

APMR Series Packaged Air Conditioners

Range 4 TR to 30 TR
(14 kW to 100 kW)



R-410A

50Hz



SKM Packaged Airconditioning Units APMR Series - R410A

Contents

Legend.....	2	Capacity Ratings	8
Nomenclature.....	2	Fan Performance	10
Introduction.....	2	Typical Wiring Diagram	11
General Features	3	Electrical Data	12
Main Component Features	3	Dimensional Data	13
Optional Features	4	Loading Points.....	15
Microprocessor Control	5	Recommended Clearances	16
Engineering Specifications	6	Installation & Commissioning	18
		Guide Specifications.....	19

Introduction

SKM **APMR** New Packaged Air Conditioners Series are designed and manufactured to meet the requirements of Gulf's severe climatic conditions and are built specifically for ducted systems which will enable them to be installed easily on roof tops or on the ground.

The **APMR** series Packaged Air Conditioners are compact, quiet, most efficient and self contained units are ideal for commercial and top end residential applications.

SKM **APMR** Series are available in 15 different sizes from 4 to 30 TR (14 to 100 kW) in 50 Hz at nominal AHRI conditions. APMR units are designed, rated and manufactured in accordance with AHRI 210/240 and 340/360 standards.

The **APMR** series units from SKM are completely assembled, leak tested, vacuumed, internally wired and fully charged with R-410A refrigerant at factory. Each unit is fully factory tested before dispatch and is ready for installation. All that is required on the site is to connect ducts, drain lines, main power supply and field wiring to the thermostat. This greatly reduces the installation work and cost.

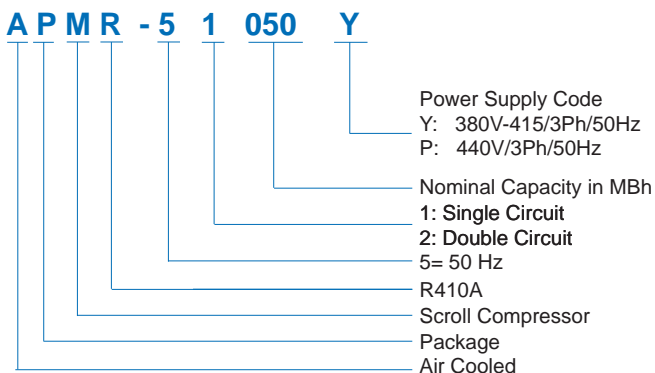
SKM **APMR** series packaged air conditioners are designed to operate in a wide ambient temperature range between 50°F (10°C) to 125°F (52°C). Two independent refrigeration circuits are provided where two compressors are used.

Legend

The following legends are used throughout this manual:

cfm..... Cubic feet per minute	AFR Air Flow Rate
Hz Hertz	MBh BTUH x 1000
kW Kilowatts	Ph Phase
kg..... Kilogram	PI Power Input of Compressor
lbs..... Pounds	BPF..... By Pass Factor
l/s..... Liters per second	TR..... Ton of Refrigeration
Pa Pascal	V Volts
in. wg Inch water gauge	

Nomenclature



SKM Airconditioning Equipment,



Built in the Gulf...for the World

SKM Packaged Airconditioning Units APMR Series - R410A

50Hz

General Features

The APMR Series is a modern, diversified and environment friendly series of packaged air conditioners which use R-410A refrigerant.

The APMR Series Packaged Air Conditioners are yet another new unique series from SKM incorporates many salient features which, together, provides a heavy duty, robust, long lasting commercial unit meant for high end residential and commercial applications. The APMR series models combine high efficiency condenser and cooling coils, evaporator blower and heavy duty motor in addition to premium safety and operational controls.

The complete APMR packaged unit provides an extremely rugged, long life, energy efficient, self contained packaged air conditioner that will provide cooling with higher efficiency over a long and extended life.

What makes APMR series yet another model in the top class range of SKM products is the use of:

- High efficiency totally sealed scroll hermetic compressors.
- Totally enclosed, Class F insulated, minimum IP55 protected condenser and evaporator fan motors.
- Heavy duty condenser and evaporator coils optimised in design for long-life maintenance free operation.
- Cabinet construction specifically designed for Gulf climates.
- Electrical panel with many features, as standard.
- Typically, much heavier gauge tubing and thicker fins for ruggedness and long life.

Main Component Features

The common standard features of all APMR series packaged units include the following

Compressors

Compressors used in APMR packaged unit series are hermetically sealed, compact scroll with the following features:

- High Efficiency.
- Quite operation, Low Sound levels.
- Compact and light .
- Limited wear.
- 70% fewer moving parts than comparably sized reciprocating compressors
- Unique ability to handle liquid refrigerant.
- Suction gas motor cooling.
- Suction screen.
- Centrifugal oil pumps with filter and magnet.
- Brazed fittings or Rotalock options.
- Two refrigerant circuits on larger units provides efficient part load.
- No internal valves.

Condenser Coils

Condenser coils are manufactured from cross fin Waffle Louvre and Hi-X seamless copper tubes mechanically bonded to aluminium fins to ensure optimum heat transfer. All coils are tested against leakage by high air pressure under water. An integral subcooling circuit is incorporated in the lower section of the condenser to increase system capacity. The additional condenser surface provides more cooling using less energy at no additional cost.

Condenser Fans

Condenser fans are propeller type with aluminium alloy blades and are directly driven by electric motors. Motors are internally protected for overloads and Totally Enclosed Air Over (TEAO), six pole with Class F insulation and minimum IP55 protection. The TEAO and Class F insulation features ensure long life and are unique to SKM. The condenser fans are individually statically and dynamically balanced at the factory. Complete fan assembly is mounted downward on the strong and acrylic coated fan guard for the smaller units. For larger units fan, assembly is separate and provided with suitable acrylic coated fan guard. Motors are wired to the control panel to control the operation of these motors along with the compressors.



Figure 1 : Condenser Fan Motor arrangement for Models APMR 51050-52150

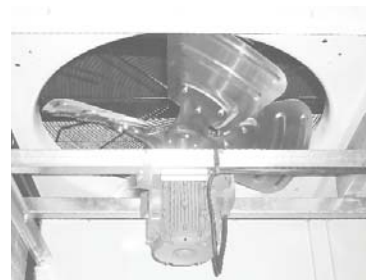


Figure 2 : Condenser Fan Motor arrangement for Models APMR 52170-52340

Evaporator

Evaporator coils are manufactured from plain copper tubes mechanically bonded to aluminium cross wave fins to ensure optimum heat transfer. All evaporator coils are tested against leakage by high air pressure of 450 psig (3100 kPa) under water. Coils conform to AHRI-410.

SKM Packaged Airconditioning Units

APMR Series - R410A

Evaporator Fan & Drive

Evaporator fans are forward curved centrifugal double inlet, double width, statically and dynamically balanced. Bearings used in the fans are self aligning and lubricated for life. Evaporator fans are belt driven and use "V" belts with an adjustable variable pitch motor pulley resulting in an accurate fan air flow adjustment.

Fans are driven by Totally Enclosed, IP55 Protected, 4 pole Class F insulated electric motors. The motors are factory wired to the control panel where the motor starters are located to control the operation of the motors. The motors conform to relevant IEC standards.

Casing and Structure

The unit casing used in APMR series is made of hot dip galvanized (zinc coated) steel sheets, conforming to JIS-G 3302 and ASTM A525, which is phosphatized and baked after an electrostatic powder coat of approx. 60 microns. This finish and coating can pass a 1000 hour in 5% salt spray testing at 95°F (35°C) and 95% relative humidity as per ASTM B117.

The evaporator section is insulated from all the sides with 1" thick fiber glass insulation with extremely tough and durable black composite surface. The insulation cum sound liner meets the fire requirements of NFPA90A & 90B and is secured with mechanical fasteners in addition to water resistant adhesive.

Refrigerant R- 410A

Why 410A?

R410A has a higher volumetric cooling capacity compared to R22 and has better thermal exchange properties. This results in overall performance gains in terms of system efficiency. The greater density of the vapour in R410A permits higher system velocities, reduces pressure drop losses and allows smaller diameter tubing to be used. In other words a smaller unit can be developed using a smaller displacement compressor, less coil and less refrigerant while maintaining system efficiencies comparable to current day R22 equipment.

Benefits

- **No ozone depletion potential or phase-out date.**

Using chlorine-free R-410A with zero Ozone Depletion Potential (ODP) helps protect both the environment and your investment. That's because new equipment using R-410A faces no mandated phase-out date over a 20 to 30 year equipment life expectancy.

- **Reduced service costs.**

R-410A refrigerant has no significant "glide." If a leak occurs, only the lost refrigerant must be replaced.

Attention points

- Pressure level: 1.6 times of R22• lubricating oil: Ester Oil
Absorb moisture easily
Never mix with mineral oil
- Tools exclusive for R410A
- Never mix R410A with other refrigerant
- Driers, valves and even copper tube must be approved for use with R410A.
- Never allow refrigerant cylinders to exceed 60°C.

Control Panel

The APMR packaged Air Conditioners are provided with IP-54 control panel enclosure comprising all starting, operating and safety controls.

The following are the standard components used in all APMR series units.

- Compressor motor contactors.
- Condenser fan motor contactor and overload relays.
- Evaporator Fan motor contactor and overload relays.
- 24Volts low voltage fused transformer for user supplied and installed room thermostat.
- Compressor short cycling protection.
- Control disconnect switch for each circuit.
- Power and control circuit terminal blocks.
- High pressure protector.
- Low pressure protector.

Optional Features

As with all SKM air conditioning units, the **APMR Series** Packaged Units are available with multitude of optional features available on request:

Voltage Monitoring Modules (VMM)

Provides protection to APMR-Series Package unit in the event of:

- Phase burn-out
- Phase reversal
- Under / over voltage on the incoming line voltage.

Voltage Monitoring Modules (DVM)

To meet DEWA regulations modified module with time delay relay. This option is available for Dubai, U.A.E. only.

High & Low Pressure Gauges (SDG)

Unit mounted for each compressor to monitor the high and lo-side operating pressure.

SKM Packaged Airconditioning Units APMR Series - R410A



1" (25mm) / 2" (50mm) Flat Filter Section (FFS)

For heavy filtration, need a section, can be provided without or with aluminium cleanable filter (with 1" filter add 1AF and for 2" filter add 2AF).

Liquid Line Sight Glass (RSG)

For monitoring refrigerant charge and to provide visual indication of moisture presence in the system.

Electric Heating (HC@)

The following electric heaters are available as optional accessories on request. Components include electric heater elements, magnetic contactors, thermal safety cut-out (manual & auto) and airflow switch.

MODEL	HEATER (kW)	STAGES
APMR		
51050	4.5	1
51060		
51075		
51080	9	1
51100		
52115		
52125	18	2
52150		
52170		
52200		
52230		
52240	24	2
52270		
52300		
52340		

Table 1

Pump Down Facility with solenoid valve (PDS)

The compressors will switch off each time with a Pumpdown Cycle in order to prevent Liquid refrigerant migration to the compressor during Off Cycle periods.

With this option, each circuit will be provided with an additional discharge check valve to prevent Refrigeration Migration from High side to Low side when the compressor is off.

Low Voltage Thermostat (CHTS)

(1 or 2 stages as per model) for wall mounting and for either cooling (COTS) or cooling/heating (CHTS) operation (not required with MCP Option).

Extra Shut-off Valve (XFV)

To fully isolate refrigerant filter drier; an additional shut-off valve can be incorporated in the liquid line.

Alternative Condenser Material

Made of copper tubes and alternative fin material and/or protective coats.

- For Copper Fins specify (FC)
- For Precoated Aluminum Fins, specify (FAP)
- For Aluminum Fins with Aeris Coat Protection, specify (FAA)
- For Copper Fins with Aeris Coat Protection, specify (FCA)

Alternative Evaporator Material

Made of copper tubes and alternative fin material and/or protective coats.

- For Copper Fins specify (FC)
- For Precoated Aluminum Fins, specify (FAP)
- For Aluminum Fins with Aeris Coat Protection, specify (FAA)
- For Copper Fins with Aeris Coat Protection, specify (FCA)

Condenser Coil Guard (CGP)

Wire mesh guard, in painted finish for condenser coils. Recommended on ground level installations where coil needs to be protected against vandalism.

External Overload Protection (EOP)

For those electrical specification requires additional overload protection for the compressors.

Double Skin Insulation (DSI)

Inner skin in the evaporator section is provided with foam board insulation.

Factory Installed

Microprocessor Based Control (MCP)

The controller consists of modules with on board display and user interface terminals. The controller has compact dimensions and can manage package unit with cooling / heating circuits. The controller has the following features.

- Built in anti recycle timer to prevent compressor short cycling.
- Auto, lead/lag of the compressor.
- Common alarm available through the dry contact.
- Remote start/stop of the unit.
- Cooling and heating functions are available.

Remote Terminal:

It is sophisticated graphic LCD for the panel mounting, installation on the unit, or remote wall mounting, for the complete control of the unit. This terminal has an excellent feature for servicing and setting up the unit.



SKM Packaged Airconditioning Units APMR Series - R410A

ENGINEERING SPECIFICATIONS - 50 Hz

Model	APMR	51050	51060	51075	51080	51100	52115	52125	
Cooling Capacity (1)	MBh	54.1	62.5	76.1	82.1	102.5	114.2	127.4	
	kW	15.9	18.3	22.3	24.1	30.0	33.5	37.3	
Cooling Capacity (2)	MBh	48.8	56.7	68.5	73.6	92.3	103.1	115.6	
	kW	14.3	16.6	20.1	21.6	27.1	30.2	33.9	
Cooling Capacity (3)	MBh	47.9	55.7	67.2	72.1	90.5	101.1	113.5	
	kW	14.0	16.3	19.7	21.1	26.5	29.6	33.3	
Compressor	Type	-	Hermetic Scroll						
	Quantity	-	1	1	1	1	1	2	2
	Oil Charge	US Gal	0.41	0.41	0.41	0.79	0.87	0.83	0.83
Liter		1.57	1.57	1.57	3	3.3	3.14	3.14	
Condenser Coil	Type	-	Waffle louver fins and Hi-X tubes						
	Face Area	ft ²	19.4	26.7	26.7	26.7	26.7	26.7	40.0
		m ²	1.8	2.5	2.5	2.5	2.5	2.5	3.7
Condenser Fan	Type	-	Propeller Direct Drive						
	Code / Quantity	-	560/1	560/2	560/2	560/2	560/2	560/2	628/2
	Air Flow Rate	cfm	4400	7600	7600	7600	7000	7000	9600
		l/s	2077	3587	3587	3587	3304	3304	4531
Condenser Motor	Type	-	Totally Enclosed Air Over, Class-F insulation, 6-pole, IP55 Protected						
	Size / Quantity	kW	0.25/1	0.25/2	0.25/2	0.25/2	0.25/2	0.25/2	0.37/2
Evaporator Coil	Type	-	Plain-Tubes						
	Face Area	ft ²	4.6	4.6	6.4	6.4	8.7	9.7	9.7
		m ²	0.4	0.4	0.6	0.6	0.8	0.9	0.9
Evaporator Fan	Type	-	Centrifugal DIDW Belt Drive						
	Code / Quantity	-	N10-S	N10-S	N10-S	N12-S	N12-S	N12-S	N12-S
	Air Flow Rate	cfm	1670	2000	2400	2900	3220	4000	4000
		l/s	788	944	1133	1369	1520	1888	1888
Evaporator Motor	Type	-	Totally Enclosed Fan Cooled, Class-F insulation, 4-pole, IP55 Protected.						
	Size	kW	0.55	0.55	0.75	1.1	1.1	1.5	1.5
Refrigerant (R - 410A) Operating Charge	lbs	6.4	7.3	7.8	7.8	13.9	15.1	20.7	
	kg	2.9	3.3	3.5	3.5	6.3	6.8	9.4	
Number of Refrigerant Circuits	-	1	1	1	1	1	2	2	
Unit Operating Weight	lbs	585	681	693	771	909	1049	1241	
	kg	265.3	308.8	314.3	349.7	412.2	475.7	562.8	

Table 2

Notes:

- (1) Capacity ratings are based on AHRI Standard 210/240 & 340/360. Evaporator entering air conditions of 80°/67°F (27°/19.5°C) dry bulb/wet bulb and condenser entering air temperature of 95°F (35°C) dry bulb.
- (2) Evaporator entering air conditions of 80°/67°F (27°/19.5°C) dry bulb/wet bulb and condenser entering air temperature of 115°F (46°C) dry bulb.
- (3) Evaporator entering air conditions of 80°/67°F (27°/19.5°C) dry bulb/wet bulb and condenser entering air temperature of 118.4°F (48°C) dry bulb.
- (4) Capacity is gross capacity which does not include the effect of evaporator fan motor heat.

SKM Packaged Airconditioning Units APMR Series - R410A



ENGINEERING SPECIFICATIONS - 50 Hz

Model	APMR	52150	52170	52200	52230	52240	52270	52300	52340	
Cooling Capacity (1)	MBh	153.9	172.5	204.0	231.4	236.2	271.2	309.6	342.6	
	kW	45.1	50.6	59.8	67.8	69.2	79.5	90.7	100.4	
Cooling Capacity (2)	MBh	138.8	155.5	184.0	207.4	212.7	244.0	277.3	308.1	
	kW	40.7	45.6	53.9	60.8	62.3	71.5	81.3	90.3	
Cooling Capacity (3)	MBh	136.1	152.4	180.4	203.3	208.5	239.4	271.6	302.0	
	kW	39.9	44.7	52.9	59.6	61.1	70.2	79.6	88.5	
Compressor	Type	-	Hermetic Scroll							
	Quantity	-	2	2	2	2	2	2	2	2
	Oil Charge	US Gal	0.83	1.59	1.74	1.74	1.74	1.74	1.74	3.54
		Liter	3.14	6	6.6	6.6	6.6	6.6	6.6	13.4
Condenser Coil	Type	-	Waffle louver fins and Hi-X tubes							
	Face Area	ft ²	40.0	40.0	48.0	48.0	54.7	54.7	53.3	53.3
		m ²	3.7	3.7	4.5	4.5	5.1	5.1	5.0	5.0
Condenser Fan	Type	-	Propeller Direct Drive							
	Code / Quantity	-	628/2	723/2	729/2	729/2	823/2	823/2	823/2	823/2
	Air Flow Rate	cfm	9600	13960	15600	15600	19780	19780	19340	19340
		l/s	4531	6588	7362	7362	9335	9335	9127	9127
Condenser Motor	Type	-	Totally enclosed air over, Class-F insulation, 6-pole, IP55 Protected							
	Size / Quantity	kW	0.37/2	0.75/2	1.1/2	1.1/2	1.1/2	1.1/2	1.1/2	1.1/2
Evaporator Coil	Type	-	Plain-Tubes							
	Face Area	ft ²	12.5	13.3	15.6	15.6	19.5	19.5	21.7	21.7
		m ²	1.2	1.2	1.4	1.4	1.8	1.8	2.0	2.0
Evaporator Fan	Type	-	Centrifugal DIDW Belt Drive							
	Code / Qty.	-	N15-S	N12-D	N12-D	N12-D	N15-D	N15-D	N15-D	N15-D
	Air Flow Rate	cfm	5000	6000	7000	7000	8000	8000	9100	10500
		l/s	2360	2832	3304	3304	3776	3776	4295	4955
Evaporator Motor	Type	-	Totally enclosed fan cooled, Class-F insulation, 4-pole, IP55 Protected.							
	Size	kW	1.5	2.2	3	3	2.2	3	3	4
Refrigerant (R - 410A) Operating Charge	lbs	21.4	21.6	25.2	26.6	28.9	31.6	43.2	43.3	
	kg	9.7	9.8	11.4	12.1	13.1	14.3	19.6	19.6	
Number of Refrigerant Circuits	-	2	2	2	2	2	2	2	2	
Unit Operating Weight	lbs	1277	1468	1709	1741	1879	1926	2050	2227	
	kg	579.1	665.8	775.1	789.6	852.2	873.5	929.7	1010.0	

Table 3

Notes:

- (1) Capacity ratings are based on AHRI Standard 210/240 & 340/360. Evaporator entering air conditions of 80°/67°F (27°/19.5°C) dry bulb/wet bulb and condenser entering air temperature of 95°F (35°C) dry bulb.
- (2) Evaporator entering air conditions of 80°/67°F (27°/19.5°C) dry bulb/wet bulb and condenser entering air temperature of 115°F (46°C) dry bulb.
- (3) Evaporator entering air conditions of 80°/67°F (27°/19.5°C) dry bulb/wet bulb and condenser entering air temperature of 118.4°F (48°C) dry bulb.
- (4) Capacity is gross capacity which does not include the effect of evaporator fan motor heat.



SKM Packaged Airconditioning Units APMR Series - R410A

GROSS CAPACITY RATINGS - 50 Hz

Model	AFR cfm Vs (BPF)	EWB		Condenser Entering Air Temperature																													
				95°F (35°C)						105°F (41°C)						115°F (46°C)						118.4°F (48°C)						125°F (52°C)					
				Total Capacity		Sensible Capacity		PI	Total Capacity		Sensible Capacity		PI	Total Capacity		Sensible Capacity		PI	Total Capacity		Sensible Capacity		PI	Total Capacity		Sensible Capacity		PI					
MBh	kW	MBh	kW	kW	MBh	kW	kW	MBh	kW	kW	MBh	kW	kW	MBh	kW	kW	MBh	kW	kW	MBh	kW	kW	MBh	kW	kW								
51050	1260	62	16.7	47.50	13.90	39.60	11.60	4.30	45.10	13.20	38.50	11.30	4.80	42.60	12.50	37.40	11.00	5.40	41.90	12.30	37.10	10.90	5.50	41.40	12.10	36.90	10.80	5.60					
	595	67	19.4	51.50	15.10	33.20	9.70	4.40	49.10	14.40	32.20	9.40	4.90	46.60	13.60	31.20	9.20	5.50	45.80	13.40	31.00	9.10	5.60	45.30	13.30	30.80	9.00	5.70					
	0.17	72	22.2	55.30	16.20	26.60	7.80	4.50	52.80	15.50	25.70	7.50	5.00	50.20	14.70	24.80	7.30	5.50	49.40	14.50	24.50	7.20	5.70	48.90	14.30	24.30	7.10	5.70					
	1670	62	16.7	49.80	14.60	45.60	13.40	4.40	47.20	13.80	44.50	13.00	5.00	44.70	13.10	43.40	12.70	5.40	43.90	12.90	43.10	12.60	5.60	43.40	12.70	42.90	12.60	5.70					
	788	67	19.4	54.10	15.90	37.60	11.00	4.50	51.50	15.10	36.60	10.70	5.00	48.80	14.30	35.60	10.40	5.50	48.00	14.10	35.30	10.40	5.60	47.50	13.90	35.10	10.30	5.70					
	0.2	72	22.2	58.20	17.00	29.40	8.60	4.50	55.50	16.30	28.50	8.40	5.10	52.70	15.40	27.60	8.10	5.60	51.80	15.20	27.30	8.00	5.70	51.20	15.00	27.10	7.90	5.80					
	2521	62	16.7	52.60	15.40	52.60	15.40	4.40	49.90	14.60	49.90	14.60	5.00	47.10	13.80	47.10	13.80	5.50	46.30	13.60	46.30	13.60	5.60	45.70	13.40	45.70	13.40	5.70					
	1190	67	19.4	57.30	16.80	45.70	13.40	4.50	54.40	16.00	44.80	13.10	5.00	51.50	15.10	43.70	12.80	5.60	50.60	14.80	43.40	12.70	5.70	50.00	14.70	43.20	12.70	5.80					
	0.26	72	22.2	61.70	18.10	34.60	10.10	4.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	1260	62	16.7	53.00	15.50	42.10	12.30	4.40	50.50	14.80	40.90	12.00	4.90	47.80	14.00	39.70	11.60	5.50	47.00	13.80	39.40	11.50	5.70	45.20	13.20	38.60	11.30	6.10					
595	67	19.4	57.40	16.80	35.60	10.40	4.40	54.90	16.10	34.60	10.10	5.00	52.20	15.30	33.50	9.80	5.60	51.40	15.10	33.20	9.70	5.80	49.50	14.50	32.40	9.50	6.20						
0.17	72	22.2	61.70	18.10	28.90	8.50	4.50	59.00	17.30	27.90	8.20	5.10	56.30	16.50	26.90	7.90	5.70	55.50	16.30	26.60	7.80	5.80	53.50	15.70	25.90	7.60	6.20						
2000	62	16.7	57.50	16.90	52.70	15.40	4.40	54.70	16.00	51.50	15.10	5.00	51.80	15.20	50.30	14.80	5.60	51.00	14.90	50.00	14.70	5.80	48.90	14.30	48.90	14.30	6.20						
944	67	19.4	62.50	18.30	43.50	12.70	4.50	59.60	17.50	42.40	12.40	5.10	56.70	16.60	41.30	12.10	5.70	55.80	16.40	41.00	12.00	5.80	53.70	15.70	40.20	11.80	6.20						
0.22	72	22.2	67.20	19.70	34.00	10.00	4.60	64.30	18.80	33.00	9.70	5.10	61.20	17.90	32.00	9.40	5.70	60.30	17.70	31.70	9.30	5.90	58.00	17.00	31.00	9.10	6.30						
2521	62	16.7	59.40	17.40	59.30	17.40	4.50	56.50	16.60	56.50	16.60	5.00	53.50	15.70	53.50	15.70	5.60	52.60	15.40	52.60	15.40	5.80	50.50	14.80	50.50	14.80	6.20						
0.196	67	19.4	64.60	18.90	48.30	14.20	4.50	61.60	18.10	47.30	13.90	5.10	58.50	17.20	46.20	13.50	5.70	57.60	16.90	45.90	13.40	5.90	55.40	16.20	45.10	13.20	6.20						
1260	62	16.7	62.20	17.70	69.60	20.40	37.10	10.90	4.60	66.50	19.50	36.10	10.60	5.20	63.20	18.50	35.10	10.30	5.80	62.30	18.20	34.80	10.20	5.90	61.60	18.10	34.60	10.10	6.00				
51075	1769	62	16.7	66.50	19.50	55.50	16.30	5.60	63.10	18.50	54.00	15.80	6.20	59.60	17.50	52.50	15.40	6.90	58.60	17.20	52.00	15.20	7.00	56.20	16.50	51.00	14.90	7.50					
	835	67	19.4	72.20	21.20	46.60	13.60	5.70	68.70	20.10	45.20	13.20	6.30	65.10	19.10	43.80	12.80	7.00	64.10	18.80	43.30	12.70	7.10	63.30	18.60	43.10	12.60	7.30					
	0.17	72	22.2	77.50	22.70	37.20	10.90	5.80	73.90	21.70	36.00	10.50	6.40	70.20	20.60	34.70	10.20	7.00	69.10	20.30	34.30	10.10	7.20	68.30	20.00	34.00	10.00	7.30					
	2400	62	16.7	70.00	20.50	64.70	19.00	5.70	66.40	19.50	63.20	18.50	6.30	62.70	18.40	61.60	18.10	6.90	61.60	18.00	61.20	17.90	7.10	59.00	17.30	59.00	17.30	7.50					
	1133	67	19.4	76.10	22.30	53.30	15.60	5.80	72.30	21.20	51.90	15.20	6.40	68.50	20.10	50.50	14.80	7.00	67.40	19.70	50.10	14.70	7.20	66.60	19.50	49.80	14.60	7.30					
	0.2	72	22.2	81.80	24.00	41.60	12.20	5.90	78.00	22.80	40.30	11.80	6.50	73.90	21.70	39.00	11.40	7.10	72.70	21.30	38.60	11.30	7.20	71.80	21.10	38.30	11.20	7.40					
	3538	62	16.7	73.70	21.60	73.70	21.60	5.70	69.80	20.50	69.80	20.50	6.30	65.90	19.30	65.90	19.30	7.00	64.70	19.00	64.70	19.00	7.10	63.90	18.70	63.90	18.70	7.30					
	1670	67	19.4	80.30	23.50	64.20	18.80	5.80	76.20	22.30	62.70	18.40	6.40	72.00	21.10	61.30	18.00	7.10	70.70	20.70	60.80	17.80	7.20	69.90	20.50	60.50	17.70	7.30					
	0.26	72	22.2	86.40	25.30	48.50	14.20	5.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	1769	62	16.7	69.50	20.40	56.90	16.70	6.40	66.00	19.40	55.30	16.20	7.20	62.40	18.30	53.70	15.70	8.10	61.30	18.00	53.20	15.60	8.30	58.80	17.20	52.10	15.30	8.80					
835	67	19.4	75.40	22.10	47.90	14.00	6.60	71.80	21.00	46.40	13.60	7.40	68.00	19.90	44.90	13.20	8.20	66.80	19.60	44.40	13.00	8.40	66.10	19.40	44.10	12.90	8.60						
0.17	72	22.2	81.00	23.80	38.50	11.30	6.80	77.20	22.60	37.10	10.90	7.60	73.20	21.50	35.70	10.50	8.40	72.00	21.10	35.30	10.30	8.60	71.20	20.90	35.00	10.30	8.70						
2900	62	16.7	75.50	22.10	72.90	21.40	6.60	71.50	21.00	71.20	20.90	7.40	67.40	19.80	67.40	19.80	8.20	66.20	19.40	66.20	19.40	8.40	65.40	19.20	65.40	19.20	8.60						
1369	67	19.4	82.10	24.10	59.70	17.50	6.80	77.90	22.80	58.10	17.00	7.60	73.60	21.60	56.60	16.60	8.40	72.30	21.20	56.10	16.50	8.60	71.50	20.90	55.80	16.40	8.70						
0.23	72	22.2	88.30	25.90	46.10	13.50	7.00	83.90	24.60	44.70	13.10	7.80	79.40	23.30	43.20	12.70	8.50	-	-	-	-	-	-	-	-	-	-	-					
3538	62	16.7	77.40	22.70	77.40	22.70	6.70	73.30	21.50	73.30	21.50	7.50	69.00	20.20	69.00	20.20	8.30	67.80	19.90	67.80	19.90	8.50	66.90	19.60	66.90	19.60	8.80						
1670	67	19.4	84.30	24.70	65.60	19.20	6.90	79.90	23.40	64.00	18.80	7.70	75.40	22.10	62.50	18.30	8.40	74.10	21.70	62.00	18.20	8.60	73.20	21.40	61.70	18.10	8.60						
0.26	72	22.2	90.70	26.60	49.90	14.60	7.10	86.10	25.20	48.40	14.20	7.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
51100	2387	62	16.7	89.40	26.20	74.70	21.90	7.20	85.20	25.00	72.90	21.40	8.10	80.80	23.70	70.90	20.80	9.00	79.40	23.30	70.30	20.60	9.30	76.20	22.30	69.00	20.20	9.90					
	1126	67	19.4	97.20	28.50	62.80	18.40	7.40	92.70	27.20	61.00	17.90	8.30	87.90	25.80	59.10	17.30	9.20	86.50	25.30	58.50	17.10	9.50	83.10	24.40	57.20	16.80	10.10					
	0.17	72	22.2	104.60	30.60	50.20	14.70	7.60	99.80	29.20	48.60	14.20	8.50	94.70	27.70	46.80	13.70	9.40	93.10	27.30	46.20	13.50	9.60	89.50	26.20	45.00	13.20	10.20					
	3220	62	16.7	94.10	27.60	86.90	25.50	7.30	89.50	26.20	85.00	24.90	8.20	84.60	24.80	83.00	24.30	9.10	83.20	24.40	82.40	24.10	9.40	79.70	23.40	79.70	23.40	10.00					
	1520	67	19.4	102.50	30.00	71.70	21.00	7.50	97.50	28.60	69.90	20.50	8.40	92.30	27.10	67.90	19.90	9.30	90.70	26.60	67.40	19.70	9.60	87.00	25.50	66.00	19.30	10.20					
	0.2	72	22.2	110.40	32.30	56.00	16.40	7.70	105.10	30.80	54.30	15.90	8.60	99.50	29.20	52.50	15.40	9.50	97.80	28.70	51.90	15.20	9.80	96.70	28.30	51.50	15.10	9.90					
	4774	62	16.7	99.30	29.10	99.30	29.10	7.40	94.30	27.60	94.30	27.60	8.30	88.90	26.10	88.90	26.10	9.20	87.30	25.60	87.30	25.60	9.50	83.50	24.50	83.50	24.50	10.10					
	2253	67	19.4	108.30	31.80	86.60	25.40	7.60	102.80	30.10	84.70	24.80	8.50	97.00	28.4																		

SKM Packaged Airconditioning Units APMR Series - R410A



GROSS CAPACITY RATINGS - 50 Hz

Model	AFR cfm liters (BPF)	EWB		Condenser Entering Air Temperature																								
				95°F (35°C)				105°F (41°C)				115°F (46°C)				118.4°F (48°C)				125°F (52°C)								
				Total Capacity		Sensible Capacity		PI	Total Capacity		Sensible Capacity		PI	Total Capacity		Sensible Capacity		PI	Total Capacity		Sensible Capacity		PI					
°F	°C	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW							
52170	3667	62	16.7	145.40	42.60	118.40	34.70	11.90	138.60	40.60	115.40	33.80	13.40	131.30	38.50	112.20	32.90	15.10	129.10	37.80	111.20	32.60	15.60	123.90	36.30	108.90	31.90	16.70
	1730	67	19.4	158.10	46.30	99.90	29.30	12.10	150.90	44.20	97.00	28.40	13.70	143.20	42.00	94.00	27.50	15.40	140.90	41.30	93.00	27.30	15.80	135.40	39.70	90.90	26.60	16.90
	0.17	72	22.2	170.10	49.90	80.60	23.60	12.40	162.50	47.60	77.90	22.80	14.00	154.50	45.30	75.00	22.00	15.60	152.00	44.60	74.10	21.70	16.10	146.30	42.90	72.20	21.10	17.10
	6000	62	16.7	158.20	46.40	151.60	44.40	12.10	150.50	44.10	148.50	43.50	13.70	142.20	41.70	142.20	41.70	15.30	139.60	40.90	139.60	40.90	15.80	133.70	39.20	133.70	39.20	16.90
	2831	67	19.4	172.50	50.60	124.50	36.50	12.40	164.20	48.10	121.40	35.60	14.00	155.50	45.60	118.20	34.70	15.60	152.80	44.80	117.30	34.40	16.10	146.60	43.00	115.10	33.70	17.10
	0.23	72	22.2	186.00	54.50	96.50	28.30	12.70	177.20	51.90	93.70	27.50	14.30	168.00	49.20	90.70	26.60	15.90	165.20	48.40	89.80	26.30	16.40	163.30	47.90	89.20	26.10	16.70
	7333	62	16.7	162.60	47.60	162.60	47.60	12.20	154.40	45.30	154.40	45.30	13.80	145.80	42.70	145.80	42.70	15.40	143.10	41.90	143.10	41.90	15.90	137.00	40.20	137.00	40.20	17.00
	3460	67	19.4	177.40	52.60	136.90	40.10	12.50	168.70	49.40	133.80	39.20	14.10	159.50	46.70	130.60	38.30	15.70	156.70	45.90	129.60	38.00	16.20	150.20	44.00	127.30	37.10	17.20
	0.26	72	22.2	191.30	56.10	104.40	30.60	12.80	182.10	53.40	101.50	29.80	14.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4278	62	16.7	172.00	50.40	139.30	40.80	14.10	164.40	48.20	135.80	39.80	15.90	156.00	45.70	132.10	38.70	17.80	153.50	45.00	131.00	38.40	18.40	147.50	43.20	128.30	37.60	19.60
2019	67	19.4	186.90	54.80	117.60	34.50	14.40	178.70	52.40	114.30	33.50	16.30	169.70	49.70	110.70	32.40	18.20	167.00	48.90	109.60	32.10	18.70	160.60	47.10	107.10	31.40	19.90	
0.17	72	22.2	201.00	58.90	95.60	27.80	14.80	192.20	56.30	91.70	26.90	16.60	182.60	53.50	88.40	25.90	18.50	179.70	52.70	87.30	25.60	19.00	173.00	50.70	85.00	24.90	20.20	
7000	62	16.7	187.30	54.90	178.00	52.20	14.50	178.40	52.30	174.40	51.10	16.20	168.70	49.50	168.70	49.50	18.10	165.80	48.60	165.80	48.60	18.70	159.00	46.60	159.00	46.60	19.90	
3303	67	19.4	204.00	59.80	146.20	42.90	14.90	194.30	57.00	142.70	41.80	16.70	184.00	53.90	138.90	40.70	18.50	180.80	53.00	137.80	40.40	19.10	173.50	50.90	135.20	39.60	20.20	
0.23	72	22.2	219.70	64.40	113.50	33.30	15.30	209.30	61.30	110.10	32.30	17.10	198.30	58.10	106.50	31.20	18.90	194.90	57.10	105.50	30.90	19.40	192.70	56.50	104.80	30.70	19.70	
8556	62	16.7	192.40	56.40	192.40	56.40	14.60	183.00	53.70	183.00	53.70	16.10	172.90	50.70	172.90	50.70	18.20	169.80	49.80	169.80	49.80	18.80	162.70	47.70	162.70	47.70	20.00	
4038	67	19.4	209.80	61.50	160.70	47.10	15.00	199.60	58.50	157.10	46.00	16.80	188.70	55.30	153.30	44.90	18.60	185.40	54.30	152.10	44.60	19.20	177.70	52.10	149.40	43.80	20.30	
0.26	72	22.2	226.00	66.20	122.70	36.00	15.40	215.00	63.00	119.20	34.90	17.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4278	62	16.7	191.50	56.10	154.00	45.10	16.20	182.20	53.40	149.70	43.90	18.30	172.40	50.50	145.10	42.50	20.50	169.40	49.60	143.80	42.10	21.10	162.40	47.60	140.60	41.20	22.50	
2019	67	19.4	208.00	61.00	130.50	38.30	16.60	198.20	58.10	126.40	37.10	18.70	187.80	55.00	122.10	35.80	20.90	184.70	54.10	120.80	35.40	21.50	177.40	52.00	117.90	34.60	22.80	
0.09	72	22.2	223.60	65.50	105.90	31.10	17.00	213.20	62.50	102.00	29.90	19.10	202.40	59.30	98.00	28.70	21.20	199.10	58.40	96.80	28.40	21.80	191.60	56.20	94.10	27.60	23.10	
7000	62	16.7	212.30	62.20	200.10	58.60	16.70	201.30	59.00	195.50	57.30	18.80	189.80	55.60	189.80	55.60	20.90	186.30	54.60	186.30	54.60	21.50	178.40	52.30	178.40	52.30	22.80	
3303	67	19.4	231.40	67.80	164.90	48.30	17.20	219.60	64.40	160.50	47.00	19.30	207.40	60.80	155.90	45.70	21.40	203.80	59.70	154.50	45.30	21.90	195.40	57.30	151.50	44.40	23.20	
0.13	72	22.2	249.20	73.00	128.50	37.70	17.60	236.80	69.40	124.30	36.40	19.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8556	62	16.7	219.10	64.20	219.10	64.20	16.90	207.50	60.80	207.50	60.80	18.90	195.40	57.30	195.40	57.30	21.10	191.80	56.20	191.80	56.20	21.70	183.50	53.80	183.50	53.80	22.90	
4038	67	19.4	239.00	70.00	182.20	53.40	17.40	226.50	66.40	177.60	52.10	19.40	213.70	62.60	173.00	50.70	21.50	209.80	61.50	171.70	50.30	22.10	201.10	58.90	168.60	49.40	23.30	
0.14	72	22.2	257.50	75.50	139.60	40.90	17.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5363	62	16.7	202.30	59.30	168.60	49.40	15.60	192.80	56.50	164.40	48.20	17.60	182.50	53.50	159.80	46.80	19.80	179.30	52.50	158.50	46.40	20.40	171.90	50.40	155.30	45.50	21.90	
2531	67	19.4	220.20	64.50	141.70	41.50	15.90	210.10	61.60	137.70	40.30	18.00	199.20	58.40	133.40	39.10	20.20	195.80	57.40	132.10	38.70	20.80	188.10	55.10	129.00	37.80	22.20	
0.17	72	22.2	237.10	69.50	113.70	33.30	16.30	226.40	66.40	109.90	32.20	18.30	214.90	63.00	105.90	31.00	20.50	211.50	62.00	104.60	30.70	21.10	203.40	59.60	101.90	29.90	22.50	
8000	62	16.7	216.50	63.50	206.60	61.30	15.90	205.90	60.30	202.20	59.30	17.90	194.40	57.00	194.40	57.00	20.10	190.90	56.00	190.90	56.00	20.70	182.80	53.60	182.80	53.60	22.10	
3775	67	19.4	236.20	69.20	169.70	49.70	16.30	224.80	65.90	165.50	48.50	18.30	212.70	62.30	161.10	47.20	20.40	209.00	61.30	159.80	46.80	21.10	200.40	58.70	156.70	45.90	22.40	
0.22	72	22.2	254.70	74.70	131.80	38.60	16.60	242.60	71.10	127.90	37.50	18.70	229.90	67.40	123.70	36.30	20.80	-	-	-	-	-	-	-	-	-	-	
10725	62	16.7	225.20	66.00	225.20	66.00	16.00	213.80	62.70	213.80	62.70	18.10	201.60	59.10	201.60	59.10	20.20	197.90	58.00	197.90	58.00	20.80	189.30	55.50	189.30	55.50	22.20	
5061	67	19.4	246.00	72.10	195.40	57.30	16.40	233.70	68.50	191.10	56.00	18.50	220.70	64.70	186.60	54.70	20.60	216.80	63.50	185.20	54.30	21.20	207.70	60.90	182.10	53.40	22.60	
0.26	72	22.2	265.50	77.80	148.20	43.40	16.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5363	62	16.7	229.20	67.20	188.00	55.10	18.50	218.40	64.00	183.00	53.60	20.90	206.70	60.60	177.70	52.10	23.40	203.20	59.50	176.10	51.60	24.10	195.10	57.20	172.50	50.60	25.70	
2531	67	19.4	249.00	73.00	158.70	45.50	18.90	237.50	69.60	153.90	45.10	21.40	225.30	66.00	148.90	43.70	23.90	221.60	64.90	147.40	43.20	24.60	213.30	62.50	144.10	42.20	26.10	
0.09	72	22.2	267.70	78.50	128.10	37.50	19.40	255.50	74.90	123.50	36.20	21.80	242.80	71.20	118.90	34.80	24.30	239.00	70.10	117.50	34.40	25.00	230.40	67.50	114.50	33.60	26.50	
8000	62	16.7	249.00	73.00	233.00	68.30	18.90	236.50	69.30	227.70	66.70	21.30	223.30	65.50	222.20	65.10	23.80	219.40	64.30	219.40	64.30	24.50	210.40	61.70	210.40	61.70	26.10	
3775	67	19.4	271.20	79.50	192.20	56.30	19.40	257.90	75.60	187.20	54.90	21.90	244.00	71.50	182.00	53.30	24.30	239.90	70.30	180.40	52.90	25.00	230.60	67.60	176.90	51.90	26.50	
0.12	72	22.2	292.10	85.60	150.00	44.00	19.90	278.10	81.50	145.30	42.60	22.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10725	62	16.7	260.60	76.40	260.60	76.40	19.20	247.10	72.40	247.10	72.40	21.60	233.10	68.30														

SKM Packaged Airconditioning Units APMR Series - R410A

FAN PERFORMANCE - 50 Hz

APMR	Air Flow Rate		Internal Static Pressure		External Static Pressure in.wg (Pa)														RPM Range
					0.2 (50)		0.4 (100)		0.5 (125)		0.6 (150)		0.8 (200)		1.0 (250)		1.25 (312)		
	cfm	l/s	in.wg	Pa	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	50 Hz
51050	1260	595	0.22	54	600	0.12	729	0.16	789	0.18	846	0.21	952	0.26	1050	0.31	1162	0.38	788 to 982
	1670	788	0.37	91.39	710	0.23	813	0.28	863	0.31	911	0.33	1004	0.39	1092	0.45	1196	0.53	
	2521	1190	0.85	211.58	985	0.69	1056	0.76	1091	0.79	1126	0.83	1195	0.91	1261	0.99	1343	1.09	
51060	1260	595	0.22	54	600	0.12	729	0.16	789	0.18	846	0.21	952	0.26	1050	0.31	1162	0.38	788 to 982
	2000	944	0.53	131.39	812	0.36	900	0.42	943	0.45	985	0.48	1068	0.55	1147	0.62	1242	0.71	
	2521	1190	0.85	211.58	985	0.69	1056	0.76	1091	0.79	1126	0.83	1195	0.91	1261	0.99	1343	1.09	
51075	1769	835	0.22	54.02	640	0.22	742	0.26	792	0.29	840	0.32	935	0.38	1024	0.44	1130	0.51	782 to 975
	2400	1133	0.38	95.76	797	0.48	875	0.54	913	0.57	951	0.6	1025	0.67	1098	0.74	1186	0.84	
	3538	1670	0.85	211.51	1117	1.42	1170	1.51	1196	1.55	1223	1.6	1275	1.69	1327	1.78	1391	1.9	
51080	1769	835	0.22	54.02	510	0.17	625	0.23	678	0.26	729	0.3	823	0.37	909	0.45	1006	0.55	702 to 875
	2900	1369	0.56	140.42	705	0.55	779	0.64	816	0.69	853	0.73	924	0.83	993	0.93	1076	1.06	
	3538	1670	0.85	211.51	833	0.96	894	1.06	925	1.11	955	1.16	1015	1.28	1075	1.39	1147	1.54	
51100	2387	1126	0.22	54.02	534	0.28	625	0.35	670	0.38	714	0.42	800	0.5	881	0.59	976	0.71	702 to 875
	3220	1520	0.38	94.69	659	0.6	728	0.68	762	0.73	796	0.77	863	0.87	929	0.97	1010	1.1	
	4774	2253	0.85	211.52	925	1.79	972	1.91	995	1.98	1018	2.04	1064	2.17	1110	2.3	1167	2.47	
52115	2674	1262	0.22	54.04	555	0.35	637	0.42	677	0.46	718	0.5	797	0.59	874	0.68	966	0.8	746 to 931
	4000	1888	0.47	116.56	756	1.02	812	1.12	839	1.18	867	1.23	922	1.34	976	1.45	1044	1.6	
	5347	2523	0.85	211.53	981	2.34	1022	2.47	1043	2.54	1064	2.61	1105	2.74	1146	2.88	1198	3.06	
52125	2674	1262	0.22	54.04	555	0.35	637	0.42	677	0.46	718	0.5	797	0.59	874	0.68	966	0.8	746 to 931
	4000	1888	0.47	116.56	756	1.02	812	1.12	839	1.18	867	1.23	922	1.34	976	1.45	1044	1.6	
	5347	2523	0.85	211.53	981	2.34	1022	2.47	1043	2.54	1064	2.61	1105	2.74	1146	2.88	1198	3.06	
52150	3438	1622	0.22	54.04	458	0.4	531	0.49	566	0.54	601	0.59	669	0.7	734	0.82	811	0.98	625 to 780
	5000	2360	0.44	110.11	605	1.06	656	1.18	682	1.24	707	1.31	756	1.44	805	1.58	866	1.77	
	6875	3244	0.85	211.55	800	2.62	839	2.78	857	2.86	876	2.94	913	3.11	950	3.28	995	3.51	
52170	3667	1730	0.19	47.03	0	0	639	0.49	695	0.56	748	0.63	848	0.79	939	0.96	1042	1.18	705 to 879
	6000	2831	0.5	123.4	719	1.2	795	1.38	833	1.48	871	1.58	944	1.79	1016	2.01	1103	2.29	
	7333	3460	0.75	188	852	2.09	915	2.31	946	2.42	977	2.54	1039	2.78	1100	3.02	0	0	
52200	4278	2019	0.19	47.03	0	0	637	0.6	689	0.68	739	0.76	834	0.92	923	1.1	1026	1.34	750 to 936
	7000	3303	0.5	123.4	756	1.65	822	1.85	855	1.95	888	2.06	953	2.28	1017	2.51	1096	2.81	
	8556	4038	0.75	188.04	901	2.9	955	3.14	982	3.26	0	0	0	0	0	0	0	0	
52230	4278	2019	0.23	57	0	0	658	0.63	709	0.71	758	0.79	853	0.96	940	1.14	1042	1.38	750 to 936
	7000	3303	0.61	151.1	793	1.76	858	1.96	891	2.07	924	2.18	989	2.4	1052	2.64	1131	2.95	
	8556	4038	0.93	231.58	949	3.11	0	0	0	0	0	0	0	0	0	0	0	0	
52240	5363	2531	0.19	47.03	0	0	534	0.69	579	0.78	622	0.89	702	1.1	777	1.34	862	1.64	629 to 784
	8000	3775	0.41	101.85	575	1.38	640	1.61	672	1.73	704	1.85	766	2.12	827	2.4	900	2.77	
	10725	5061	0.75	188.02	736	3.11	785	3.4	810	3.55	834	3.7	882	4.02	930	4.35	976	4.689	
52270	5363	2531	0.23	57.01	0	0	552	0.72	596	0.82	638	0.93	718	1.15	791	1.38	875	1.69	629 to 784
	8000	3775	0.5	124.38	604	1.48	669	1.72	701	1.84	732	1.97	794	2.24	854	2.53	925	2.91	
	10725	5061	0.93	231.56	779	3.36	828	3.66	852	3.82	876	3.98	924	4.31	972	4.653	1018	5.011	
52300	5958	2812	0.23	56.99	0	0	553	0.84	594	0.94	635	1.05	711	1.28	783	1.52	867	1.84	706 to 880
	9100	4294	0.52	130.65	635	1.95	693	2.2	722	2.33	750	2.47	806	2.75	861	3.05	928	3.45	
	11917	5624	0.93	231.57	807	4.18	851	4.5	874	4.66	896	4.827	940	5.17	983	5.526	1026	5.895	
52340	5958	2812	0.23	56.99	0	0	553	0.84	594	0.94	635	1.05	711	1.28	783	1.52	867	1.84	706 to 880
	10500	4955	0.71	176.84	719	2.91	770	3.19	795	3.34	819	3.49	868	3.8	917	4.13	977	4.56	
	11917	5624	0.93	231.57	807	4.18	851	4.5	874	4.66	896	4.827	940	5.17	983	5.526	1026	5.895	

Table 6

Areas shaded in blue indicate factory setting of rpm.

Areas shaded in grey indicate operating range using the standard motor. Shift to larger motor size out side this area.

Internal static pressure is based on pressure drops through evaporator coil and fan casing.

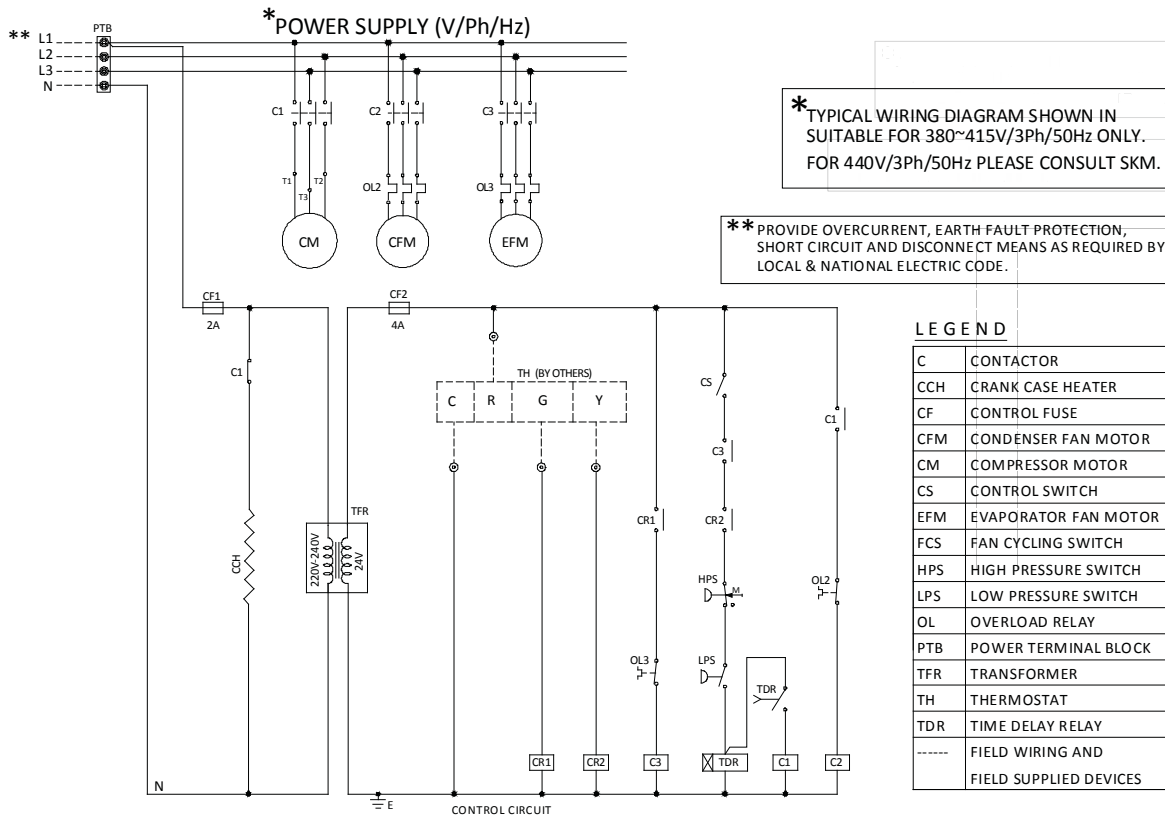
The shown rpm range is with standard pulleys combination.

SKM Packaged Airconditioning Units APMR Series - R410A

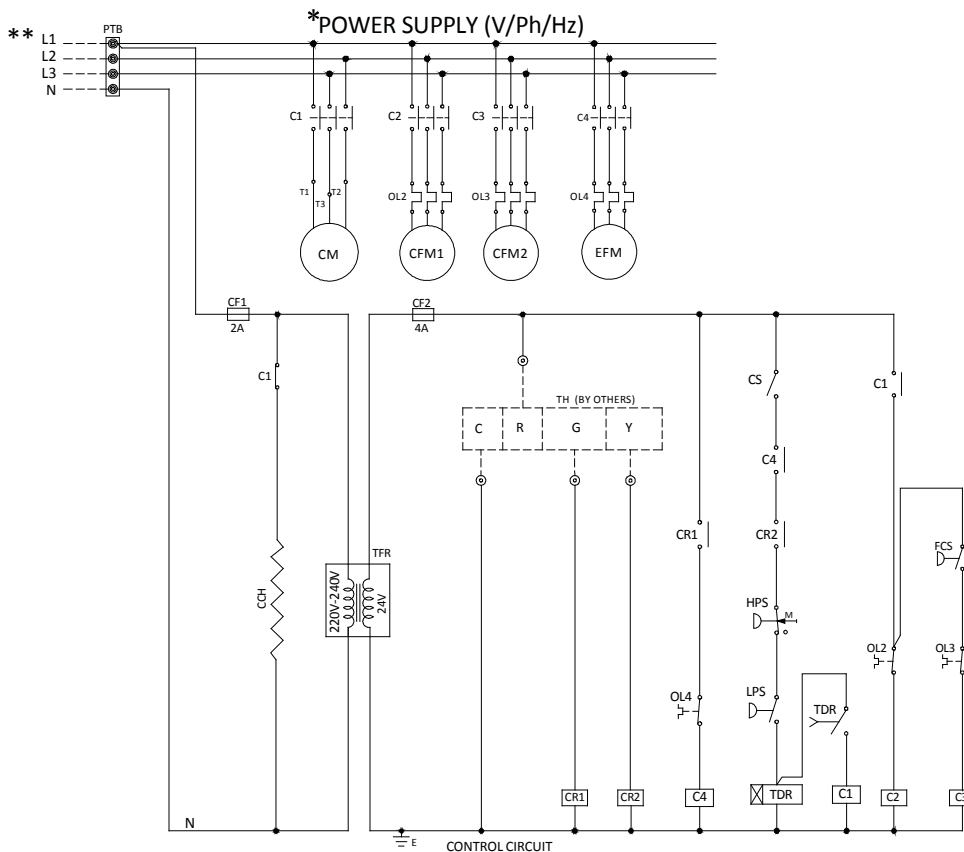


Typical Wiring Diagram

APMR Models - 51050



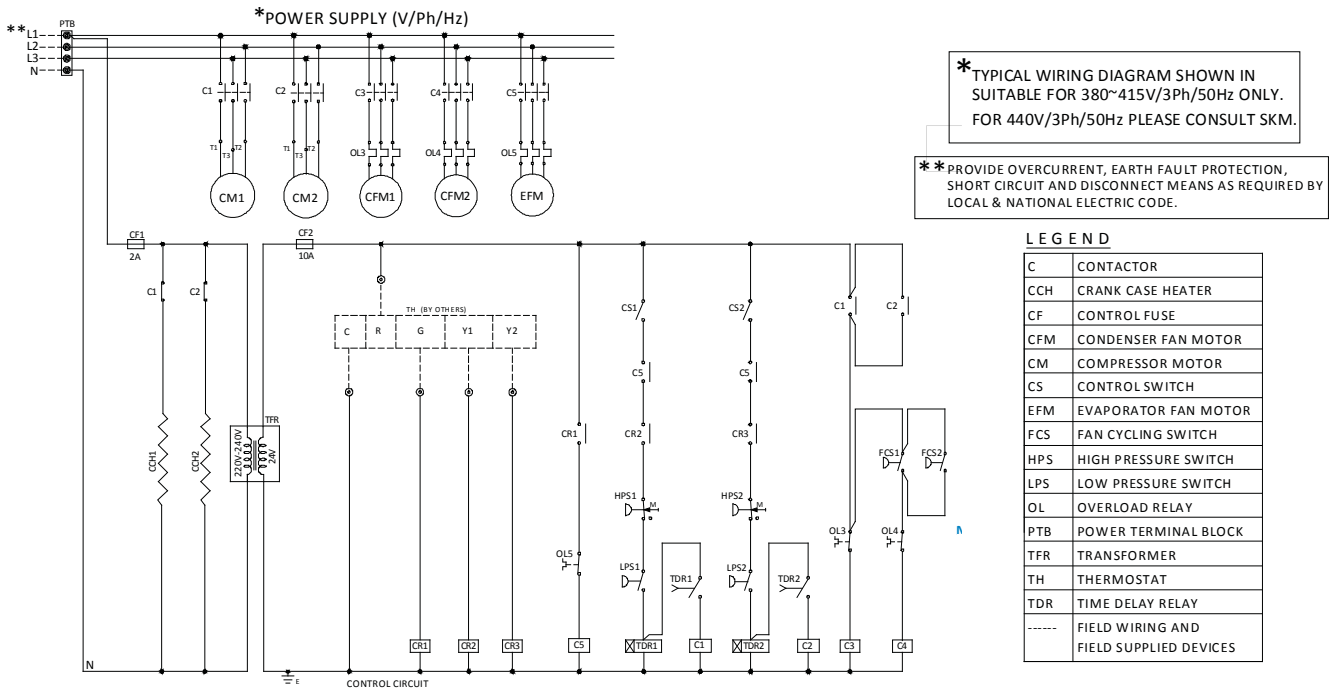
APMR Models - 51060, 51075, 5180 & 51100



SKM Packaged Airconditioning Units APMR Series - R410A

Typical Wiring Diagram

APMR Models - 52115, 52125, 52150, 52170, 52200, 52230, 52240, 52270, 52300 & 52340



ELECTRICAL DATA

POWER SUPPLY : 380- 415V / 3Ph / 50Hz

Model AMPR	Unit Characteristic		Compressor				Condenser Fan Motor		Evaporator Fan Motor		
	MFA	MCA	Quantity	MCC	RLA Each	LRA Each	Quantity	FLA Each	LRA Each	FLA Each	LRA Each
51050	32	18	1	15	11	82	1	0.7	2.5	1.7	6.7
51060	32	21	1	19	13	87	2	0.7	2.5	1.7	6.7
51075	40	25	1	19	16	100	2	0.7	2.5	2.0	8.6
51080	40	25	1	20	15	98	2	0.7	2.5	2.6	11.6
51100	50	30	1	23	19	142	2	0.7	2.5	2.6	11.6
52115	50	32	2	15	11	82	2	0.7	2.5	3.7	17.1
52125	50	37	2	19	13	87	2	0.9	4	3.7	17.1
52150	63	44	2	19	16	100	2	0.9	4	3.7	17.1
52170	63	44	2	20	15	98	2	1.7	5.8	5.2	25.6
52200	80	57	2	23	19	142	2	2.8	11	7.1	35.1
52230	80	60	2	29	20	142	2	2.8	11	7.1	35.1
52240	80	59	2	29	20	142	2	3.5	16	5.2	25.6
52270	100	68	2	30	23	147	2	3.5	16	7.1	35.1
52300	100	72	2	33	25	158	2	3.5	16	7.1	35.1
52340	125	83	2	39	29	197	2	3.5	16	9.2	49.4

Table 7

Voltage imbalance between phases to be <2%

* Note: For power supply 440/3Ph/50Hz consult SKM

Legend

MCC Maximum Continuous Current corresponding to the cutout amps of internal motor protector.
MCA Minimum Circuit Amps for wire sizing
MFA Maximum Fuse Amps for Fuse sizing

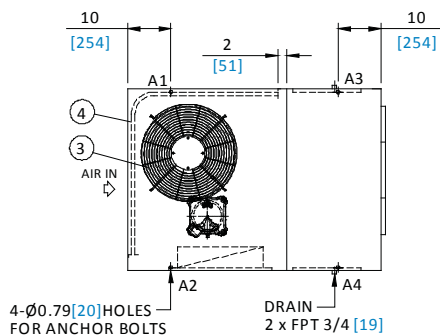
RLA Rated Load Amps
FLA Full Load Amps
LRA Locked Rotor Amps

SKM Packaged Airconditioning Units APMR Series - R410A



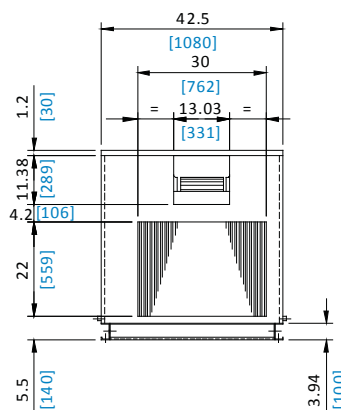
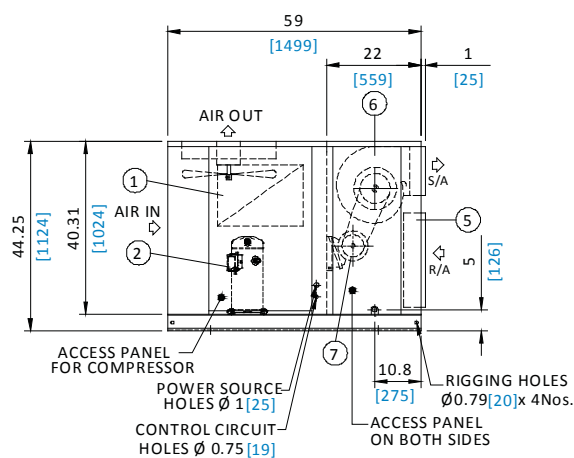
Dimensional Data

APMR Models - 51050

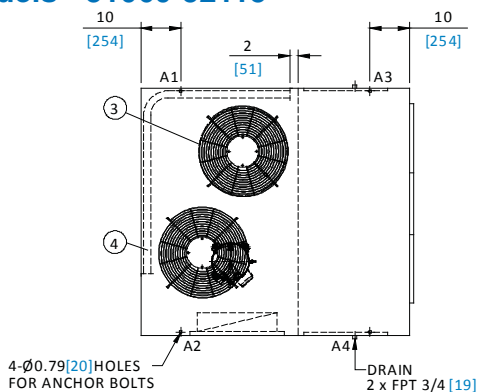


- LEGEND**
- ① CONTROL PANEL
 - ② COMPRESSOR
 - ③ CONDENSER FAN
 - ④ CONDENSER COIL
 - ⑤ EVAPORATOR COIL
 - ⑥ EVAPORATOR FAN
 - ⑦ EVAPORATOR FAN MOTOR

ALL DIMENSIONS ARE IN INCHES [mm]
A1-A4 ARE LOADING POINTS

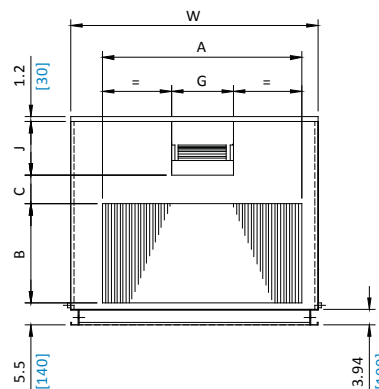
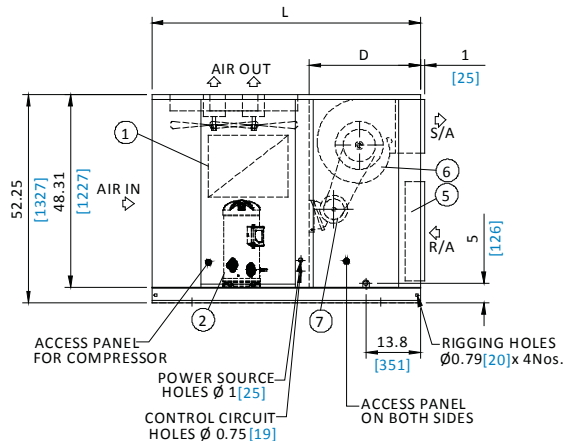


APMR Models - 51060-52115



MODEL APMR	DIMENSIONS							
	L	W	A	B	C	D	J	G
51060	61.5 [1562]	50.6 [1285]	30 [762]	22 [559]	12.17 [309]	22 [559]	11.38 [289]	13.03 [331]
51075		50.6 [1285]	38.6 [979]	24 [610]	10.2 [259]	22 [559]	11.38 [289]	13.03 [331]
51080		50.6 [1285]	38.6 [979]	24 [610]	8.15 [207]	28 [711]	13.43 [341]	15.55 [395]
51100	67.5 [1714]	62 [1575]	50 [1270]	25 [635]	7.13 [181]	28 [711]	13.43 [341]	15.55 [395]
*52115		68 [1727]	56 [1422]	25 [635]	7.13 [181]	28 [711]	13.43 [341]	15.55 [395]

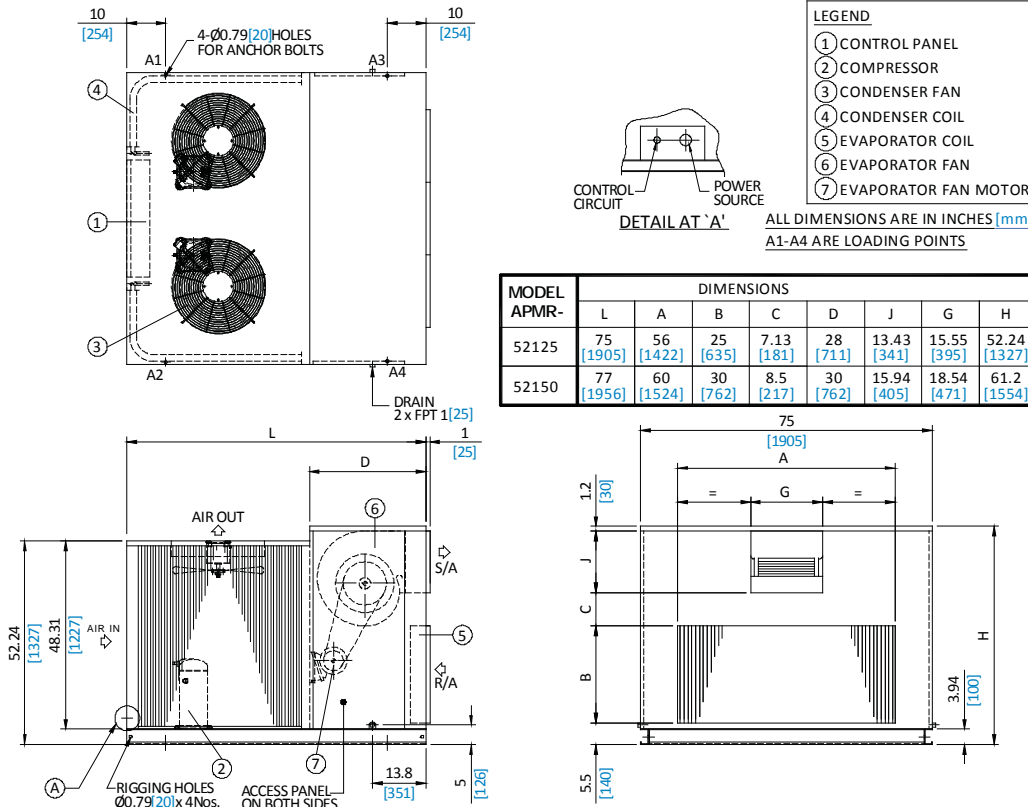
* MODEL WITH 2 COMPRESSOR
ALL DIMENSIONS ARE IN INCHES [mm]
A1-A4 ARE LOADING POINTS



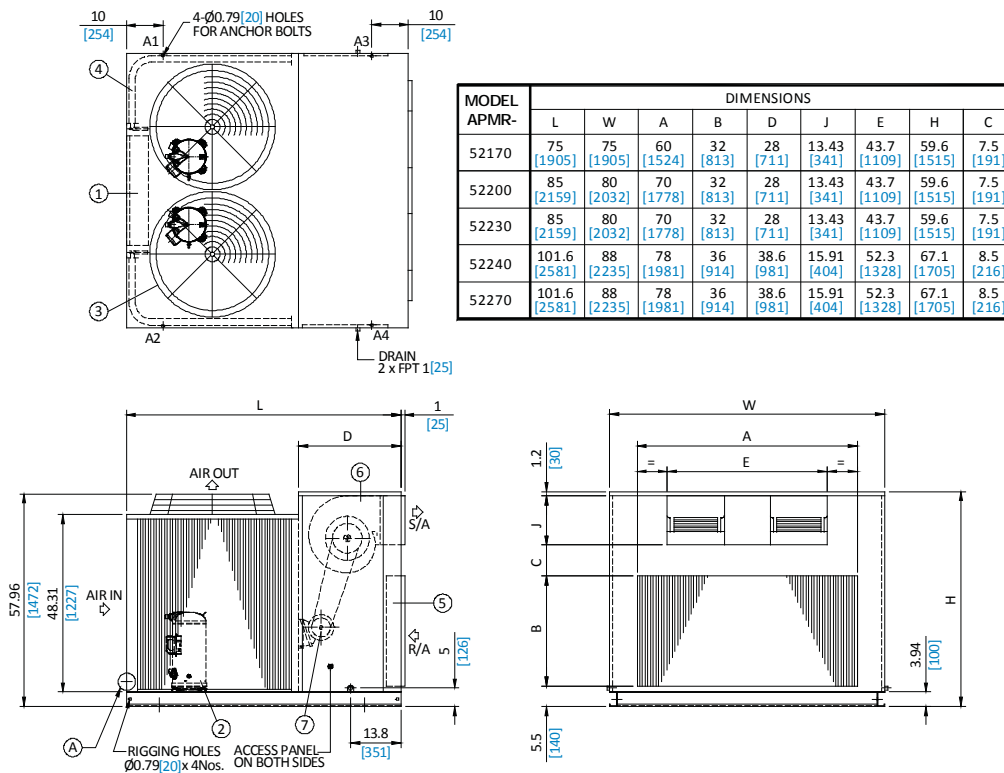
SKM Packaged Airconditioning Units APMR Series - R410A

Dimensional Data

APMR Models - 52125 & 52170



APMR Models - 52170-52270

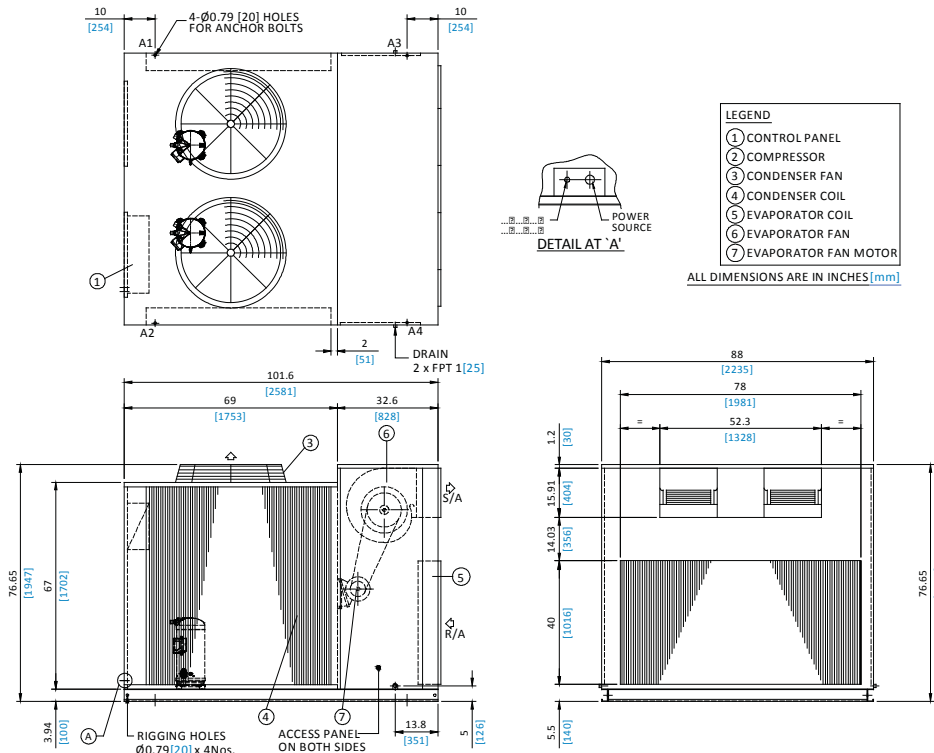


SKM Packaged Airconditioning Units APMR Series - R410A



Dimensional Data

APMR Models - 52300 & 52340



Loading Points

APMR	UNIT	LOADING POINTS				TOTAL WEIGHT
		A1	A2	A3	A4	
51050	lb.	142	155	144	144	586
	Kg.	65	70	65	65	266
51060	lb.	163	191	162	165	681
	Kg.	74	87	74	75	309
51075	lb.	164	191	169	171	694
	Kg.	74	87	77	77	315
51080	lb.	174	222	185	190	771
	Kg.	79	101	84	86	350
51100	lb.	222	254	215	218	909
	Kg.	101	115	98	99	412
52115	lb.	248	305	243	254	1050
	Kg.	112	138	110	115	476
52125	lb.	328	333	282	299	1242
	Kg.	149	151	128	135	563
52150	lb.	329	335	298	315	1277
	Kg.	149	152	135	143	579
52170	lb.	376	383	344	366	1469
	Kg.	171	174	156	166	666
52200	lb.	437	444	403	425	1709
	Kg.	198	201	183	193	775
52230	lb.	438	445	417	441	1741
	Kg.	199	202	189	200	790
52240	lb.	472	479	453	474	1879
	Kg.	214	217	205	215	852
52270	lb.	478	485	470	492	1924
	Kg.	217	220	213	223	873
52300	lb.	540	421	553	535	2049
	Kg.	245	191	251	243	929
52340	lb.	599	481	581	564	2225
	Kg.	272	218	263	256	1009

Table 8

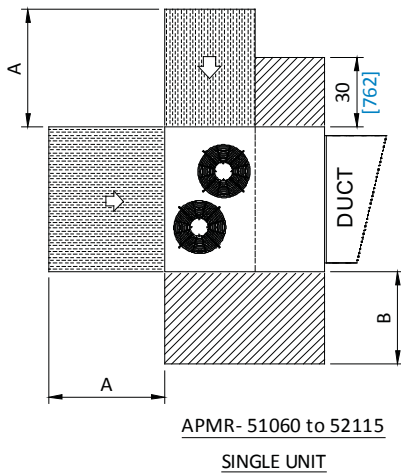
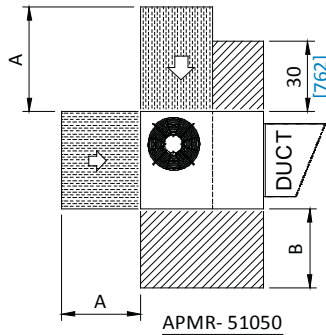




SKM Packaged Airconditioning Units APMR Series - R410A

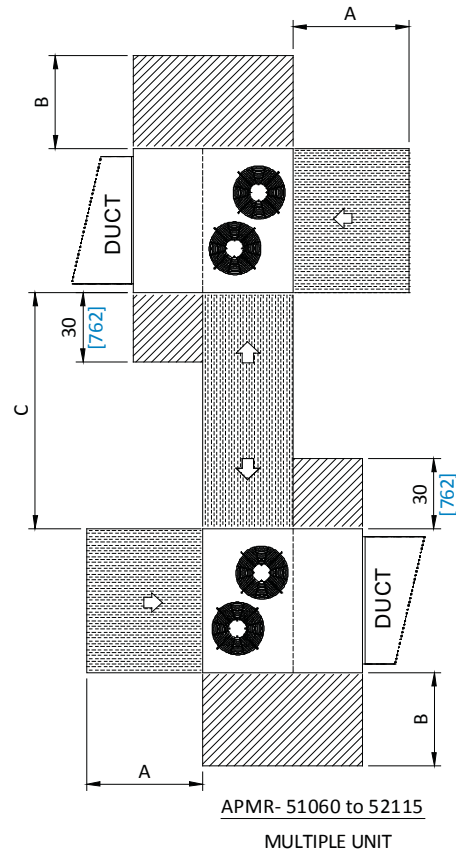
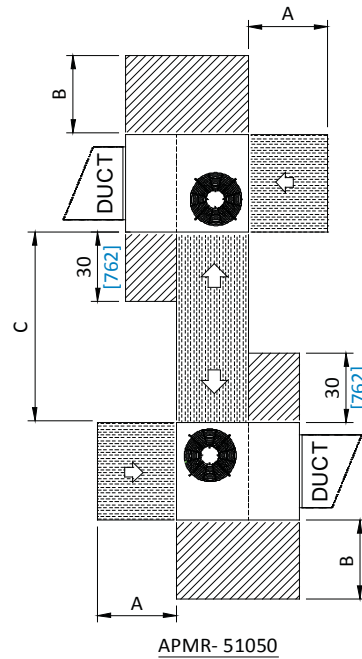
Recommended Clearances

MODEL	A	B	C
APMR- 51050	44 [1118]	34 [864]	72 [1829]
APMR- 51060	52 [1321]	42 [1069]	88 [2235]
APMR- 51075 APMR- 51080		54 [1372]	
APMR- 51100		60 [1524]	
APMR- 52115			

ALL DIMENSIONS ARE IN INCHES[mm]



 SPACING FOR SERVICE
 SPACING FOR AIR FLOW



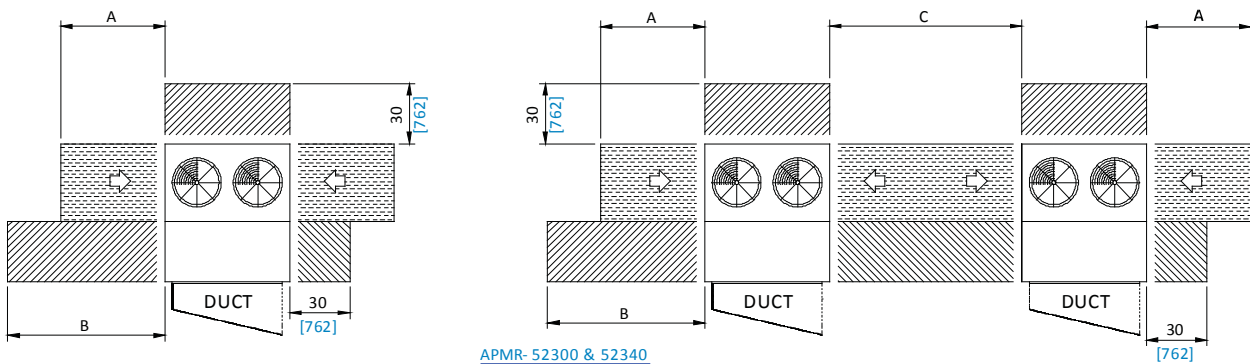
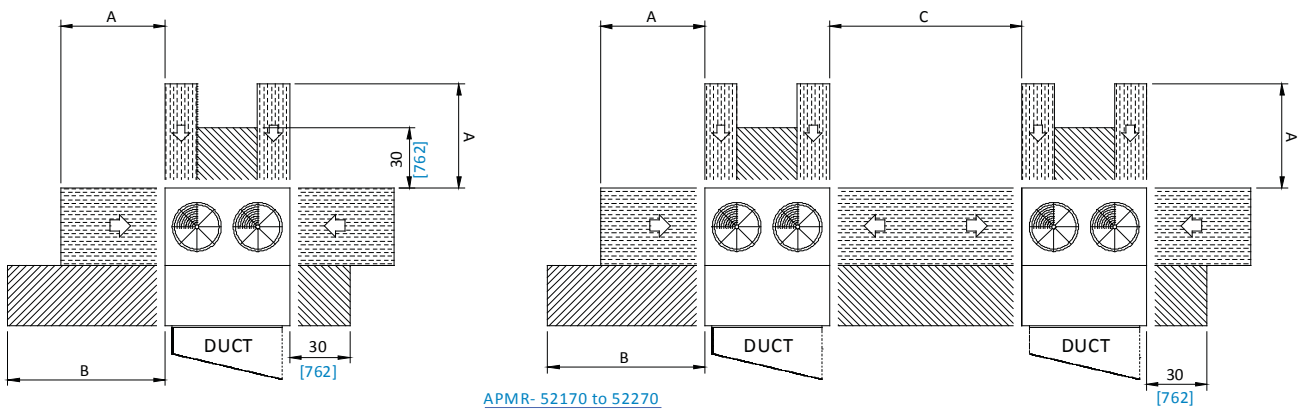
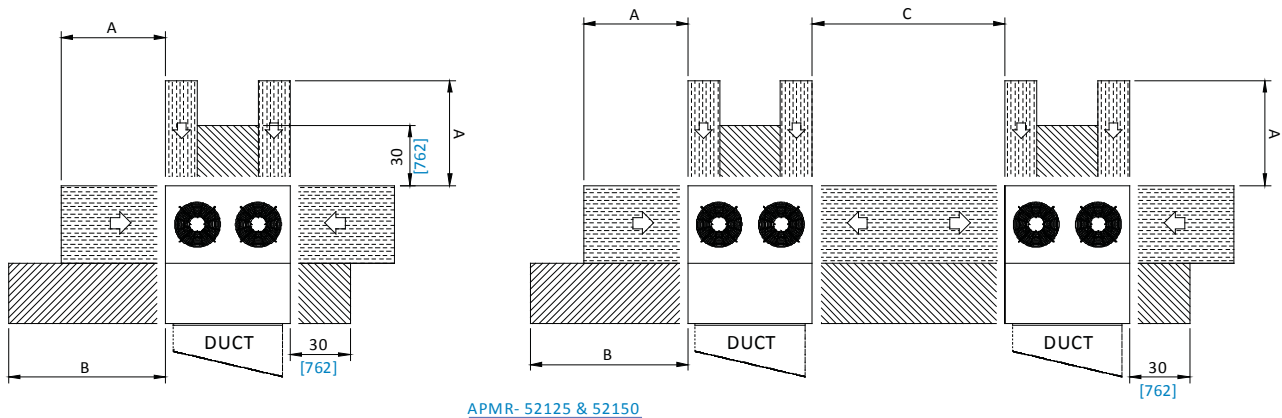
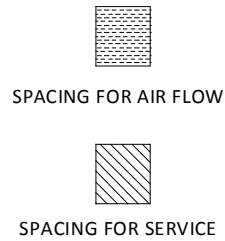
SKM Packaged Airconditioning Units APMR Series - R410A



Recommended Clearances

MODEL	A	B	C
APMR- 52125		60 [1524]	
APMR- 52150 APMR- 52170	52 [1321]	64 [1626]	88 [2438]
APMR- 52200 APMR- 52230		74 [1880]	
APMR- 52240 APMR- 52270		82 [2083]	
APMR- 52300 APMR- 52340	68 [1727]		120 [3048]

DIMENSIONS ARE IN INCHES[mm]



SINGLE UNIT

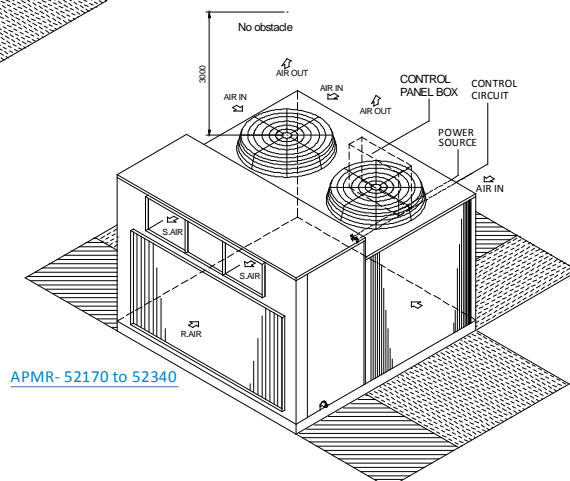
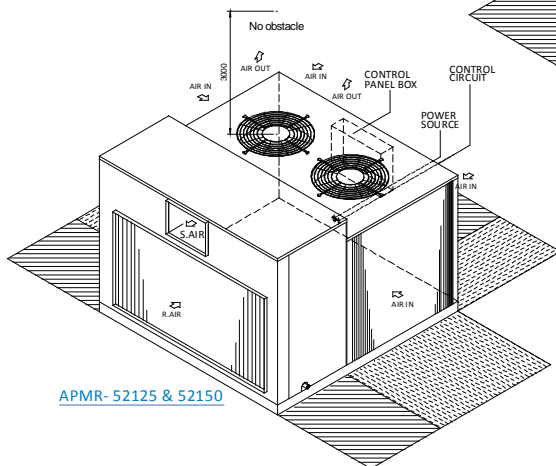
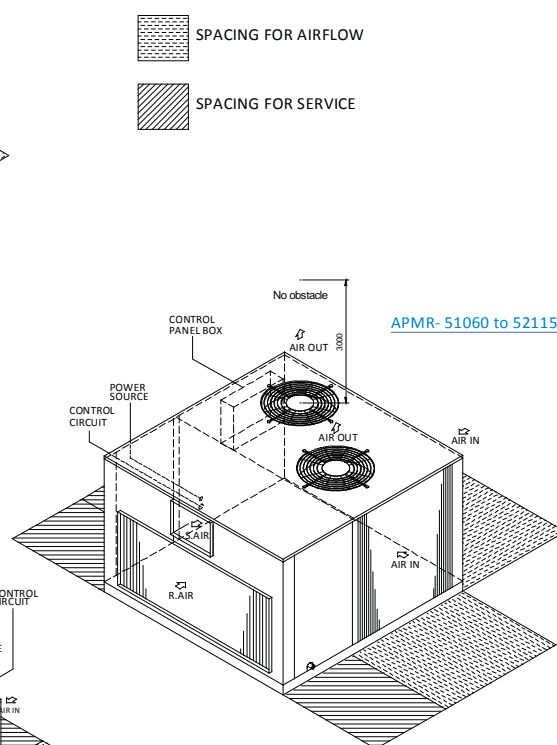
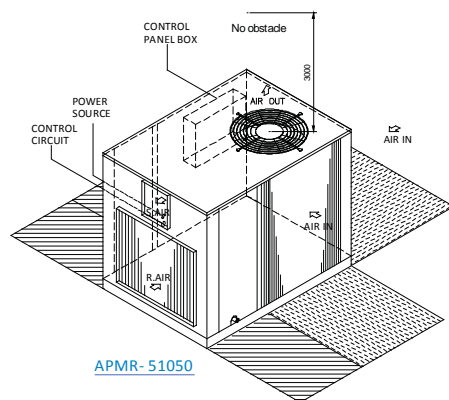
MULTIPLE UNIT



SKM Packaged Airconditioning Units APMR Series - R410A

Installation and Commissioning

- Install the unit in such a location which is flat and strong enough to support its weight.
- Provide a trap of over 2" (50mm) in the drain piping for water seal.
- All field wiring must comply with applicable local and national codes.
- Service spacing should be provided as shown in the figure. If any obstacles are around the unit, distributed air is short-circuited so that the unit stops frequently and access to the unit is difficult for inspection and aftersales services.



GUIDE SPECIFICATIONS

GENERAL

Packaged Air Conditioners shall be composed of compressor(s), condenser & evaporator coils with fans, refrigerant piping, electrical components & enclosing cabinet in one piece. These units shall be factory assembled, internally wired, fully refrigerant charged with R410A, tested under strict quality standards & are suitable for outdoor installation on rooftop or ground level with ducted system. These units shall be capable to operate from 50 °F (10°C) to 125 °F (52°C) ambient temperature without failure & shall be rated in accordance with AHRI-340/360 and AHRI- 210/240 standards. Capacity as per attached schedule.

COMPRESSOR(S)

Compressor shall be hermetically sealed, compact high efficiency and low noise scroll type. These compressors shall be refrigerant gas cooled and furnished with internal motor protection.

CONDENSER COIL(S)

Condenser coils shall be air cooled with integral sub cooler, constructed of special inner grooved seamless copper tubes 3/8" OD mechanically expanded into waffle louver aluminum cross fins with maximum 12 fpi (2.1mm) spacing. These coils shall be tested against leakage by high air pressure air under water, cleaned & dehydrated at the factory.

CONDENSER FAN(S) & MOTOR(S)

Condenser Fans shall be direct driven propeller type discharging air vertically upward, equipped with statically & dynamically balanced aluminum alloy blades, inherent corrosion resistant shaft & PVC coated steel wire fan guard. Condenser fan motor(s) shall be Totally Enclosed Air Over (TEAO), 6 poles with class-F insulation, minimum IP55 protection & wired to unit control panel.

EVAPORATOR COIL

Evaporator coil shall be constructed of seamless copper tubes 3/8" OD mechanically bonded to aluminum (or copper) cross-wave fins with maximum 12fpi (2.1mm) spacing. Coil consists of headers of seamless copper tubing, thermostatic expansion valve(s) & multi-circuited distributor(s). These coils shall be tested against leakage by high air pressure under water, cleaned & dehydrated at the factory. Coil shall conform to AHRI-410.

EVAPORATOR FAN(S) & MOTOR

Fans of evaporator shall be forward curved, double inlet double width (DIDW), centrifugal type, statically & dynamically balanced, mounted on a single heavy duty shaft with permanently lubricated bearings & driven by V belt with an adjustable variable pitch motor pulley. Motor shall be Totally Enclosed Fan Cooled (TEFC), 4 poles, class-F insulated, minimum IP55 protection & wired to unit control panel.

REFRIGERANT PIPING

Refrigerant circuit piping shall be fabricated from ACR grade copper including shut-off valve, filter drier & thermostatic expansion valve. Suction line shall be insulated with ½" (12 mm) wall thickness enclosed cell pipe insulation with maximum k factor 0.28 Btu.in/ft² h^of (0.040 W / m °k).

CASING

Casing shall be made of hot dip galvanized (zinc coated), phosphatized steel sheets which are then electrostatically polyester powder coated to provide an extremely tough, scratch resistance & excellent anti-corrosive protection. Casing shall pass 1000 hours in 5% salt spray testing at 95°F (35°C) & 95% relative humidity as per ASTM B117. Evaporator section shall be sealed with vinyl gaskets & completely insulated faced with black glass tissue (BGT) heavy density, fire retardant, permanent odorless fiberglass insulation of minimum 1" (25 mm) thickness and 32 kg/m³ density having maximum k factor 0.23 Btu.in/ft² h^of. (0.033 W / m °k). Unit casing shall be provided with access panels for easy service and maintenance of all unit parts.

FILTER SECTION

Flat Filter Section incorporating 1" (25mm) or 2" (50mm) thick filter having an average arrestance efficiency of 54% as per ASHRAE Standard 52.1 or equivalent can be provided, if so desired.

CONTROL PANEL

The panel shall be factory wired and conforms to IP54 requirements. Control Panel shall contain individual electrical components, contactors, overload relays, transformer, anti-recycling time delay relay, control circuit disconnect switch, power & control circuit terminal blocks. High / low pressure switches shall be provided for protection.

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