ModPac™ II 1 to 5-Ton Vertical Wall Mount Air Conditioners

Models AVPA12-20-24-30-36-42-48-60

General Description

The Marvair® ModPac™ II air conditioner is a vertical, wall mounted, cost effective air conditioner designed for a variety of building types and applications. The unit is manufactured in eight sizes from 1 to 5 tons. Electric heat may be field or factory installed. Disconnects are standard on all units including the 460v. models. Accessories include a full range of grilles and thermostats. Cabinet color choices include standard Marvair beige and grey as well as other options. A Marvair first, the built-in mounting flanges simplifies installation. The sloped top, another Marvair original, eliminates the need for a rainhood.

Outside Air for Ventilation or Free Cooling

A full range of accessories and options allows the ModPac air conditioners to be optimized for each application. For classrooms, a complete range of ventilation options are available to meet the fresh air requirements of the ASHRAE 62 standard.

To insure proper operation and optimum performance, all outside air ventilation packages are non-removable and factory installed.



Dehumidification

The introduction of outside air can cause humidity levels to rise to unacceptable levels. To reduce humidity, ModPac air conditioners can be ordered with electric resistance reheat.



Safety Listed & Energy Certified

All ModPac air conditioners are built to UL standard 1995, 4th edition and CAN/CSA C22.2, No. 236-11. For energy efficiency and performance, the units are tested and rated in accordance to the ANSI/ARI (Air-Conditioning and Refrigeration Institute) Standard 390- 2003 (Single Package Vertical Units). All AVPA units meet or exceed the efficiency requirements of ANSI/ASHRAE/IESNA 90.1.2007. The ModPac air conditioners are commercial units and are not intended for use in residential applications.



Standard Features

Ease of Installation

- Factory installed disconnect may eliminate need of outside disconnect.
- Built-in mounting flanges eliminate need for side brackets.
- Sloped top sheds water and minimizes chance of water leaks.
- Designed for installation in a modular builder's facility.
- Single Point Power Entry complies with latest edition of U.L. Standard 1995.

Attractive and Built for Long Term Operation

- Choice of colors beige (standard) or grey.
- Decorative coil guard.

• High efficiency compressors provide reliable and quiet operation.

Ease of Service

- Service access valves.
- All components accessible for field service.
- Nationwide network of service centers.

Quiet

- Twin blowers sized to accept full duct system.
- High and low refrigerant switches
- High density, foil backed insulation complies with codes that require a cleanable surface for the indoor air path.

M5 Configuration

The M5 configuration of the ModPac II air conditioner features the following as standard.

PC Board

Each ModPac air conditioner has a PC board that controls the operation of the indoor blower and the compressor while providing high refrigerant pressure and low refrigerant protection. User selectable pins and potentiometers permit multi-function control. LED's indicate operational status and fault conditions. A dedicated relay controls allows control of the two position motorized fresh air damper (Ventilation Configuration "B").

LED Indicator Lights

COLOR	TYPE	STATUS	DESCRIPTION
Green	Power	Constant On	24 VAC power has been applied
		Constant On	Normal Operation
Dod	Ctatus	1 Blink	High pressure switch has opened twice
Red	Status	2 Blinks	Low pressure switch has opened twice
		3 Blinks	Freeze stat (optional) - indoor coil temperature is below 35°F (1°C)

Modes of Operation

Normal Start-up: On a call for cooling, and the with the high pressure switch closed, the cooling system

(compressor, indoor blower motor and outdoor fan motor) will be energized. (Note: See the Delay on Make feature). The cooling system will remain energized during the three minute low pressure switch bypass cycle. If the low pressure is closed, the cooling system will continue to operate after the three-minute bypass. If the low pressure switch is open after the three-minute bypass, the cooling system will be de-energized.

<u>Lockout Mode:</u> If either the high or low pressure switch opens twice on the same call for cooling, the control board enters into and indicates the lockout mode. In the lockout mode, the compressor is turned off, the alarm output is energized and the status LED's will blink to indicate which fault has occurred. If there is a call for air flow, the indoor blower will remain energized. When the lockout condition has cleared, the unit will reset if the demand of the thermostat is removed or when power is reset. The lockout circuit is factory wired for normally open contacts. The user can select either normally closed or normally open remote alarm dry contacts.

<u>Delay on Make:</u> On initial power up or on resumption of power, the air conditioner will wait .03 to 10 minutes from a call for cooling before allowing the contactor to energize.

In addition to the PC board, the M5 configuration has high and low refrigerant pressure switches and foil backed insulation lines the indoor air path. A low ambient fan cycle control is available as an option.

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Grilles & Thermostats

Grilles

Grilles for the AVPA12

Description	Size	Marvair P/N
Double Deflection, Aluminum Supply Grille	17" x 5" (432mm x 127mm)	80682
Aluminum Return Grille	17" x 10" (432mm x 254mm)	92352
Return Filter Grille	17" x 10" (432mm x 254mm)	80683
Grilles for the AVPA20/24		
Double Deflection, Aluminum Supply Grille	20" x 8" (509mm x 203mm)	80674
Aluminum Return Grille	20" x 12" (509mm x 305mm)	80677
Return Filter Grille	20" x 12" (509mm x 305mm)	80671
Grilles for AVPA30/36		
Double Deflection, Aluminum Supply Grille	28" x 8" (711mm x 203mm)	80675
Aluminum Return Grille	28" x 14" (711mm x 356mm)	80678
Return Filter Grille	28" x 14" (711mm x 356mm	80672
Grilles for AVPA42/48/60		
Double Deflection, Aluminum Supply Grille	30" x 10" (762mm x 254mm)	80676
Aluminum Return Grille	30" x 16" (762mm x 406mm)	80679
Return Filter Grille	30" x 16" (762mm x 406mm)	80673

Note: Return filter grilles should be used when the filter in the ModPac unit is not accessible from the exterior of the building.

Thermostats

Thermostat, P/N 50121

Digital thermostat. 1 stage heat, 1 stage cool. Non-programmable. Fan switch: Auto & On. Manual changeover system switch: Cool-Off-Heat. Low temperature protection. °F or °C selectable.

Thermostat, P/N 50123

Digital thermostat. 1 stage heat, 1 stage cool. 7 day programmable. Fan switch: Auto & On. Auto-changeover. Keypad lockout. Non-volatile program memory. Title 24 compliant - no batteries needed.

Thermostat, P/N 50218

Digital, non-programmable thermostat. One stage cool/One stage heat. Manual or auto changeover. Fan mode: Auto or On. Permanent retention of settings upon power loss. Field adjustable temperature calibration. Max heat and minimum cool set points. Adjustable temperature differential. Remote sensor capable. Keypad lock out. Status LED. °F or °C selectable.

Thermostat, P/N 50246

Non-programmable, single stage heat, single stage cool. Manual changeover. Fan: Auto & On. 60 minute power back-up.

Thermostat, P/N 50289

Programmable 2-stage heat, 2-stage cool. System settings: Heat, Cool, Off, Auto-changeover. Fan Auto & ON. 3-hour override and button lockout to prevent tampering.

Thermostat Guard, P/N 50092

For use with 50121, 50123 thermostats.

Digital humidity controller. P/N 50254

To be used with units with Hot Gas or Electric reheat. Programmable dehumidistat, humidistat and ventilation control. Time of day can be set for dehumidifier, humidifier or ventilation to run. Auto-changeover for humidification or dehumidification. Permanent memory retention of set points. Humidity sensor can be field calibrated. High & low dehumidification set points. Outdoor temperature and humidity sensor included. OF or OC selectable.

Choice of Colors

Beige is standard color with grey available.

Outside Air for Ventilation

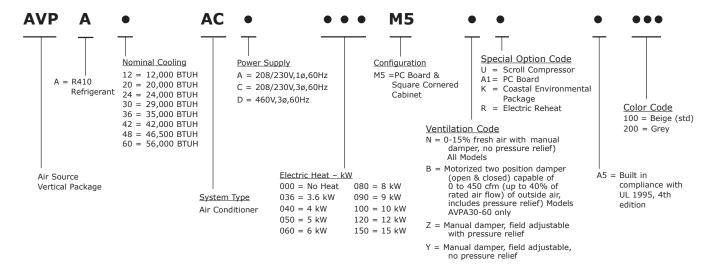
ASHRAE standard 62 requires 30 cfm of outside air per occupant of a classroom. To meet this requirement, Marvair offers a variety of ventilation packages for every budget and requirement. Note: if an air conditioner with an energy recovery ventilator (ERV) is desired, please see the GreenPac Product Data Sheet. If an air conditioner with an economizer is desired, please see the ComPac Product Data Sheet.

Outside Air Ventilation Schedule

Ventilation Package Designator*	Description	Outside Air Capability	Pressure Relief	Models
В	Motorized, two position damper (open and closed) includes pressure relief. A 24-volt actuated motor controls the damper from an external input such as a time clock, CO2 sensor, energy management system or a manual switch	Up to 450 cfm, but not to exceed 40% of the rated air flow of the air conditioner.	Yes	AVPA30-60
Z	Manual damper, field adjustable	Up to 450 cfm, but not to exceed 40% of the rated air flow of the air conditioner.	Yes	AVPA30-60
Y	Manual damper, field adjustable.	Up to 450 cfm, but not to exceed 40% of the rated air flow of the air conditioner	No	AVPA30-60
N	Manual, fixed position damper	0-15% of rated air flow	No	All Models

^{*}See Model Identification Chart

Model Identification



Dehumidification

Electric Reheat

Allows the electric heat to operate simultaneously with cooling. See Dehumidification Application Bulletin for details. Note: The electrical characteristics and requirements of air conditioners with the dehumidification option are different from standard air conditioners. Refer to the appropriate Summary Rating Charts for the electrical characteristics of units with Electric Reheat. Electric Reheat requires a dehumidistat, in addition to a thermostat, for proper operation.

Factory Installed Accessories

- Phase Monitor Monitors 3Ø power supply and will turn the air conditioner off if power supply is not phased properly. Not required on 1Ø units.
- Dirty Filter Indicator Measures the pressure across the internal filter and illuminates a LED when the pressure exceeds the specified difference. Not available on the AVPA12
- Low ambient cooling (field installed) Allows the ModPac unit to operate in the cooling mode down to 20°F (-7°C).
- Wall mount adapter for the AVPA24 To be used when upgrading from the old AVP24 or AVPA24 cabinet with the chamfered corners to the new AVPA24 M5 cabinet. p/n K/03955

Special Application Packages and Coil Coatings

Coastal Environmental Package - Recommended for units to be installed near an ocean. Includes corrosion resistant fasteners, sealed or partially sealed condenser fan motor, protective coating applied to all exposed internal copper and metal in the condenser section and a protective coating on the condenser coil. See Coastal Environmental Technical Bulletin for more details. Note the AVPA12 does not have a sealed condenser fan motor.

Protective Coil Coatings - Either the condenser or evaporator coil can be coated; however, coating of the evaporator coil is not common. For harsh conditions, e.g., power plants, paper mills or sites were the unit will be exposed to salt water; the coil should be coated with an impregnated polyurethane coating. The coatings are sprayed on and pass 3,000 hours of B117 salt fog test. Note: Cooling capacity may be reduced by up to 5% on units with coated coils.

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Certified Efficiency and Capacity Ratings at ANSI/AHRI Standard 390 - AVPA Air Conditioners



Model Number	AVPA12	AVPA20	-	VPA2	24	Α	VPA3	0	A	VPA3	6	А	VPA4	2	A	VPA4	8	A۱	VPA6	0
Model Number	ACA	ACA	ACA	ACC	ACD	ACA	ACC	ACD												
Cooling BTUH ¹	10,800	19,600		24,000)		29,000)	(35,000)		12,000)	4	16,000)	5	4,500	
EER ²	9.00	9.00		9.25			9.25			9.25			9.25			9.50			9.25	
Rated Air Flow (CFM ³)	400	735		840			1,000			1,100			1,575			1,725		•	1,850	

¹Cooling rated at 95°F (35°C) outdoor and 80°F DB/67° WB (26.5°C DB/19.5°C WB) return air.

Sensible Total Heat Ratio @ 95°F (35°C) **Outside Air Dry Bulb - AVPA Air Conditioners**

Model Number	AVPA12	AVPA20	Α	VPA2	4	A	VPA3	0	А	VPA3	6	А	VPA4	2	A	VPA4	8	Α	VPA6	0
Model Number	ACA	ACA	ACA	ACC	ACD															
Total Capacity	10,800	19,600	:	24,000)		29,000)	(35,000)		12,000	1		46,000)	,	54,500	
Sensible Heat Ratio	0.74	0.76		0.71			0.75			0.69			0.75			0.76			0.72	
Sensible Capacity	7,982	14,837		16,950)		21,740)	2	24,155	5	;	31,640)	3	34,940)	;	39,000	
Rated Air Flow (CFM ¹)	400	735		840			1,000			1,100			1,575			1,725			1,850	

¹CFM=Cubic Feet per Minute. Sensible heat ratios based upon ANSI/AHRI std. 390 outdoor air conditions of 95°F (35°C) and 80°F DB/67° WB (26.5°C DB/19.5°C WB) return air.

Cooling Performance (BTUH) at Various Outdoor Temperatures -**AVPA Air Conditioners**

				Outd	oor Temper	ature			
Model Number	75°F / 24°C	80°F / 26.5°C	85°F / 29°C	90°F / 32°C	95°F / 35°C	100°F / 38°C	105°F / 40.5°C	110°F / 43.3°C	115°F / 46°C
AVPA12AC	12,530	12,100	11,660	11,230	10,800	10,370	9,940	9,500	9,290
AVPA20AC	22,740	21,950	21,170	20,380	19,600	18,820	18,030	17,250	16,860
AVPA24AC	27,840	26,880	25,920	24,960	24,000	23,040	22,080	21,120	20,640
AVPA30AC	33,640	32,480	31,320	30,160	29,000	27,840	26,680	25,520	24,940
AVPA36AC	40,600	39,200	37,800	36,400	35,000	33,600	32,200	30,800	30,100
AVPA42AC	48,720	47,040	45,360	43,680	42,000	40,320	38,640	36,960	36,120
AVPA48AC	53,360	51,520	49,680	47,840	46,000	44,160	42,320	40,480	39,560
AVPA60AC	63,220	61,040	58,860	56,680	54,500	52,320	50,140	47,960	46,870
Based upon ANSI/AHRI std. 390 return air conditio	ns of 80°F D	B/67° WB (2	6.5°C DB/19	9.5°C WB) at	t various out	door temper	atures.		

CFM¹ vs. External Static Pressure (Wet Coil) -**AVPA Air Conditioners**

MODEL	0.10	0.20	0.25	0.3	0.4	0.5
AVPA12	500	460	430	400	n/a	n/a
AVPA20	860	810	740	670	n/a	n/a
AVPA24	860	810	740	670	n/a	n/a
AVPA30	1,100	1,000	960	920	810	n/a
AVPA36	1,310	1,220	1,185	1,150	1,060	n/a
AVPA42	n/a	1,650	1,585	1,520	1,450	1,360
AVPA48	n/a	1,900	1,830	1,760	1,700	1,620
AVPA60	n/a	1,900	1,830	1,760	1,700	1,620

¹CFM=Cubic Feet per Minute. Air flow ratings are at 230 volts. Operation of units at a different voltage will affect air flow.

³CFM=Cubic Feet per Minute ²EER=Energy Efficiency Ratio

Ratings are with no outside air. Performance will be affected by altitude.

Ratings are at 230 volts for 208/230 volt units ("A" & "C" models) and 460 volts for "D" models. Operation of units at a different voltage from that of the rating point will affect performance and air flow.

Electrical Characteristics - Compressor, Fan & Blower Motors - AVPA Air Conditioner

BASIC	С	OMPRESSOR			OUTDOO	R FAN N	IOTOR		INDOOF	R FAN MO	OTOR	
MODEL	Туре	VOLTS-HZ-PH	RLA ¹	LRA ²	VOLTS-HZ-PH	RPM ³	FLA ⁴	HP ⁵	VOLTS-HZ-PH	RPM ³	FLA ⁴	HP⁵
AVPA12ACA	ROTARY	208/230-60-1	4.7	25.0	208/230-60-1	1630	0.65	1/6	208/230-60-1	1650	0.85	1/5
AVPA20ACA		208/230-60-1	8.3	43.0	208/230-60-1	1075	1.5	1/5	208/230-60-1	1075	1.5	1/5
AVPA24ACA		208/230-60-1	10.6	54.0	208/230-60-1	1075	1.5	1/5	208/230-60-1	1075	1.5	1/5
AVPA30ACA		208/230-60-1	13.1	74.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA36ACA	RECIPROCATING	208/230-60-1	14.7	84.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA42ACA		208/230-60-1	15.7	84.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA48ACA		208/230-60-1	18.6	102.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA60ACA		208/230-60-1	23.0	130.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	5.2	3/4
AVPA24ACA		208/230-60-1	12.8	64.0	208/230-60-1	1075	1.5	1/5	208/230-60-1	1075	1.5	1/5
AVPA30ACA		208/230-60-1	14.1	77.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA36ACA	000011	208/230-60-1	17.9	112.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA42ACA	SCROLL	208/230-60-1	19.8	109.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA48ACA		208/230-60-1	21.8	117.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA60ACA		208/230-60-1	26.2	134.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	5.2	3/4
AVPA24ACC		208/230-60-3	8.3	61.0	208/230-60-1	1075	1.5	1/5	208/230-60-1	1075	1.5	1/5
AVPA30ACC		208/230-60-3	9.0	71.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA36ACC	COROLL	208/230-60-3	13.2	88.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA42ACC	SCROLL	208/230-60-3	13.6	83.1	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA48ACC		208/230-60-3	13.7	83.1	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA60ACC		208/230-60-3	15.6	111.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	5.2	3/4
AVPA24ACD		460-60-3	5.1	28.0	208/230-60-1	1075	1.5	1/5	208/230-60-1	1075	1.5	1/5
AVPA30ACD		460-60-3	5.6	38.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA36ACD	SCROLL	460-60-3	6.0	44.0	208/230-60-1	1075	1.8	1/4	208/230-60-1	1075	2.5	1/4
AVPA42ACD	SURULL	460-60-3	6.1	41.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA48ACD		460-60-3	6.2	41.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	3.1	1/2
AVPA60ACD		460-60-3	7.7	52.0	208/230-60-1	825	2.8	1/3	208/230-60-1	1075	5.2	3/4

¹RLA = Rated Load Amps ²LRA = Locked Rotor Amps ³RPM = Revolutions per Minute
⁴FLA = Full Load Amps
⁵HP = Horsepower The 460 volt units have a step down transformer for the 230 volt motors.

Summary Electrical Ratings (Wire and Circuit Breaker Sizing) AVPA Air Conditioners with Ventilation Configurations:

Manual Damper, up to 15% Outside Air ("N")
Motorized Damper, up to 450 CFM of Outside Air with Pressure Relief ("B") Manual Damper, up to 450 CFM of Outside Air ("Y")
Manual Damper, up to 450 CFM of Outside Air with Pressure Relief ("Z")

ELECTR	RIC HEAT	000 =	None	036 =	3.6 kw	040 =	4 kw	050 =	5 kw	060 =	6 kw	080 =	8 kw	090 =	9 kw	100 =	10 kw	120 =	12 kw	150 =	15 kw
BASIC	VOLTAGE	SP	PE ³	SPI	PE ³	SP	PE ³	SPI	PE ³	SP	PE ³	SP	PE ³	SP	PE ³						
MODEL	PHASE / HZ	MCA ¹	MFS ²																		
AVPA12ACA	208/230-1-60	7.4	15	19.7	20			26.9	30												
AVPA20ACA	208/230-1-60	13.4	20			22.4	25	27.5	30	32.8	35	43.1	45			53.6	60				
AVPA24ACA	208/230-1-60	19.0	30			22.4	30	27.5	30	32.8	35	43.1	45			53.6	60				
AVPA30ACA	208/230-1-60	21.9	35			23.4	35	28.5	35	33.8	35	44.1	45			54.6	60	65.0	70	80.6	90
AVPA36ACA	208/230-1-60	26.7	40			26.7	40	28.5	40	33.8	40	44.1	45			54.6	60	65.0	70	80.6	90
AVPA42ACA	208/230-1-60	30.7	50					30.7	50							55.1	60	65.5	70	81.1	90
AVPA48ACA	208/230-1-60	33.2	50					33.2	50							55.1	60	65.5	70	81.1	90
AVPA60ACA	208/230-1-60	40.8	60					40.8	60							57.3	60	67.6	70	83.2	90
AVPA24ACC	208/230-3-60	13.4	20							19.5	20			28.6	30			37.6	40		
AVPA30ACC	208/230-3-60	15.6	20							20.5	20			29.6	30			38.6	40	47.6	50
AVPA36ACC	208/230-3-60	20.8	30							20.8	30			29.6	30			38.6	40	47.6	50
AVPA42ACC	208/230-3-60	22.9	35							22.9	35			30.1	35			39.1	40	48.1	50
AVPA48ACC	208/230-3-60	23.0	35							23.0	35			30.1	35			39.1	40	48.1	50
AVPA60ACC	208/230-3-60	27.5	40							27.5	40			32.2	40			41.3	50	50.2	60
AVPA24ACD	460-3-60	7.9	15							9.8	15			14.3	15			18.8	20	23.3	25
AVPA30ACD	460-3-60	9.2	15							10.3	15			14.8	15			19.3	20	23.8	25
AVPA36ACD	460-3-60	9.7	15							10.3	15			14.8	15			19.3	20	23.8	25
AVPA42ACD	460-3-60	10.6	15							10.9	15			15.1	20			19.6	20	24.1	25
AVPA48ACD	460-3-60	10.7	15							10.9	15			15.1	20			19.6	20	24.1	25
AVPA60ACD	460-3-60	13.6	20							13.6	20			16.1	20			20.6	25	25.1	30
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¹MCA = Minimum Circuit Ampacity (Wiring Size Amps)

²MFS = Maximum Fuse Size ³SPPE = Single Point Power Entry

MCA & MFS are calculated at 230 volts on the ACA & ACC models. The 460 volts ACD models are calculated at 460 volts. This chart should only be used as a guideline for estimating conductor size and overcurrent protection. For the requirements of specific units, always refer to the data label on the unit.

Summary Electrical Ratings (Wire and Circuit Breaker Sizing)

AVPA Air Conditioners with Electric Reheat ("R") and Ventilation Configurations: Manual Damper, up to 15% Outside Air ("N")
Motorized Damper, up to 450 CFM of Outside Air with Pressure Relief ("B")

Manual Damper, up to 450 CFM of Outside Air ("Y")

Manual Damper, up to 450 CFM of Outside Air with Pressure Relief ("Z")

		•														•		•	
ELECT	RIC HEAT	036 =	3.6 kw	040 =	4 kw	050 =	5 kw	060 =	6 kw	080 =	8 kw	090 =	9 kw	100 =	10 kw	120 =	12 kw	150 =	15 kw
BASIC	VOLTAGE	SP	PE ³	SPI	PE ³	SP	PE ³	SPI	PE ³	SP	PE ³								
MODEL	PHASE / HZ	MCA ¹	MFS ²																
AVPA12ACA	208/230-1-60	26.2	30																
AVPA20ACA	208/230-1-60			34.3	35														
AVPA24ACA	208/230-1-60					45.0	45												
AVPA30ACA	208/230-1-60							53.2	60										
AVPA36ACA	208/230-1-60							58.0	60										
AVPA42ACA	208/230-1-60													82.8	90				
AVPA48ACA	208/230-1-60													85.3	90				
AVPA60ACA	208/230-1-60															103.3	110		
AVPA24ACC	208/230-3-60							31.4	35										
AVPA30ACC	208/230-3-60							33.6	35										
AVPA36ACC	208/230-3-60							38.8	40										
AVPA42ACC	208/230-3-60											50.0	50						
AVPA48ACC	208/230-3-60											50.1	60						
AVPA60ACC	208/230-3-60															63.6	70		
AVPA24ACD	460-3-60							16.0	20										
AVPA30ACD	460-3-60							18.2	20										
AVPA36ACD	460-3-60							18.7	20										
AVPA42ACD	460-3-60											24.1	25						
AVPA48ACD	460-3-60											24.2	25						
AVPA60ACD	460-3-60															31.6	35		

¹MCA = Minimum Circuit Ampacity (Wiring Size Amps)

²MFS = Maximum Fuse Size

³SPPE = Single Point Power Entry

MCA & MFS are calculated at 230 volts on the ACA & ACC models. The 460 volts ACD models are calculated at 460 volts. This chart should only be used as a guideline for estimating conductor size and overcurrent protection. For the requirements of specific units, always refer to the data label on the unit.

Unit Load Amps - AVPA Air Conditioners with Ventilation Configurations: Manual Damper, up to 15% Outside Air ("N") Motorized Damper, up to 450 CFM of Outside Air with Pressure Relief ("B")

Manual Damper, up to 450 CFM of Outside Air ("Y")
Manual Damper, up to 450 CFM of Outside Air with Pressure Relief ("Z")

	Dumpe	- /	<u>- P </u>									• • • • • • • • • • • • • • • • • • • •						<u> </u>			
BASIC MODEL NUMBER	VOLTAGE PHASE / HZ		RENT IPS	(1)	OF RE ALL HE 2) SHAD	ATING E	LEMEN	TS ARE	ON A SI	EPARAT	E CIRCI	JIT ,		JDES /	AMPS F	FROM I	MOTO! ON AN	R(S) TH	NG AN HAT AR OT HAV	E LOC	
NOMBER		AC ¹	IBM ²	3.6 kW	04 kW	05 kW	06 kW	08 kW	09 kW	10 kW	12 kW	15 kW	3.6 Kw	04 Kw	05 Kw	06 Kw	08 Kw	09 Kw	10 Kw	12 Kw	15 Kw
AVPA12ACA	208/230-1-60	6.1	0.85	15.0		20.8							15.9		21.7						
AVPA20ACA	208/230-1-60	11.3	1.5		16.7	20.8	25.0	33.3		41.7				18.2	22.3	26.5	34.8		43.2		
AVPA24ACA	208/230-1-60	15.8	1.5		16.7	20.8	25.0	33.3		41.7				18.2	22.3	26.5	34.8		43.2		
AVPA30ACA	208/230-1-60	18.4	2.5		16.7	20.8	25.0	33.3		41.7	50.0	62.5		19.2	23.3	27.5	35.8		44.2	52.5	65.0
AVPA36ACA	208/230-1-60	22.2	2.5		16.7	20.8	25.0	33.3		41.7	50.0	62.5		19.2	23.3	27.5	35.8		44.2	52.5	65.0
AVPA42ACA	208/230-1-60	25.7	3.1			20.8				41.7	50.0	62.5			23.9				44.8	53.1	65.6
AVPA48ACA	208/230-1-60	27.7	3.1			20.8				41.7	50.0	62.5			23.9				44.8	53.1	65.6
AVPA60ACA	208/230-1-60	34.2	5.2			20.8				41.7	50.0	62.5			26.0				46.9	55.2	67.7
AVPA24ACC	208/230-3-60	11.2	1.5				14.4		21.7		28.9	36.1				15.9		23.2		30.4	37.6
AVPA30ACC	208/230-3-60	13.3	2.5				14.4		21.7		28.9	36.1				16.9		24.2		31.4	38.6
AVPA36ACC	208/230-3-60	17.5	2.5				14.4		21.7		28.9	36.1				16.9		24.2		31.4	38.6
AVPA42ACC	208/230-3-60	19.5	3.1				14.4		21.7		28.9	36.1				17.5		24.8		32.0	39.2
AVPA48ACC	208/230-3-60	19.6	3.1				14.4		21.7		28.9	36.1				17.5		24.8		32.0	39.2
AVPA60ACC	208/230-3-60	23.6	5.2				14.4		21.7		28.9	36.1				19.6		26.9		34.1	41.3
AVPA24ACD	460-3-60	6.6	0.8				7.2		10.8		14.4	18.0				8.0		11.6		15.2	18.8
AVPA30ACD	460-3-60	7.8	1.3				7.2		10.8		14.4	18.0				8.5		12.1		15.7	19.3
AVPA36ACD	460-3-60	8.2	1.3				7.2		10.8		14.4	18.0				8.5		12.1		15.7	19.3
AVPA42ACD	460-3-60	9.1	1.6				7.2		10.8		14.4	18.0				8.8		12.4		16.0	19.6
AVPA48ACD	460-3-60	9.2	1.6				7.2		10.8		14.4	18.0				8.8		12.4		16.0	19.6
AVPA60ACD	460-3-60	11.7	2.6				7.2		10.8		14.4	18.0				9.8		13.4		17.0	20.6

¹AC = Air conditioner ²IBM= Indoor Blower Motor

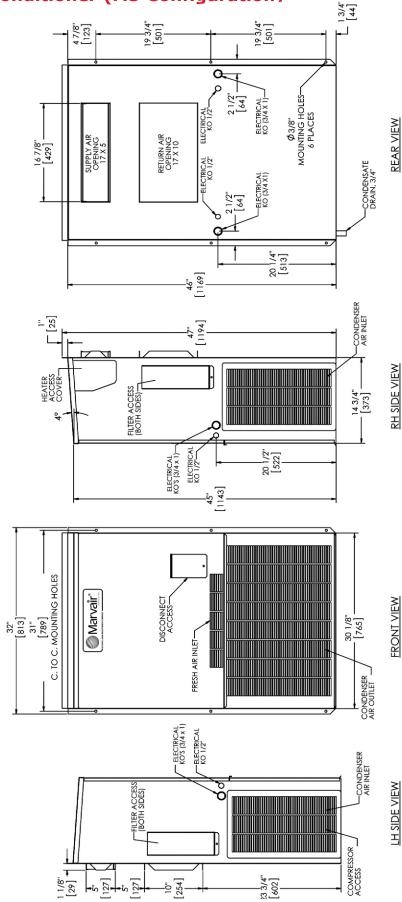
Heating kW is rated at 240 volts on the ACA & ACC models.

Heating kW is rated at 480 volts on the ACD models. Three phase models contain single phase motor loads.

Derate heater output by 25% for operation at 208 volts. Total heating and cooling amps includes all motors.

Loads are not equally balanced on each phase and values shown are maximum phase loads

Dimensional Data - AVPA12 ModPac™ II Air Conditioner (M5 Configuration)



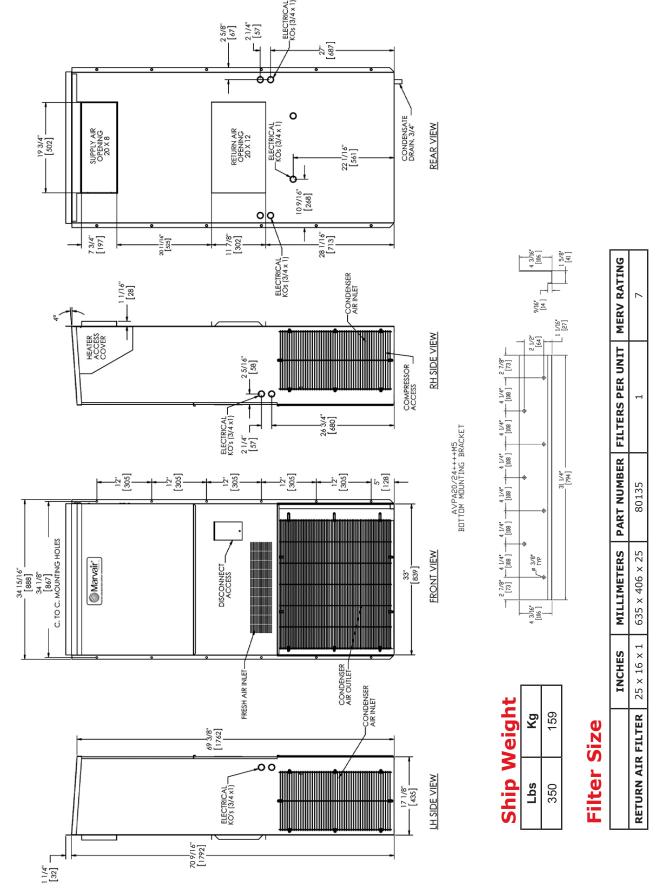
9

Ship Weight Lbs Kg

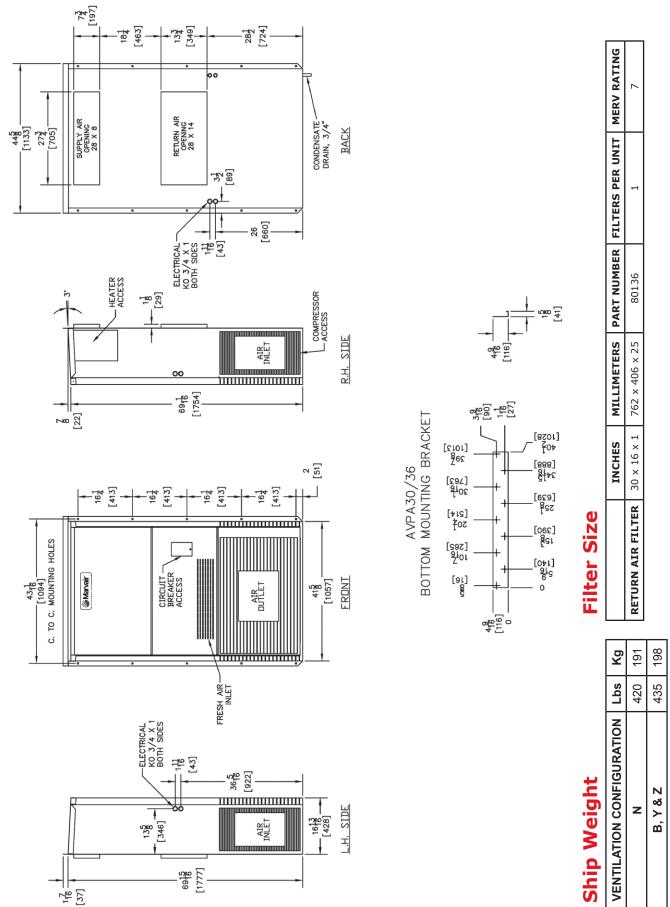
Filter Size

RETURN AIR FILTER 20 x 10 x 1 508 x 254x 25 91913 1		INCHES	MILLIMETERS	PART NUMBER	MILLIMETERS PART NUMBER FILTERS PER UNIT MERV RATING	MERV RATING
	RETURN AIR FILTER	20 × 10 × 1	508 x 254x 25	91913	1	2

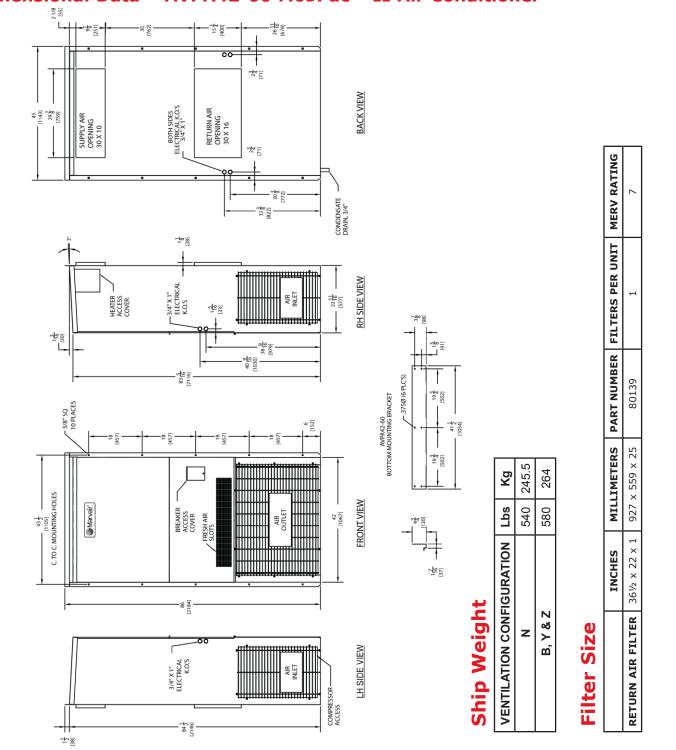
Dimensional Data – AVPA20-24 ModPac™ II Air Conditioner (M5 Configuration)



Dimensional Data - AVPA30-36 MoDPac™ II Air Conditioner



Dimensional Data - AVPA42-60 MoDPac™ II Air Conditioner





Please consult the Marvair[®] website at www.marvair.com for the latest product literature. Detailed dimensional data is available upon request. A complete warranty statement can be found in each product's Installation/Operation Manual, on our website or by contacting Marvair at 229-273-3636. As part of the Marvair continuous improvement program, specifications are subject to change without notice.



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