W	Not Applicable		Not Applicable		Not Applicable	
81P	2,400	4,078	270-270 (1)	DD 9/9 (2)	1,250	750W						
95P	2,600	4,417	270-270 (1)	DD 9/9 (2)	1,300	750W						
125P	3,500	5,947	270-270 (2)	DD 9/9 (2)	1,300	600W (2)						
145P	4,000	6,796	270-270 (2)	DD 9/9 (2)	1,200	750W (2)	1,400*	750W (2)*				
160P	4,600	7,815	15-15	15x15			861	3.0	987	3.0	1,102	4.0
190P	4,800	8,155	15-15	15x15			888	3.0	1,010	4.0	1,122	4.0
220P	5,400	9,175	15-15	15x15			919	4.0	1,033	4.0	1,140	5.5
250P	6,400	10,874	18-13	18x13			767	4.0	849	5.5	934	5.5
290P	7,500	12,743	18-13	18x13			791	5.5	873	7.5	945	7.5
320P	8,000	13,592	18-18	18x18			753	5.5	848	7.5	931	7.5
380P	9,200	15,631	18-18	18x18			771	7.5	858	7.5	942	10.0
435P	11,500	19,539	450	450x450			790	10.0	865	10.0	935	15.0
480P	12,000	20,388	500	500x500			686	7.5	768	10.0	843	10.0
510P	14,000	23,786	500	500x500			761	15.0	832	15.0	901	15.0
570P	15,000	25,485	500	500x500			791	15.0	858	15.0	924	20.0
640P	16,000	27,184	560	560x560			640	10.0	706	15.0	769	15.0
700P	17,200	29,223	560	560x560			690	15.0	752	15.0	811	20.0
760P	18,000	30,582	560	560x560			710	15.0	770	20.0	827	20.0
800P	19,600	33,301	630	630x630			587	15.0	648	20.0	705	20.0
890P	21,000	35,679	630	630x630			609	20.0	666	20.0	721	20.0
960P	23,000	39,077	630	630x630			630	20.0	677	25.0	729	25.0
1020P	25,800	43,834	710	710x710			526	20.0	575	20.0	622	25.0
1140P	26,400	44,854	710	710x710			518	20.0	568	20.0	615	25.0
1340P	32,000	54,368	800	800x800			430	25.0	484	25.0	527	30.0
1520P	36,000	61,164	800	800x800			470	30.0	517	40.0	558	40.0

Notes: 1) Direct driven fan for model 68 to 145. Motor power in Watt.
2) Please consult factory for areas shaded in grey and ESP exceeds the above table.
3) * Applicable to 50Hz only.

LIMITS AND CORRECTION FACTORS

OPERATING LIMITS

LIMITATION (AIR TEMPERATURE °F[°C])

		DB	WB
Indoor	Max.	95 [35] Cooling Mode 80 [27] Heating Mode	72 [22]
	Min.	70 [21]	57 [14]
Outdoor	Max.	115 [46] (Cooling Mode) 75 [24] (Heating Mode for Heat Pump Model)	61 [16] Heating Mode
	Min.	70 [21] (Standard) 50 [10] (With Low Ambient Kit) 15 [-9] Heat Pump	-

CORRECTION FACTORS

To correct for variation in air flow, use this multiplier

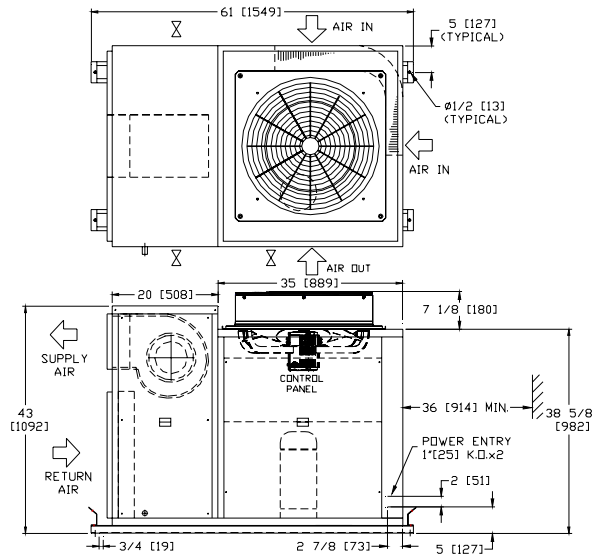
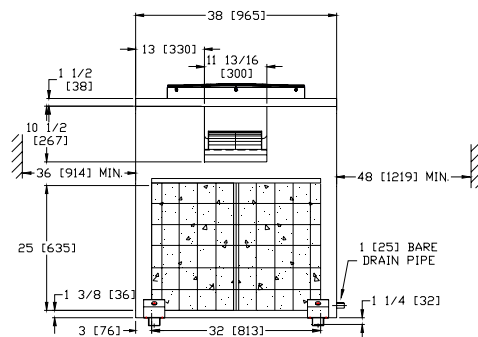
Air Flow Variation	Total Capacity	Sensible Capacity
0.9	0.980	0.950
1.0	1.000	1.000
1.1	1.015	1.045

To correct for altitude, use this multiplier

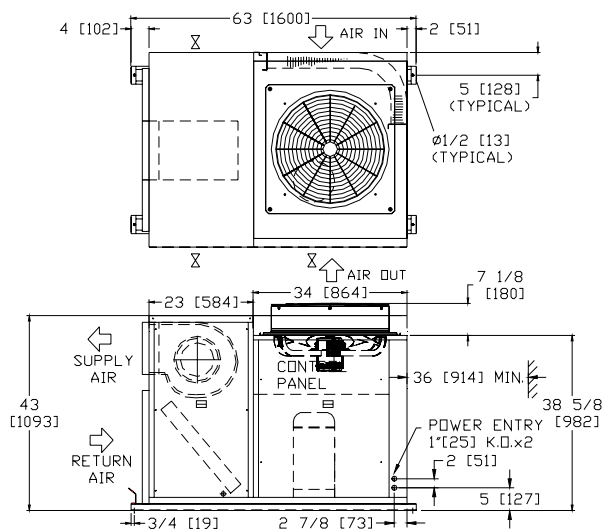
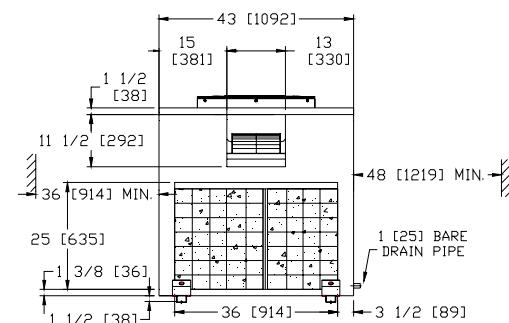
Air Above Sea Level - ft	Cooling Capacity
0	1.00
2000	0.98
3000	0.97
4000	0.96
5000	0.95
6000	0.93

DIMENSIONAL DATA

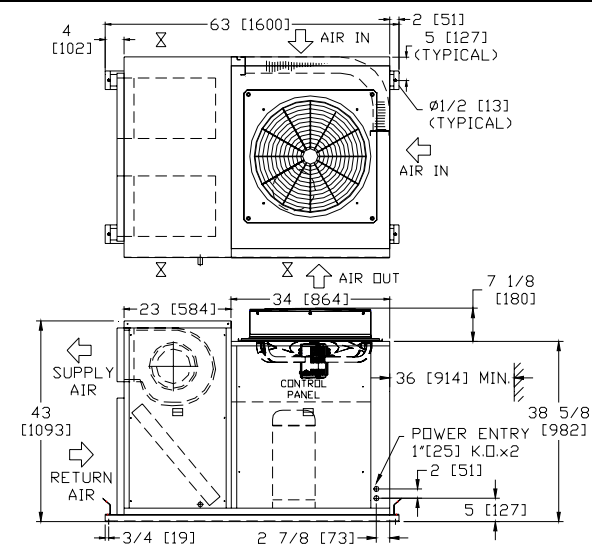
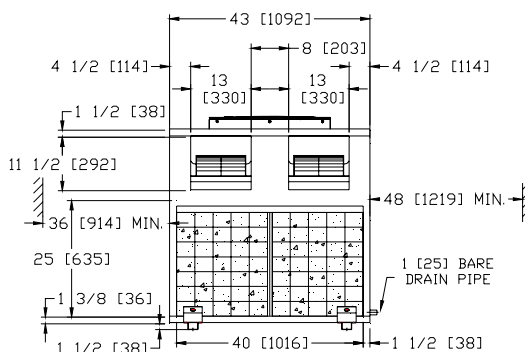
50Hz: ACPSB/E 68P
60Hz: 6ACPSB/E 68P



50Hz: ACPSB/E 81P, 95P
60Hz: 6ACPSB/E 81P, 95P

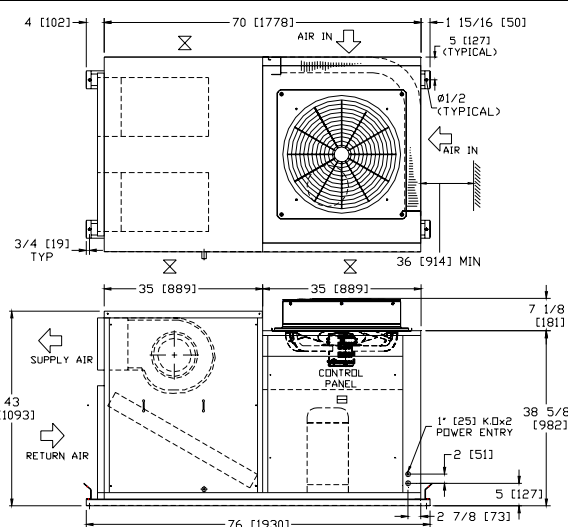
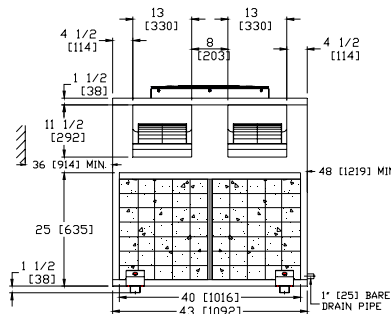


50Hz: ACPSB/E 125P
60Hz: 6ACPSB/E 125P



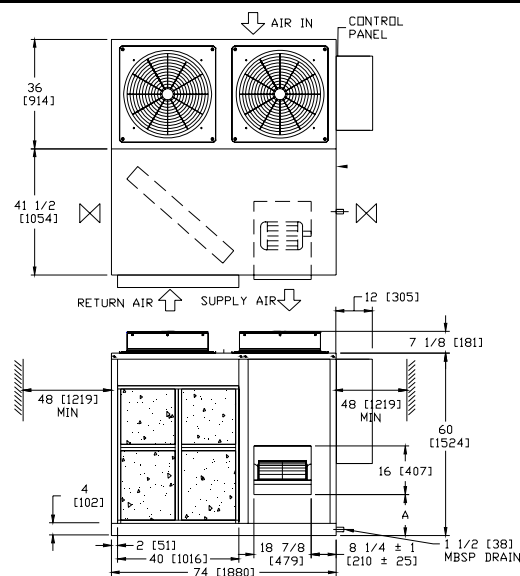
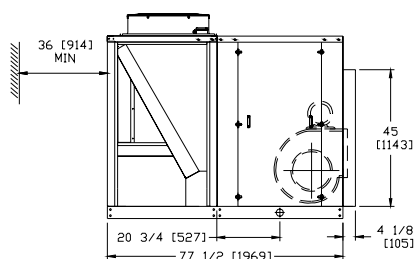
Note: All dimensions are in inches [mm].

50Hz: ACPSB/E 145P
60Hz: 6ACPSB/E 145P



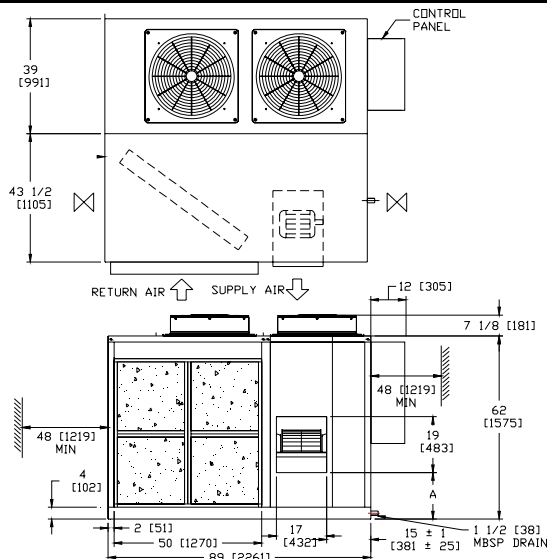
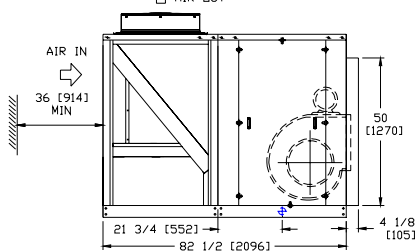
MODEL	A	
	STANDARD (WITHOUT ISOLATOR)	RUBBER GROMMET ISOLATOR
160P	13 1/2 ± 1 [343 ± 25]	16 1/2 ± 1 [419 ± 25]
190P	13 1/2 ± 1 [343 ± 25]	16 1/2 ± 1 [419 ± 25]
220P	13 1/2 ± 1 [343 ± 25]	16 1/2 ± 1 [419 ± 25]

↑ AIR OUT



MODEL	A	
	STANDARD (WITHOUT ISOLATOR)	RUBBER GROMMET ISOLATOR
250P	15 3/4 ± 1 [400 ± 25]	18 3/4 ± 1 [476 ± 25]
290P	15 3/4 ± 1 [400 ± 25]	18 3/4 ± 1 [476 ± 25]

↑ AIR OUT



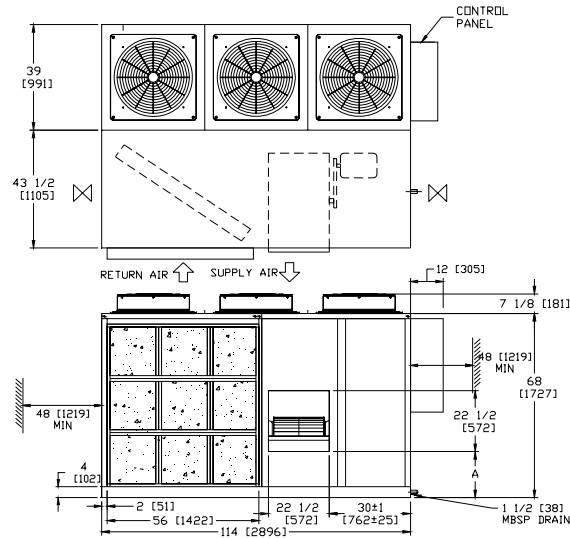
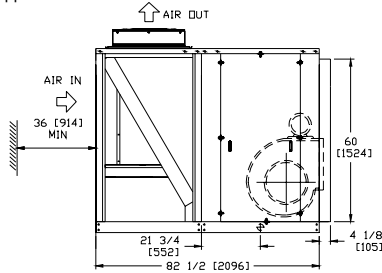
- 12 -

DIMENSIONAL DATA

50Hz: ACPSB/E 320P, 380P, 435P 60Hz: 6ACPSB/E 320P, 380P, 435P

MODEL	A	
	STANDARD (WITHOUT ISOLATOR)	RUBBER GROMMET ISOLATOR
320P	17 3/4 ± 1 [432 ± 25]	18 3/4 ± 1 [476 ± 25]
380P	17 3/4 ± 1 [432 ± 25]	18 3/4 ± 1 [476 ± 25]
435P	17 ± 1 [432 ± 25]	18 ± 1 [457 ± 25]

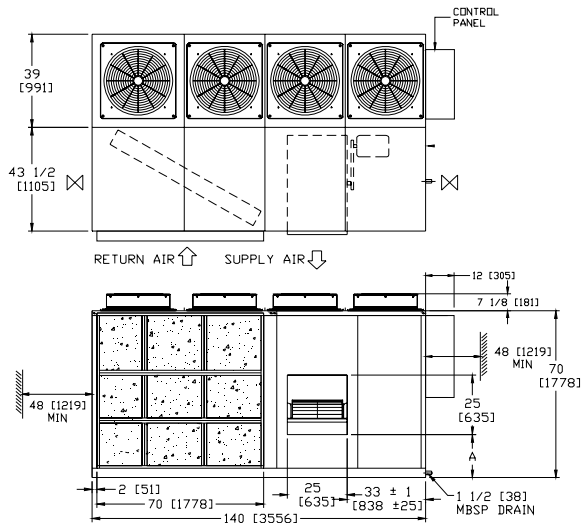
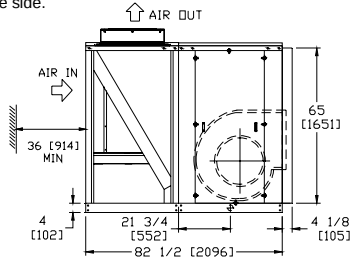
Note: Control box location shown on the drawing is for heat pump unit, for cooling only unit the control panel is at the opposite side.



50Hz: ACPSB/E 480P, 510P, 570P 60Hz: 6ACPSB/E 480P, 510P, 570P

ISOLATOR TYPE	DIM A
STD (WITHOUT ISOLATOR)	18 ± 1 [457 ± 25]
RUBBER GROMMET ISOLATOR	19 ± 1 [483 ± 25]

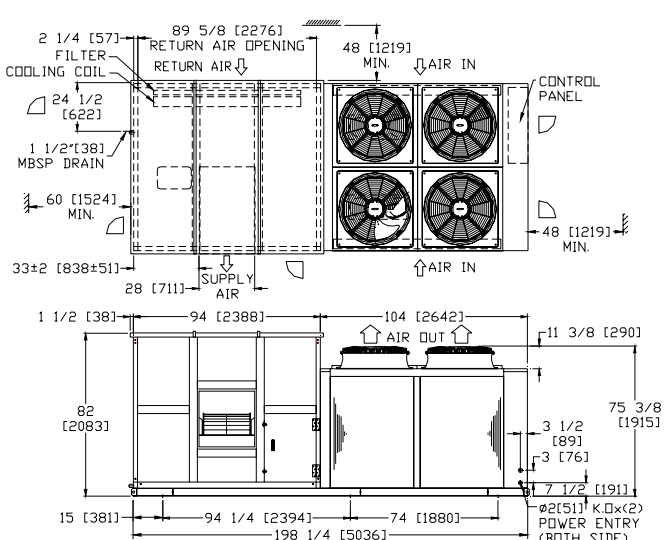
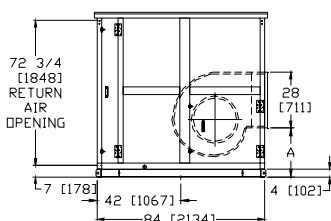
Note: Control box location shown on the drawing is for heat pump unit, for cooling only unit the control panel is at the opposite side.



50Hz: ACPSB/E 640P, 700P, 760P 60Hz: 6ACPSB/E 640P, 700P, 760P

ISOLATOR TYPE	DIM A	
	MOTOR <40HP	MOTOR >50HP
STD (WITHOUT ISOLATOR)	23 3/4 ± 2 [603 ± 51]	24 1/4 ± 2 [616 ± 51]
RUBBER GROMMET ISOLATOR	24 3/4 ± 2 [629 ± 51]	25 1/4 ± 2 [642 ± 51]

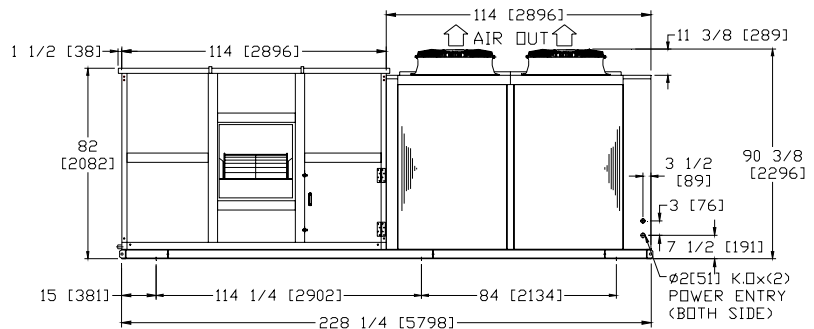
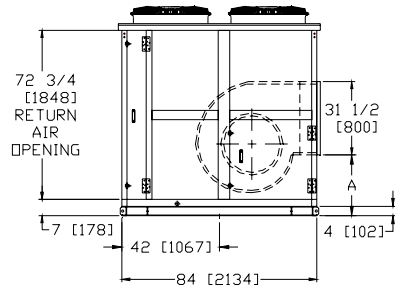
Note: Control box location shown on the drawing is for heat pump unit, for cooling only unit the control panel is at the opposite side.



Note: All dimensions are in inches [mm].

50Hz: ACPSB 800P, 890P, 960P
60Hz: 6ACPSB 800P, 890P, 960P

DIM A		
ISOLATOR TYPE	MOTOR ≤ 40 HP	MOTOR ≥ 50 HP
STD (WITHOUT ISOLATOR)	25 1/4 $\pm$ 2 [641 $\pm$ 51]	25 3/4 $\pm$ 2 [654 $\pm$ 51]
RUBBER GROMMET ISOLATOR	26 1/4 $\pm$ 2 [667 $\pm$ 51]	26 3/4 $\pm$ 2 [680 $\pm$ 51]



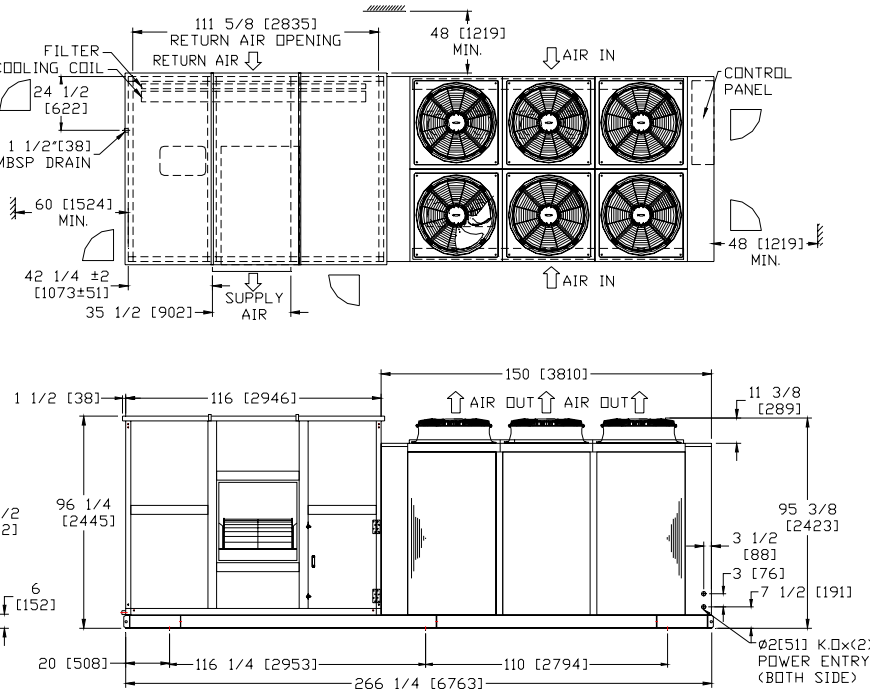
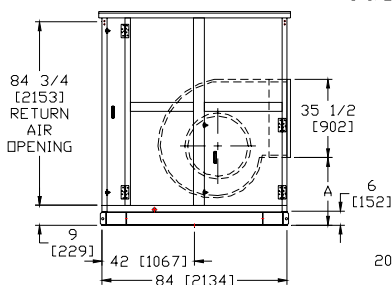
50Hz: ACPSB/E 1020P
60Hz: 6ACPSB/E 1020P

The technical drawings show the KJ-2000 series air conditioning unit from two perspectives: a top view and a side view. The top view includes a table of dimensions for different motor types and a detailed layout of the unit's components.

ISOLATOR TYPE	DIM A	
	MOTOR <40HP	MOTOR ≥50HP
STD (WITHOUT ISOLATOR)	29 1/4 ± 2 [743±51]	29 3/4 ± 2 [756±51]
RUBBER GROMMET ISOLATOR	30 1/4 ± 2 [768±51]	30 3/4 ± 2 [781±51]

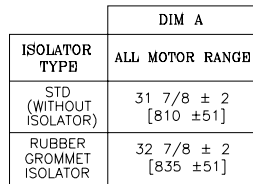
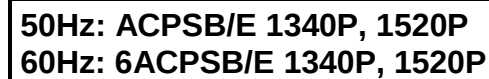
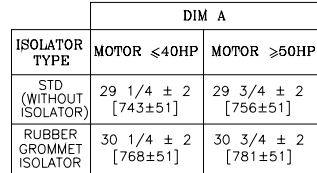
The top view drawing shows the unit's layout with dimensions in inches and millimeters. Key components and dimensions include:

- Top View Dimensions:**
 - Overall width: 111 5/8 [2835]
 - Overall height: 48 [1219] MIN.
 - Return Air Opening: 111 5/8 [2835]
 - Supply Air: 35 1/2 [902]
 - Filter Cooling Coil: 24 1/2 [622]
 - MBS DP Drain: 1 1/2 [38]
 - Control Panel: 48 [1219] MIN.
 - Supply Air: 42 1/4 ± 2 [1073±51]
 - Return Air: 60 [1524] MIN.
- Side View Dimensions:**
 - Overall width: 150 [3810]
 - Overall height: 95 3/8 [2423]
 - Return Air Opening: 84 3/4 [2153]
 - Supply Air: 116 [2946]
 - Filter Cooling Coil: 35 1/2 [902]
 - MBS DP Drain: 1 1/2 [38]
 - Control Panel: 11 3/8 [289]
 - Supply Air: 96 1/4 [2445]
 - Return Air: 6 [152]
 - Supply Air: 20 [508]
 - Return Air: 116 1/4 [2953]
 - Supply Air: 110 [2794]
 - Return Air: 266 1/4 [6763]
 - Supply Air: 3 1/2 [88]
 - Return Air: 3 [76]
 - Supply Air: 7 1/2 [191]
 - Return Air: 0.2 [51] K.O. x 2 POWER ENTRY (BOTH SIDE)



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50Hz: 6ACPSB/E 1140P
60Hz: 6ACPSB/E 1140P



- 15 -

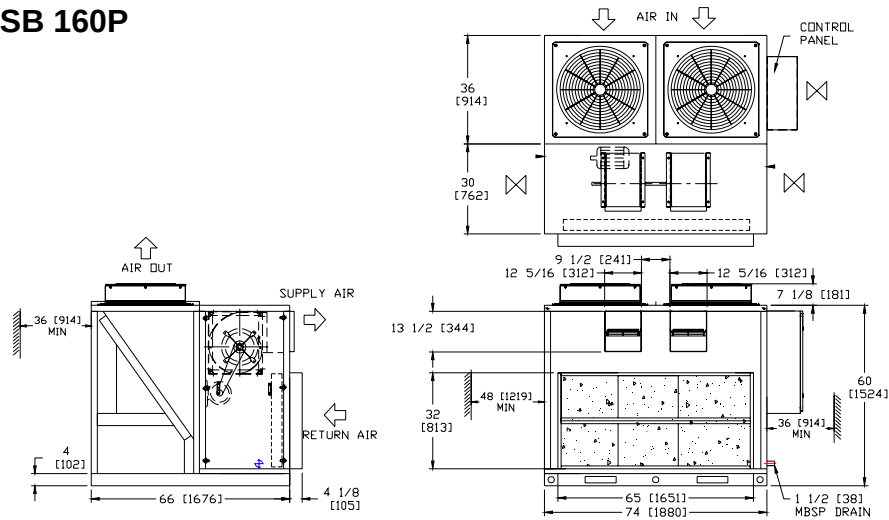
Compact Series (R407C, 50 Hz Only)

50Hz: ACPSB 125P

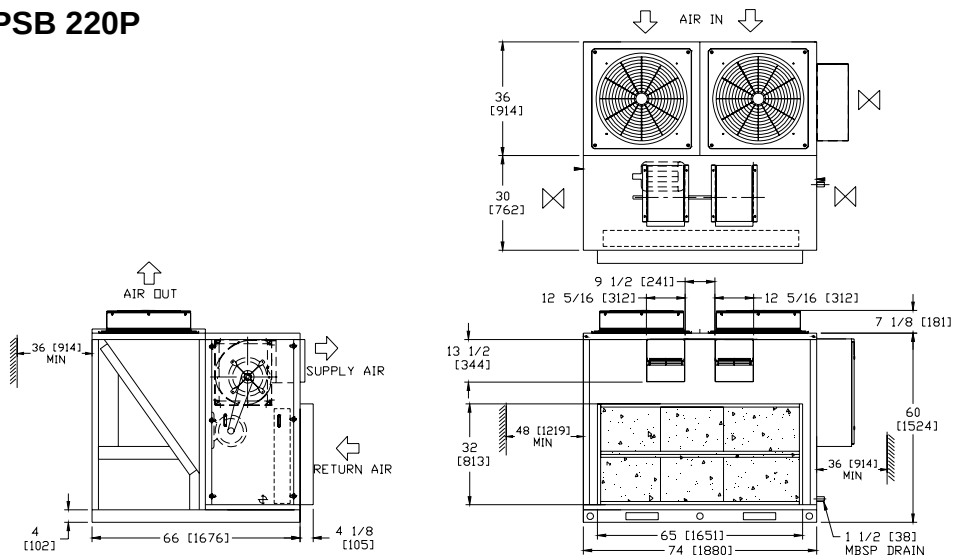
Note: All dimensions are in inches [mm].

DIMENSIONAL DATA

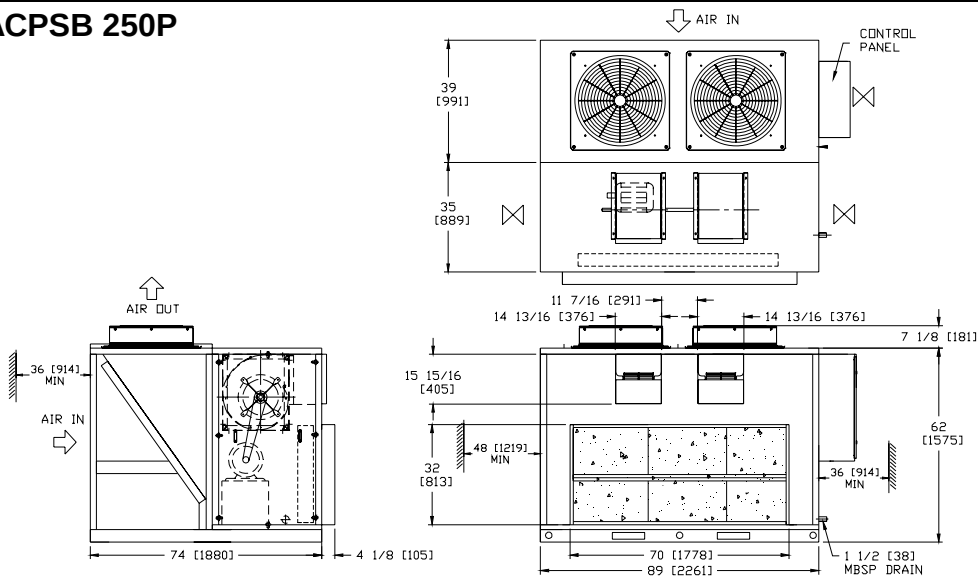
50Hz: ACPSB 160P



50Hz: ACPSB 220P



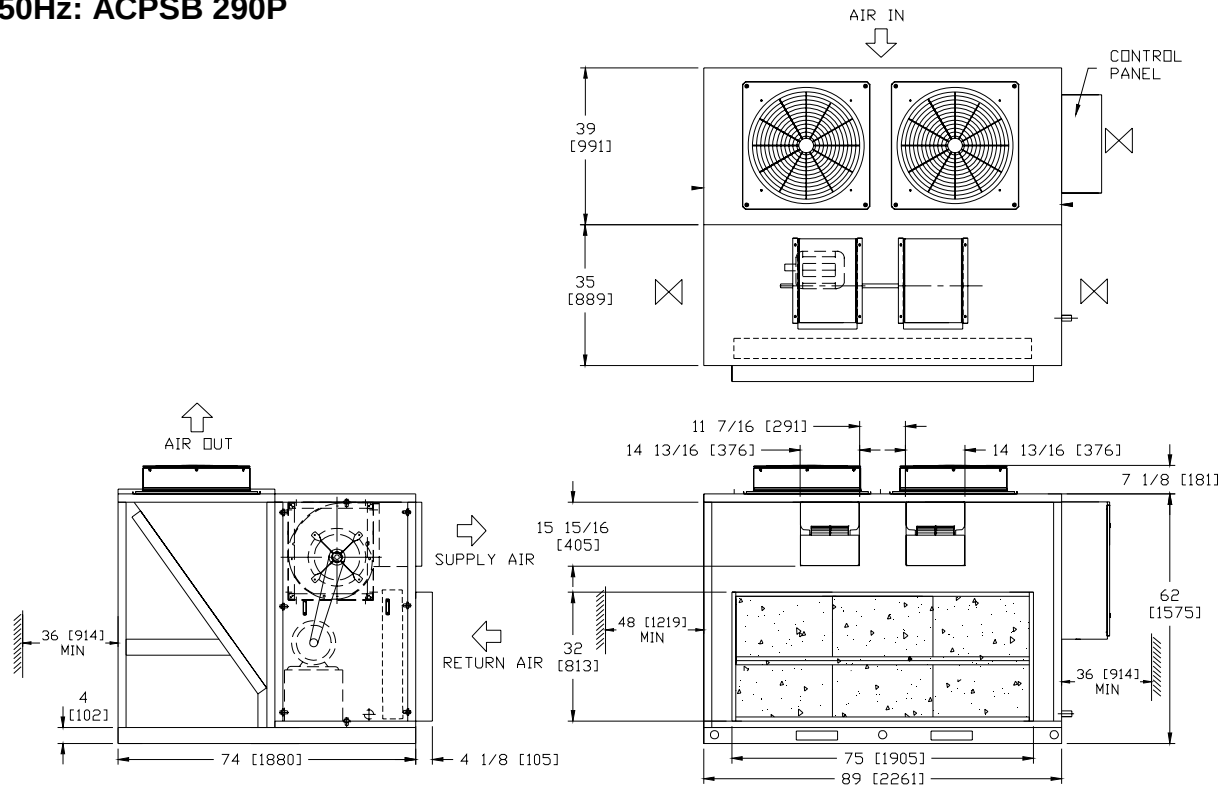
50Hz: ACPSB 250P



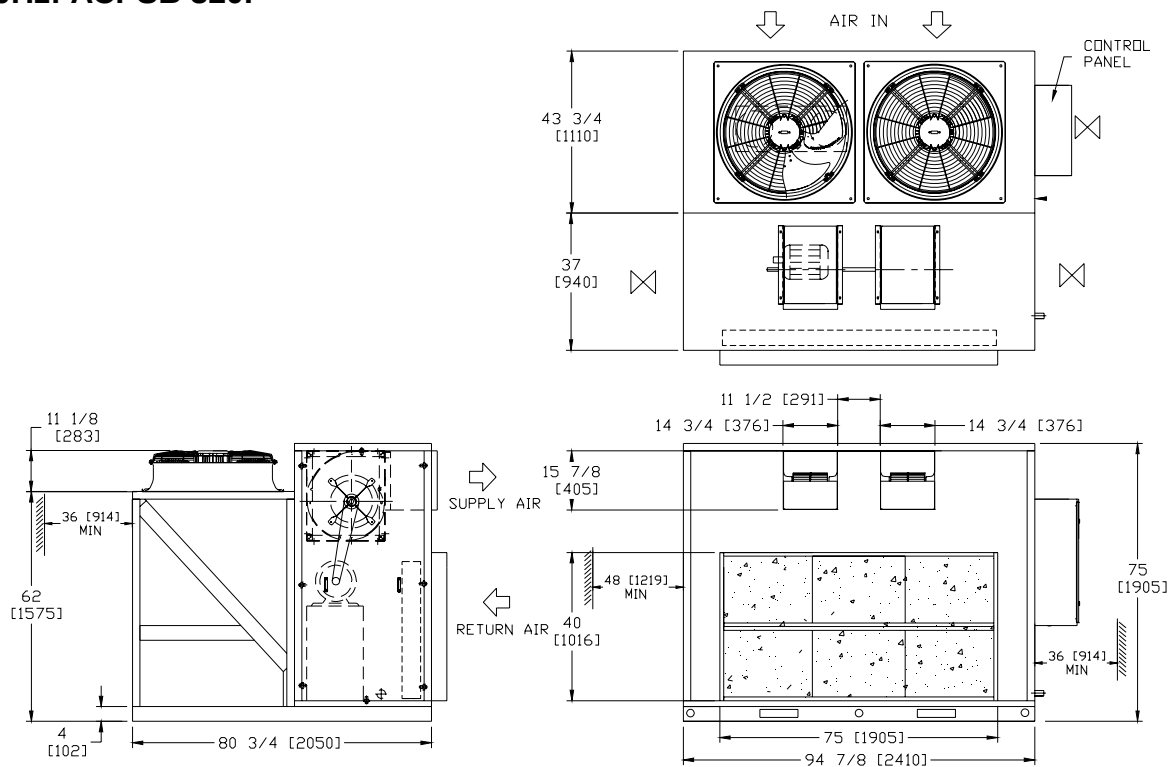
Note: All dimensions are in inches [mm].

DIMENSIONAL DATA

50Hz: ACPSB 290P



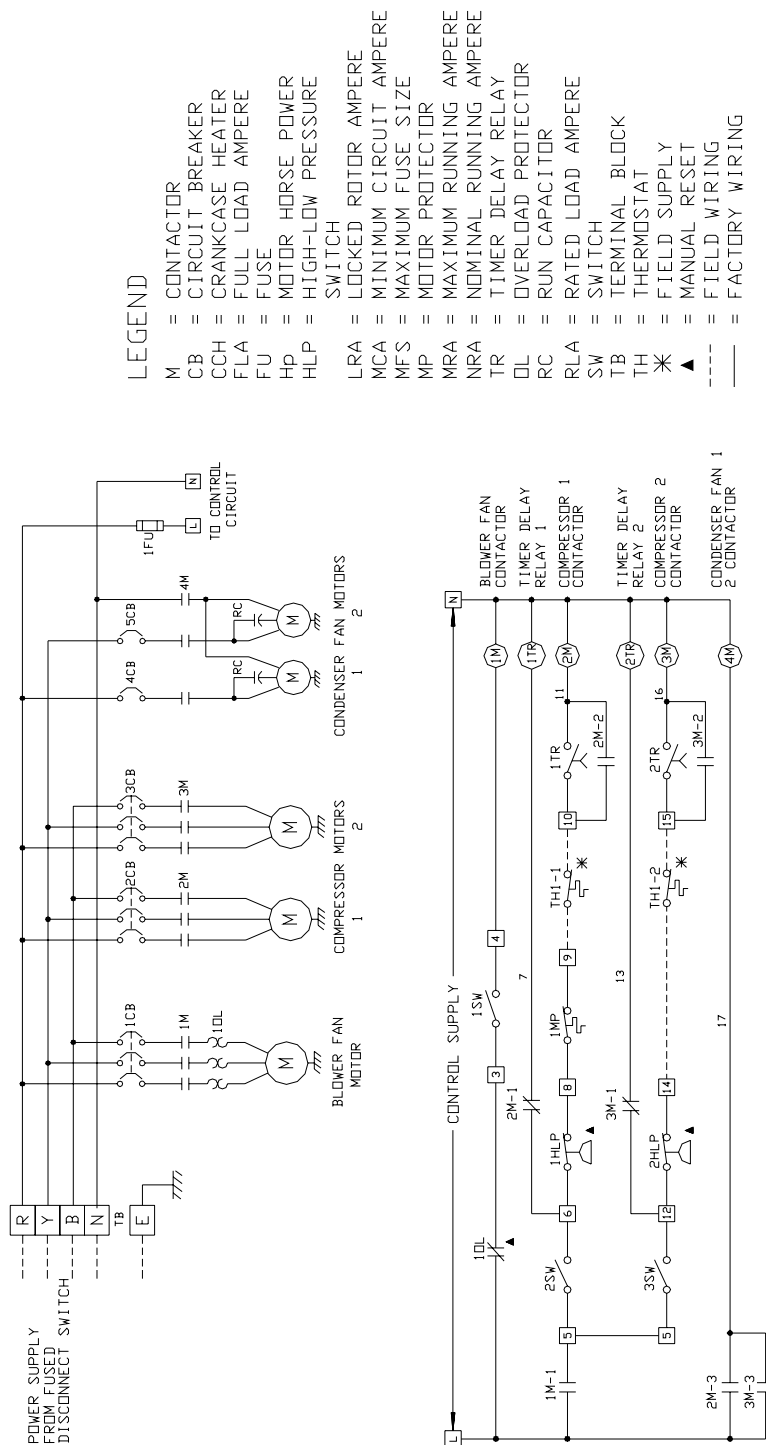
50Hz: ACPSB 320P



Note: All dimensions are in inches [mm].

TYPICAL WIRING SCHEMATIC

With IEC Direct-On-Line (DOL) Option



GUIDE SPECIFICATIONS

1 GENERAL

Air cooled packaged unit shall include compressor(s), evaporator and condenser coils with fans, refrigeration piping, electrical components and enclosing cabinet in one piece. The units shall be factory assembled, internally wired, fully refrigerant charged with R410A/R407C and are suitable for outdoor installation on ground level with ducted system. The units shall be capable to operate up to 115°F [46°C] ambient temperature without failure.

2 CABINET

The unit cabinet shall be constructed from heavy gauge galvanized steel with epoxy painted for excellent finished, weatherability and corrosion resistance up to 1000 hours salt spray test according to ASTM B-117. Evaporator section shall be of 13mm [1/2 inch] (model ACPSB/E Series 68P to 145P) and 25mm [1 inch] (model ACPSB Series 160P and above) thick single skin with 19mm [3/4 inch] closed cell Polyethylene (PE) foam insulation. The insulation shall have fire resistant of Class O (BS 476 Part 6, 7). Access doors shall be provided for easy service and maintenance of unit internal parts.

3 COMPRESSOR & REFRIGERATION PIPING

Compressor(s) shall be scroll, refrigerant gas cooled and mounted on the base via vibration isolators. 1, 2, 3 or 4 refrigeration circuits shall be piped with copper tubing and include expansion valve with external equalizer, filter dryer, sight glass, pressure fittings of manual reset high pressure control and auto reset low pressure safety cutouts as well as charging/access ports in each circuit. The compressors comply with the internationally recognized standards CE and UL.

4 EVAPORATOR COIL

Evaporator coil shall be of draw through air design for uniform air distribution. The evaporator coil shall be quality construction of staggered row of 3/8"OD (model ACPSB/E Series 68 to 570P) and 1/2"OD (model ACPSB 640 and above) seamless copper tube, mechanically bonded to aluminium fins with galvanized coil plates. The coil shall be factory leak and pressure tested to 650psig [45 bar] under water. A galvanized and painted drain pan shall be provided to cover the entire coil area. The drain pan shall be designed to incorporate sloped gutter for complete condensate removal.

5 EVAPORATOR BLOWER AND MOTOR

Evaporator blower shall be direct-driven (model ACPSB Series 68 to 145P) and belt driven (model ACPSB Series 160P and above), double-inlet-double-width (DIDW) forward curved. All blowers are statically and dynamically balanced to ensure quiet operation and smooth performance. Heavy-duty V-belt fan drive with cast iron pulleys keyed and secured to the blower shaft shall be provided (model ACPSB Series 160P and above).

Motors shall be of totally enclosed fan cooled (TEFC) with IP55 enclosure rating, 4-poles with class F insulation. Motors shall be mounted to an adjustable motor frame. Motor pulleys shall be cast iron, keyed

and secured to the motor shaft (model ACPSB Series 160P and above).

6 CONDENSER COIL

Condenser coil shall be air cooled with integral sub-cooling circuit, constructed from staggered row of 3/8"OD inner grooved seamless copper tube, mechanically bonded to aluminium fins with galvanized coil plates. The coil shall be factory leak and pressure tested to 650psig [45 bar] under water.

7 CONDENSER FAN AND MOTOR

Condenser fan shall be direct driven propeller type discharging air vertically upward. Condenser fans shall be constructed of corrosion resistant blades and are statically and dynamically balanced. Condenser fan motors shall be of totally enclosed fan cooled (TEFC) with IP55 enclosure rating, 6-poles with class F insulation and wired to unit control panel (model ACPSB 68P and above). The condenser fan assembly shall be provided with heavy gauge and rust resistant steel wire fan guard.

8 FILTERS

Units shall be provided with 1" (model ACPSB Series 68P to 145P) and 2" (model ACPSB Series 160P and above) thick washable pleated filters having average arrestance efficiency of 70% (model ACPSB Series 68P to 145P) and 75% (model ACPSB Series 160P and above) as per ASHRAE Standard 52.1 (or equivalent) with side loading.

9 CONTROL PANEL

The unit mounted control panel enclosure shall be constructed from heavy gauge galvanized steel with epoxy painted for excellent finished, weatherability and corrosion resistance. The enclosure shall conform to IP54. Hinged and lock type access door shall be provided for easy access and security. The control panel shall be wired without starter and control.

10 Crankcase Heater

Crankcase Heater shall be provided to prevent liquid refrigerant migration and condensation of refrigerant in the crankcase of the compressor when the unit is off.

11 OPTIONS

11.1 Stainless Steel Drain Pan

A stainless steel condensate drain pan shall be provided for the evaporator section in lieu of standard galvanized and painted drain pan.

11.2 Hot Gas Bypass

The refrigerant circuit (applicable to 'first in last out' refrigeration system only) shall be provided with a hot gas bypass system for low load and low ambient condition (evaporator freeze protection).

11.3 Evaporator Coil Fin Materials

In lieu of standard aluminium fin, alternative fin material and/or protective coating include,

- ✿ Hydrophilic coated aluminium fin
- ✿ Copper Fin
- ✿ Aluminium fin with **DB-Coat**
- ✿ Copper fin with **DB-Coat**

GUIDE SPECIFICATIONS

11.4 Condenser Coil Fin Materials

In lieu of standard aluminium fin, alternative fin material and/or protective coating include,

- ✳ Hydrophilic coated aluminium fin
- ✳ Copper Fin
- ✳ Aluminium fin with **DB-Coat**
- ✳ Copper fin with **DB-Coat**

11.5 Condenser Coil Guard

Powder coated wire mesh guard shall be provided for better condenser coil protection.

11.6 High and Low Pressure Gauges

Each compressor is provided with unit mounted pressure gauges to monitor high and low side operating pressure.

11.7 Discharge / Suction / Liquid Line Service Valves

Service valves shall be provided at each refrigerant lines for service convenience.

11.8 1" Double Wall Fiberglass Panel (Evaporator Section)

1" double wall Fiberglass panel shall be provided in lieu of single skin closed cell PE foam casing (model ACPSB/E Series 160P and above).

11.9 1" Double Wall Polyurethane (PU) Casing (Evaporator Section)

1" double wall polyurethane casing shall be provided in lieu of single skin closed cell Polyethylene (PE) foam casing (model ACPSB/E Series 640P and above) for superior thermal insulation.

11.10 Liquid Line Solenoid Valve (LLSV)

Factory fitted liquid line solenoid valve shall be provided for each refrigeration circuit.

11.11 Evaporator Fan Vibration Isolator

Rubber or spring isolator shall be provided to dampen vibration caused by motor and blower (model ACPSB/E Series 160P and above).

11.12 Replaceable Core Filter Drier

Replaceable filter core drier shall be provided in lieu of standard filter drier for the convenience of filter drier's core replacement.

11.13 Stainless Steel Fasteners

Stainless steel fasteners shall be provided in lieu of standard fasteners for corrosion resistance application.

11.14 Suction accumulator

Suction accumulator shall be provided to prevent liquid refrigerant migration to compressor.

11.15 C-Channel Structural Steel Base

C-channel structural steel base shall be provided in lieu of standard GI steel base for better structural support (model ACPSB/E Series 160 to 570P)

11.16 Belt Guard

Belt guard shall be provided for belt and pulley's non- contact exposure.

11.17 Electric Heater

Electric heater shall be provided for heating purpose.

11.18 Electronic Expansion Valve (EEV)

In lieu of standard thermal expansion valve, EEV shall be provided for precise superheat control (energy saving).

11.19 IEC DOL (Non UL)

The unit mounted control panel enclosure shall be constructed from heavy gauge galvanized steel with epoxy painted for excellent finished, weatherability and corrosion resistance. The enclosure shall conform to IP54. Hinged and lock type access door shall be provided for easy access and security. The control panel shall be factory wired and shall include compressor, evaporator fan motor and condenser fan motor circuit breaker and contactors, compressor and evaporator fan motor thermal overload relays, anti-recycling time delay relay, control circuit fuse, power and control circuit terminal blocks and features 230V controls with 380-415V/ 3PH/50HZ (+Neutral) power supply or 115V/230V/24V controls with 208V-230V/380/460V-3PH-60HZ power\supply.

11.20 Micro Vision Controller

Micro Vision a flexible and advance programmable microprocessor controller designed specifically for the applications and precise control of Dunham-Bush packaged units. The controller is provided with a set of terminals that connected to various devices such as temperature sensors, refrigerant pressure safety switches, solenoid valves, control relays and etc. The unit algorithm program and operating parameters are stored in flash-memory that does not require a back-up battery. For heat-pump units, Micro Vision is without data logging and auto changeover between cooling and heating modes, if require please select Vision.

11.21 Indicating Lights

Indication provided for high-pressure trip and compressor run.

11.22 UVR/Phase Failure Protect

Phase Failure Relay is provided for over voltage, under voltage and phase loss protection.

11.23 IP55 Control Panel

In lieu of standard control panel, IP55 Control Panel with double layer access door shall be design in according to IP55 standard is provided

11.24 Vision 2020i

The unit shall be provided with Vision 2020i control system with the following features,

- ✳ The control algorithm and parameters shall be stored in flash memory and EPROM of the controller and shall retain even in the event of power failures, without requiring a backup battery
- ✳ PGD Display

GUIDE SPECIFICATIONS

- ✿ Built in memory for data logging
 - ✿ Temperature and humidity controlled
 - ✿ Configurable by user
 - ✿ Alarm status/display
 - ✿ Analog input/output display
 - ✿ Digital input/output status
 - ✿ Remote start/stop input
 - ✿ Digital input for customer input alarm
 - ✿ General alarm output (dry contact)
 - ✿ Self-diagnostics
 - ✿ Security password access with multiple access level for advanced settings
 - ✿ Unit status display
- 11.25 MODBUS RS485**
MODBUS card can be added for BMS communication. VISION 2020i controller must be selected for these features.
- 11.26 Lock Out Stop**
Emergency stop switch provided for Blower Fan.
- 11.27 Differential Pressure Switch for Evaporator Blower**
Differential pressure switch provided to interlock with the control circuit.
- 11.28 Voltmeter**
Voltmeter and selector switch provided for voltage display
- 11.29 Ammeter**
Ammeter and selector switch provided for current display.
- 11.30 Anti Recycle Timer**
Additional timer is added to prevent the compressor from starting for a period of time after it stops last.
- 11.31 Electric Heater Starter**
Contactor and circuit breaker provided for electric heater.
- 11.32 Low Ambient Kit**
Fan cycling for better performance during low ambient.
- 11.33 Compressor Soft Start**
Soft-Starter for compressors to reduce the starting current.
- 11.34 Door Interlock Main Incoming Isolator**
Incoming Isolator is provided for isolate the main incoming power supply to the unit.
- 11.35 Hinged Access Door**
Hinged type access door shall be provided for model ACPSB Series 640P and above.
- 11.36 Star Delta Starter Evaporator Motor**
Star Delta starting method available for Evaporator motor.
- 11.37 Nominal Evaporator Motor Soft Starter**
Soft-Starter available to reduce the starting current for Nominal Evaporator motor.
- 11.38 Max Evaporator Motor Soft Starter**
Soft-Starter available to reduce the starting current for Maximum sized Evaporator motor.
- 11.39 VFD for Condenser Motor**
Variable Frequency Drive (VFD) on condenser fan motors (base fans) with pressure transducer added for more accurate control.
- 11.40 VFD for Evaporator Motor Nominal HP**
Variable Frequency Drive (VFD) on Nominal Evaporator motor with pressure transducer.
- 11.41 VFD for Evaporator Motor Max HP**
Variable Frequency Drive (VFD) on Maximum Evaporator motor with pressure transducer.
- 11.42 VFD Box**
Control panel to mount Variable Frequency Drive (VFD).
- 11.43 Mixing Box (consult factory for unit layout)**
This option shall include a box section which attached to the main unit and equipped with 2 air dampers (manual operated or motor operated options) for outside air intake & indoor return air intake. This will able to provide flexibility to combine outside fresh air to the system total airflow (quantities depend on the damper setting). Outside air intake damper is come with external louver for protection against rain or external elements.
- 11.44 Secondary Filter (consult factory for unit layout)**
This option shall include a box section which attached to the main unit to locate standard air filter with additional secondary filter (4" filter or 15" bag filter options). This will able to provide extra filtration to the recirculated return air collected from occupied space thus increase the level of the space air cleanliness.
- 11.45 Mixing Box with Secondary Filter (consult factory for unit layout)**
This option shall include a box section which attached to the main unit and equipped with 2 air dampers (manual operated or motor operated options) for outside air intake & indoor return air intake. This will able to provide flexibility to combine outside fresh air to the system total airflow (quantities depend on the damper setting). Outside air intake damper is come with external louver for protection against rain or external elements. Besides, it also has standard air filter with additional secondary filter (4" filter or 15" bag filter options). This will able to provide extra filtration to the mixing air directed to the occupied space thus increase the level of the space air cleanliness.
- 11.46 Hot Gas Reheat Coil (consult factory for unit layout)**
This option shall include an additional coil with the purpose to heat up the air during dehumidification. Partial portion of hot gas from discharge line will be modulated via control valve into this coil and return back to evaporator inlet pipe, after the expansion device. This option only applicable for ACPSB compact series (model 68-320).

GUIDE SPECIFICATIONS

11.47 INVERTER COMPRESSOR

Unit's first system shall be equipped with the high efficiency R410A inverter compressor whilst fixed speed compressor(s)

for the rest of the system(s). All compressors shall be scroll, hermetically sealed, refrigerant gas cooled, quiet running

and supported on rubber mounts to minimize vibration.

The inverter compressor motor shall be a permanent magnet type and matched with a specially designed, variable frequency drive which modulates the speed of the compressor protection functions.

The inverter compressor shall include EEV while TXV with external equalizer for other fixed speed compressor(s).

11.48 EC EVAPORATOR FAN

The unit shall be equipped with high efficiency, Electronically Commutated (EC) motor fan

for evaporator section. Fan speed can be modulated using 0-10VDC control signal from controller.

This is best for precise air flow control application, building pressure control and energy saving purpose.



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