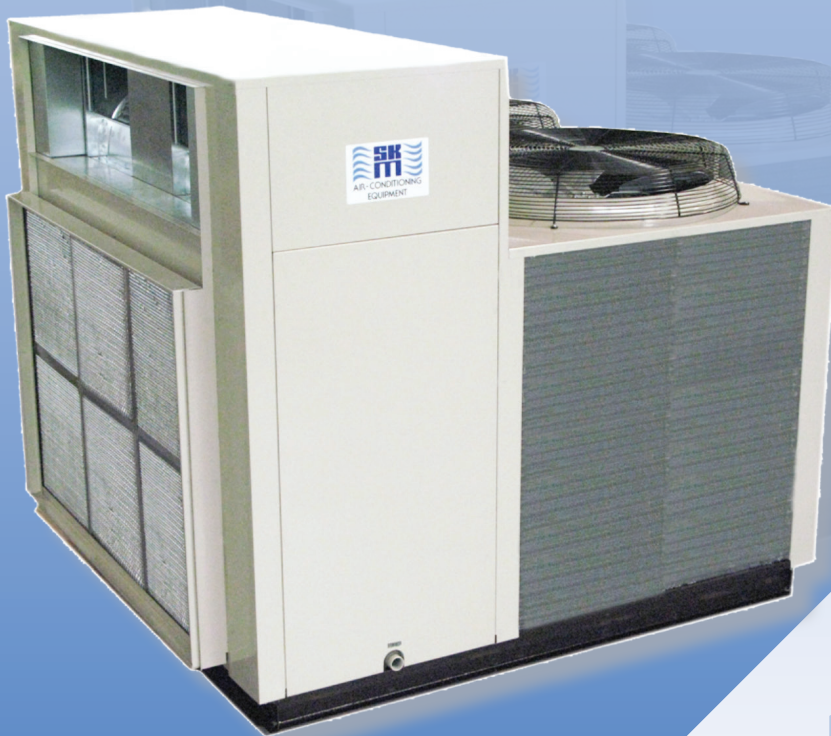


R-22

M-S Series Packaged Air Conditioners



Range 4 TR to 31 TR
(14 kW to 110 kW)



اجهزة تكييف هواء
AIR CONDITIONING EQUIPMENT

*you name it
we cool it*



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Award winner

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BUREAU VERITAS
Certification



SKM Packaged Air Conditioners M-S Series - R22

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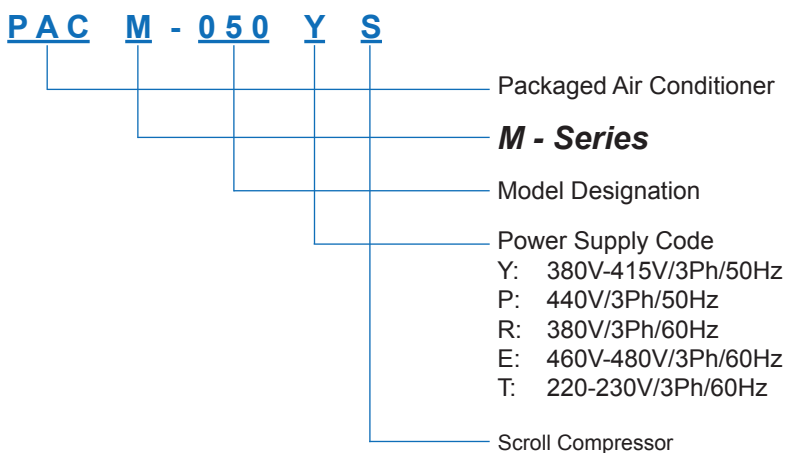
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Legend

The following legends are used throughout this manual:

AFR Air Flow Rate	lb Pound
BPF By-pass Factor	L/S Liters per second
CFM Cubic feet per minute	MBh BTUH x 1000
EER Energy Efficiency Ratio	Pa Pascal
EWB Entering Wet Bulb	Ph Phase
Hz Hertz	PI Power Input for Compressor
in.wg inch water gauge	rpm Rotations per Minute
kW Kilowatt	TR Tons of refrigeration
Kg Kilogram	V Volts

Nomenclature



 **SKM reserves the right to change, in part or in whole the specifications of its Air Conditioning Equipment at any time in order to add the latest technology. Therefore, the enclosed information may change without any prior notice.**

Introduction

SKM **M-S Series** Packaged Air Conditioners are heavy duty self contained units for commercial and top end residential usage.

M-S Series are designed and manufactured to meet the requirements of the Gulf's severe climatic conditions and are built specifically for outdoor installations, either on ground or roof level.

SKM **M-S Series** are available in sizes from 4.0-28.0 TR (14-99 kW) in 50Hz and from 4.5-31.0 TR (16-110 kW) in 60Hz at nominal ARI conditions. Units are manufactured as per ARI-210/240 and 340/360 standards.

The **M-S Series** Packaged Air Conditioners from SKM are factory assembled, leak tested, evacuated, internally wired and fully charged with refrigerant. Each unit is fully factory tested before despatch and is ready for installation. All that is required on site is to connect ducts, drain lines and main power supply which greatly reduces installation charges and labor costs.

SKM **M-S Series** Packaged Air Conditioners are designed to operate in a wide ambient temperature range between 50°F (10°C) to 125°F (51.7°C). Two independent refrigeration circuits are provided where two compressors are used.

SKM **M-S Series** Packaged Air Conditioners are:



You name it....We cool it.

SKM Packaged Air Conditioners

M-S Series - R22

General Features

The SKM **M-S Series** incorporates many salient features which, together, provides a heavy duty, robust, long lasting commercial unit meant for high end residential and most commercial applications.

The **M-S Series** models combine a high efficiency condenser and cooling coil, evaporator blower and heavy duty motor in addition to exhaustive safety and operational controls.

The complete **M-S Series** package unit provides an extremely rugged, heavy duty, long-life, energy efficient, self-contained package air conditioner that will provide cooling with higher efficiency over a long and extended life.

What makes **M-S Series** yet another model in the top class range of SKM products is the use of?

- High efficiency totally sealed 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

Component Features

Compressor

Compressors used in **M-S Series** packaged unit series are hermetically sealed, compact scroll as standard. All standard controls and accessories necessary for safe operation were all provided. Compressors are equipped with internal motor protector; factory-installed crank case heater and rubber grommets/vibrator isolator for controlling structural vibration and with quiet and efficient operation.

Condenser

Condenser coils are air cooled and manufactured from cross fin waffle louvre and Hi-X seamless copper tubes with the internal surface of the tubes modified by serration to ensure optimum heat transfer. All coils are tested against leakage by air pressure of 450 psig (3100 kPa) 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 are propeller type with aluminium alloy blades and are directly driven by electric motors. Motors are 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 provided with suitable acrylic coated fan guard.

Motors are factory wired to the unit control panel where the motor contactors are located to control the operation of these motors.

Evaporator

Evaporator coils are manufactured from seamless copper tubes mechanically bonded to aluminium waven fins to ensure optimum heat transfer. All evaporator coils are tested against leakage by air pressure of 250 psig (1720 kPa) under water. Coils conform to ARI-410.

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 air cooled, 4 pole electric motors. The motors are factory wired to the **M-S Series** control panel where the motor contactors are located to control the operation of the motors. The motors conform with relevant IEC standards.

Casing / Structure

The unit casing used in the **M-S Series** is made of zinc coated galvanized 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 wtesting at 95°F (35°C) and 95% relative humidity as per ASTM B117- 95.

The evaporator section is insulated from all sides with 1" thick fibre 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.

Filter Section

The **M-S Series** Packaged Air Conditioner has a flat filter section incorporating a 1" (25mm) thick cleanable media filter as standard with easy side access for removal and maintenance.

SKM Packaged Air Conditioners M-S Series - R22

Control Panel

The **M-S Series** Packaged Air Conditioner is provided with a weatherproof control panel enclosure comprising all starting, operating and safety controls.

The following are the standard components used in all **M-S Series** Packaged Air Conditioners.

- Individual compressor, condenser fan motor and evaporator fan motor contactors.
- Condenser fan motor and evaporator fan motor overload relays.
- 24 volts low voltage fused transformer for user supplied and installed room thermostat.
- Anti-recycling time delay relay.
- Control circuit disconnect switch.
- Power & control circuit terminal blocks.
- High / Low Pressure Switch.

Optional Accessories

As with all SKM air conditioning units, the **M-S Series** Packaged Units are available with a multitude of optional features available on request.

Voltage Monitoring Modules (VMM)

Provides protection to the **M-S Series** in the event of:

- Phase burn-out
- Phase reversed
- Under voltage / Over voltage on the incoming line voltage

VMM Modifications for DEWA Code (DVM)

To meet DEWA regulations. 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.

2" (50mm) Flat Filter Section (FFS)

For heavy filtration needs a section can be provided without or with 2" (50mm) thick aluminium cleanable filter (2AF).

Liquid Line Sight Glass (RSG)

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

Pump Down Facility with Solenoid Valve (PDS)

For providing means to pump down circuit refrigerant gas into condenser.

Extra Shut-off Valve (XFV)

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

Electric Heating (HC@)

The heater batteries listed below are the standard available for this option:

Electric heater batteries are available with finned type elements. Heating elements are constructed from high quality 80/20 nickel chrome resistance wire centered in metal tubes by compressed magnesium oxide. Helical fins tightly wound round tubular heating element.

Following components are included with electric heater option:

- 3 pole magnetic contactor per stage
- 1 primary over current protection provided by Auto reset high limit safety cut-out
- 1 secondary over current protection provided by Manual reset high limit safety cut-out for positive break
- Control fuse
- Control switch
- Power fuses per NEC if total load exceeds 48 amps
- Factory installed air flow switch

PACM	Heater kW	Stages
050S, 060S 070S, 080S	4.5	1
090S, 100S 105S, 110S 120S, 125S	9	
140S, 145S, 155S 160S, 170S, 220S	18	
240S, 250S 300S, 320S, 360S	24	2

Table 1

Low Voltage Thermostat

(1 or 2 stages as per model) for wall mounting and for either cooling (COTS) or cooling/heating (CHTS) operation.

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.

Double Skin Insulation (DSI)

For evaporator section with foam board insulation.

External Overload Protection (EOP)

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

SKM Packaged Air Conditioners M-S Series - R22

Alternative Condenser Material

Made of copper tubes and alternative fin material and/or protective coating

- For Pre-Coated aluminum fins, specify **(FAP)**
- For Aluminum Fins with Aeris post Coat Protection, specify **(FAA)**
- For Copper Fins, specify **(FC)**
- For Copper Fins with Aeris post Coat Protection, specify **(FCA)**

Alternative Evaporator Material

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

- For Pre-Coated aluminum fins, specify **(EFAP)**
- For Aluminum Fins with Aeris post Coat Protection, specify **(EFAA)**
- For Copper Fins, specify **(EFC)**
- For Copper Fins with Aeris post Coat Protection, specify **(EFCA)**

Factory Installed Option

Microprocessor Based Control (MCP)

The controller consists of modules with on board display and user interface terminals. The modules are available in both panel and DIN rail versions. 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
- BMS connectivity with external converter (Protocol: MODBUS)

Following parameters can display on the controller LCD:

- Return or space air temperature
- High pressure, low pressure and air flow alarm
- Icon of different modes

Room terminal:

It has LCD with icons for remote wall-mounting in the room as a simple user interface, with built in temperature plus humidity sensor and the band management, for use in residential or smaller commercial services applications. Due to the built in temperature sensor, external sensors are not required. (Remote terminal with duct sensor available on request)



Figure 1: Microprocessor Based Control



Figure 2: Room Terminal

SKM Packaged Air Conditioners M-S Series - R22

ENGINEERING SPECIFICATIONS

Model PACM-S		050	060	070	080	090	100	105	110	120		
Cooling Capacity (50 Hz) (1)	MBh	49.1	53.8	58.9	63.4	78.5	89.8	91.6	99.8	111.6		
	kW	14.4	15.7	17.2	18.6	23	26.3	26.9	29.2	32.7		
Cooling Capacity (60 Hz) (1)	MBh	54.3	59.6	65.0	70.1	86.9	98.3	100.8	109.9	122.7		
	kW	15.9	17.4	19.0	20.5	25.5	28.8	29.5	32.2	35.9		
Cooling Capacity (50 Hz) (2)	MBh	44.9	48.9	54.0	57.9	71.7	82.1	83.3	90.7	102.1		
	kW	13.1	14.3	15.8	16.9	21	24.1	24.4	26.6	29.8		
Cooling Capacity (60 Hz) (2)	MBh	49.7	54.4	59.8	64.3	79.7	89.8	91.9	100.2	112.7		
	kW	14.6	16	17.5	18.8	23.4	26.3	26.9	29.4	33.0		
Capacity Steps	%	100-0	100-0	100-0	100-0	100-0	100-50-0	100-0	100-50-0	100-50-0		
Compressor	Type	Hermetic Scroll Compressor										
	Qty	1	1	1	1	1	2	1	2	2		
Condenser	Coil	Type	Waffle louver fins and Hi-X tubes									
		Row/Stage/Qty	3/36/1	3/36/1	3/36/1	3/36/1	3/36/1	3/36/1	3/36/1	3/36/1	3/36/1	
		Face Area	ft ²	7	7	7	7	10	10	10	10	10
			m ²	0.65	0.65	0.65	0.65	0.9	0.9	0.9	0.9	0.9
	Fan	Type	Propeller Direct Drive									
		Code/Qty	628/1	628/1	628/1	628/1	723/1	729/1	729/1	823/1	823/1	
		Air Flow (50/60 Hz)	cfm	3700/4500	3700/4500	3700/4500	3700/4500	5990/6940	6500/7290	6500/7290	7260/8880	7260/8880
	l/s		1750/2120	1750/2120	1750/2120	1750/2120	2830/3280	3070/3440	3070/3440	3430/4190	3430/4190	
	Motor	Type	Totally enclosed, Class-F insulation, 6-pole, IP55 Protected									
		Size (50/60Hz)	kW	0.37/0.55	0.37/0.55	0.37/0.55	0.37/0.55	0.75/1.1	1.1/1.5	1.1/1.5	1.1/1.5	1.1/1.5
Evaporator	Coil	Type	Cross Wave Fin, Staggered Tubes									
		Row/Stage	3/18	3/22	3/22	3/24	3/24	3/24	3/24	3/24	4/24	
		Fin Spacing	fpi/mm	12/2.1	10/2.5	10/2.5	10/2.5	10/2.5	10/2.5	12/2.1	12/2.1	10/2.5
		Face Area	ft ²	3.54	4.33	4.33	4.72	6.42	6.42	6.42	6.42	6.42
	m ²		0.33	0.4	0.4	0.44	0.6	0.6	0.6	0.6	0.60	
	Fan	Type	Centrifugal DIDW Belt Drive									
		Code/Qty	10/10	10/10	10/10	10/10	12/12	12/12	12/12	12/12	12/12	
		Air Flow (50/60 Hz)	cfm	1620	1940	2220	2400	3000	3180	3180	3180	3350
	l/s		764	915	1048	1133	1416	1501	1501	1501	1581	
	Motor	Type	Totally Enclosed, Class F insulated, IP55 Protected									
Size (50/60Hz)		kW	0.55	0.75	1.1	1.1	1.1	1.5	1.5	1.5	1.5	
Refrigerant Operating Charge (R-22)	lbs/kg	7.2/3.3	7.5/3.4	7.5/3.4	7.9/3.5	9.7/4.4	2(6.8/3.1)	13.8/6.3	2(6.8/3.1)	2(7.0/3.2)		
Operating Weight Approximate	lbs/kg	413/187	446/203	458/208	465/211	705/320	772/350	770/349	811/368	827/375		

Table 2

Notes:

- Capacity rating as per AHRI standard 210/240 & 340/360.
- Cooling Capacity based on evaporator entering air conditions of 80°/67°F (27°/19.5°C) dry bulb/wet bulb and condenser entering air temperature of 115°F db (46°C)
- Capacity is a gross capacity which does not include the effect of a evaporator fan motor heat.

SKM Packaged Air Conditioners M-S Series - R22

ENGINEERING SPECIFICATIONS

125	140	145	155	160	170	220	240	250	300	320	360
110.1	137.7	139.8	153.8	154.0	159.7	180.8	216.3	226.0	257.1	290.4	335.5
32.2	40.3	41.0	45.1	45.1	46.8	52.9	63.4	66.2	75.9	85.1	98.3
121.1	152.3	154.3	169.6	170.3	177.1	198.8	236.9	248.2	283.1	320.4	372.1
35.5	44.6	45.2	49.7	49.9	51.9	58.2	69.4	72.7	83.0	93.9	109.1
99.4	126.2	126.3	139.2	141.0	145.8	164.6	195.6	203.1	232.1	262.6	310.6
29.1	37.0	37.0	40.8	41.3	42.7	48.2	57.3	59.5	68.0	77.0	91.0
110.0	140.1	139.8	154.4	156.5	162.3	181.4	215.1	224.2	256.6	291.7	345.4
32.2	41.1	41.0	45.3	45.9	47.6	53.2	63.1	65.7	75.2	85.5	101.2
100-0	100-50-0	100-0	100-0	100-50-0	100-50-0	100-50-0	100-50-0	100-50-0	100-50-0	100-50-0	100-50-0
Hermetic Scroll Compressor											
1	2	1	1	2	2	2	2	2	2	2	2
Waffle louver fins and Hi-X tubes											
3/36/1	3/40/2	3/40/2	3/40/2	3/40/2	3/40/2	3/40/2	3/40/2	3/40/2	3/48/2	3/48/2	3/48/2
10	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	34.4	34.4	34.4
0.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.2	3.2	3.2
Propeller Direct Drive											
823/1	723/2	723/2	723/2	723/2	723/2	729/2	729/2	729/2	823/2	823/2	829/2
7260/8880	12140/14100	12140/14100	12140/14100	12140/14100	12140/14100	13260/14960	13260/14960	13260/14960	18000/21900	18000/21900	20380/24760
3430/4190	5729/6654	5729/6654	5729/6654	5729/6654	5729/6654	6257/7060	6257/7060	6257/7060	8490/10330	8490/10330	9618/11685
Totally enclosed, Class-F insulation, 6-pole, IP55 Protected											
1.1/1.5	2(0.75/1.1)	2(0.75/1.1)	2(0.75/1.1)	2(0.75/1.1)	2(0.75/1.1)	2(1.1/1.5)	2(1.1/1.5)	2(1.1/1.5)	2(1.5/2.2)	2(1.5/2.2)	2(1.5/2.2)
Cross Wave Fin, Staggered Tubes											
4/24	3/24	3/24	3/27	3/27	3/36	3/36	3/36	4/36	3/36	4/36	4/42
10/2.5	12/2.1	12/2.1	12/2.1	12/2.1	10/2.5	10/2.5	12/2.1	10/2.5	12/2.1	10/2.5	10/2.5
6.42	9.26	9.26	10.42	10.42	13.9	13.9	13.9	13.9	17.5	17.5	20.42
0.60	0.86	0.86	0.97	0.97	1.29	1.29	1.29	1.29	1.62	1.62	1.9
Centrifugal DIDW Belt Drive											
12/12	15/15	15/15	15/15	15/15	15/15	12/12 R2	12/12 R2	12/12 R2	15/15 R2	15/15 R2	15/15 R2
3350	5010	5010	5500	5500	6000	6670	6950	7230	7500	9100	10400
1581	2364	2364	2595	2595	2831	3148	3280	3412	3539	4294	4908
Totally Enclosed, Class F insulated, IP55 Protected											
1.5	2.2	2.2	2.2	2.2	3.0	3.0	4.0	4.0	3.0	3.0	4.0
14.3/6.5	2(10.1/4.6)	19.1/8.7	19.6/8.9	2(10.1/4.6)	2(10.5/4.8)	2(11.0/5.0)	2(11.7/5.3)	2(12.2/5.5)	2(15.4/7.0)	2(17.4/7.9)	2(19.8/9)
786/356	1196/542	1155/524	1166/529	1213/550	1272/577	1421/644	1443/655	1461/663	1475/669	1474/668	1535/698

Table 2 ends

Notes:

- Capacity rating as per AHRI standard 210/240 & 340/360.
- Cooling Capacity based on evaporator entering air conditions of 80°/67°F (27°/19.5°C) dry bulb/wet bulb and condenser entering air temperature of 115°F db (46°C)
- Capacity is a gross capacity which does not include the effect of a evaporator fan motor heat.

SKM Packaged Air Conditioners M-S Series - R22

CAPACITY RATINGS - 50 Hz

Model PACM-S	AFR		Condenser Entering Air Temperature °F (°C)																							
	cfm	EWB	95°F (35°C)						105°F (40°C)						115°F (46°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*				
[EER]	(BPF)	°F	°C	MBh	kW	MBh	kW	kW	MBh	kW	MBh	kW	kW	MBh	kW	MBh	kW	kW	MBh	kW	MBh	kW	kW			
300 [9.5]	7000	62	16.7	231.7	67.9	199.0	58.3	20.4	220.7	64.7	194.2	56.9	21.9	208.9	61.2	189.3	55.5	23.5	196.5	57.6	184.1	54.0	25.3			
	3303	67	19.4	253.7	74.4	166.7	48.9	21.1	241.9	70.9	162.1	47.5	22.8	229.3	67.2	157.4	46.1	24.6	216.1	63.3	152.4	44.7	26.6			
	0.21	72	22.2	274.5	80.4	133.0	39.0	21.8	261.9	76.8	128.7	37.7	23.7	248.5	72.8	124.1	36.4	25.7	234.5	68.7	119.4	35.0	27.8			
	7500	62	16.7	234.7	68.8	205.9	60.4	20.5	223.4	65.5	201.2	59.0	22.0	211.4	62.0	196.2	57.5	23.7	198.8	58.3	191.0	56.0	25.5			
	3539	67	19.4	257.1	75.3	171.9	50.4	21.2	245.0	71.8	167.3	49.0	22.9	232.1	68.0	162.5	47.6	24.8	218.7	64.1	157.4	46.1	26.8			
	0.22	72	22.2	278.2	81.5	136.4	40.0	22.0	265.3	77.8	132.0	38.7	23.8	251.6	73.8	127.4	37.3	25.8	237.4	69.6	122.7	36.0	28.0			
	8500	62	16.7	239.8	70.3	219.4	64.3	20.7	228.2	66.9	214.6	62.9	22.2	215.7	63.2	209.5	61.4	23.9	202.7	59.4	202.7	59.4	25.7			
	4011	67	19.4	262.8	77.0	181.8	53.3	21.4	250.3	73.4	177.1	51.9	23.2	237.0	69.5	172.2	50.5	25.0	223.1	65.4	167.1	49.0	27.1			
	0.24	72	22.2	284.6	83.4	142.8	41.9	22.2	271.2	79.5	138.4	40.6	24.1	257.0	75.3	133.8	39.2	26.1	242.2	71.0	129.0	37.8	28.3			
320 [9.6]	8310	62	16.7	260.0	76.2	222.2	65.1	23.5	248.2	72.7	217.2	63.7	25.3	235.9	69.1	212.0	62.2	27.0	222.4	65.2	206.5	60.5	28.9			
	3921	67	19.4	285.1	83.6	186.2	54.6	24.6	272.2	79.8	181.3	53.2	26.4	258.4	75.7	176.1	51.6	28.3	243.2	71.3	170.4	49.9	30.5			
	0.21	72	22.2	308.7	90.5	148.6	43.6	25.5	294.4	86.3	143.7	42.1	27.5	278.4	81.6	138.4	40.6	29.6	261.8	76.7	132.9	39.0	32.1			
	9100	62	16.7	264.7	77.6	232.6	68.2	23.7	252.6	74.0	227.6	66.7	25.5	239.8	70.3	222.3	65.2	27.2	225.8	66.2	216.6	63.5	29.2			
	4294	67	19.4	290.4	85.1	194.1	56.9	24.8	277.1	81.2	189.0	55.4	26.6	262.6	77.0	183.6	53.8	28.6	246.9	72.4	177.9	52.1	30.8			
	0.22	72	22.2	314.6	92.2	153.8	45.1	25.7	299.6	87.8	148.7	43.6	27.7	282.8	82.9	143.3	42.0	29.9	265.6	77.9	137.7	40.4	32.4			
	9680	62	16.7	267.8	78.5	240.1	70.4	23.9	255.3	74.8	235.0	68.9	25.6	242.3	71.0	229.7	67.3	27.4	228.0	66.8	223.9	65.6	29.3			
	4568	67	19.4	293.8	86.1	199.6	58.5	24.9	280.1	82.1	194.4	57.0	26.8	265.2	77.7	189.0	55.4	28.7	249.2	73.0	183.2	53.7	31.0			
	0.23	72	22.2	318.3	93.3	157.4	46.1	25.9	302.8	88.8	152.3	44.6	27.9	285.5	83.7	146.7	43.0	30.1	268.0	78.6	141.0	41.3	32.6			
360 [10.8]	9450	62	16.7	302.3	88.6	256.1	75.1	23.8	291.1	85.3	251.4	73.7	26.8	279.4	81.9	246.5	72.2	29.9	268.1	78.6	241.7	70.9	32.7			
	4459	67	19.4	329.1	96.4	214.0	62.7	24.4	317.3	93.0	209.6	61.4	27.4	305.2	89.4	205.0	60.1	30.5	293.5	86.0	200.6	58.8	33.2			
	0.20	72	22.2	354.3	103.9	170.4	50.0	24.9	342.0	100.2	166.2	48.7	28.0	329.3	96.5	161.9	47.4	31.0	323.1	94.7	159.8	46.8	32.4			
	10400	62	16.7	307.8	90.2	268.6	78.7	23.9	296.3	86.8	263.8	77.3	26.9	284.3	83.3	258.9	75.9	30.0	272.7	79.9	254.1	74.5	32.8			
	4908	67	19.4	335.2	98.3	223.4	65.5	24.5	323.1	94.7	218.9	64.2	27.6	310.6	91.0	214.2	62.8	30.6	298.7	87.5	209.7	61.5	33.3			
	0.22	72	22.2	361.1	105.8	176.5	51.7	25.1	348.3	102.1	172.2	50.5	28.1	335.2	98.3	167.9	49.2	31.1	328.8	96.4	165.8	48.6	32.5			
	11550	62	16.7	313.2	91.8	283.2	83.0	24.0	301.4	88.3	278.3	81.6	27.0	289.2	84.8	273.4	80.1	30.1	277.3	81.3	268.6	78.7	32.9			
	5450	67	19.4	341.4	100.1	234.1	68.6	24.7	328.9	96.4	229.5	67.3	27.7	316.1	92.6	224.9	65.9	30.7	309.8	90.8	222.6	65.2	32.1			
	0.23	72	22.2	367.8	107.8	183.5	53.8	25.2	354.6	103.9	179.2	52.5	28.3	341.1	100.0	174.9	51.3	31.3	334.6	98.1	172.7	50.6	32.6			

Table 3 ends

Notes :

1. See Page 2 for legend
2. Ratings are based on 80°F (27°C) entering air dry bulb temperature.
3. Direct interpolation is permissible. Do not extrapolate.
4. Shaded values are at 120°F (49°C) condenser entering air temperature.
5. The EER shown are at standard AHRI conditions in Btuh/W.
6. SKM computer selections are available for quick and accurate selections.
7. Where blanks replace capacity data, unit is not suitable for operation at that condition.

* Power input mentioned in this page should not be used for cable or fuse selection. MCA and MFA values given in the electrical data page (12) should be referred for the same.

SKM Packaged Air Conditioners M-S Series - R22

CAPACITY RATINGS - 60 Hz

Model PACM-S	AFR		Condenser Entering Air Temperature °F (°C)																				
	cfm	l/s	EWB		95°F (35°C)			105°F (40°C)			115°F (46°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*							
[EER]	(BPF)	°F	°C	MBh	kW	MBh	kW	kW	MBh	kW	MBh	kW	kW	MBh	kW	MBh	kW	kW	MBh	kW	MBh	kW	kW
300 [8.7]	7000	62	16.7	255.5	74.9	209.4	61.4	24.0	243.8	71.5	204.2	59.9	25.7	231.3	67.8	198.8	58.3	27.6	218.1	63.9	193.1	56.6	29.6
	3303	67	19.4	279.1	81.8	176.7	51.8	24.9	266.6	78.1	171.7	50.3	26.8	253.2	74.2	166.5	48.8	28.9	239.1	70.1	161.1	47.2	31.1
	0.21	72	22.2	301.5	88.4	142.5	41.8	25.7	288.2	84.5	137.8	40.4	27.8	274.0	80.3	132.8	38.9	30.1	259.0	75.9	127.7	37.4	32.5
	7500	62	16.7	259.0	75.9	216.4	63.4	24.1	247.1	72.4	211.3	61.9	25.9	234.3	68.7	205.8	60.3	27.8	220.8	64.7	200.1	58.6	29.8
	3539	67	19.4	283.1	83.0	181.9	53.3	25.0	270.3	79.2	176.9	51.9	27.0	256.6	75.2	171.7	50.3	29.1	242.2	71.0	166.3	48.7	31.3
	0.22	72	22.2	305.8	89.6	146.0	42.8	25.9	292.2	85.6	141.2	41.4	28.0	277.7	81.4	136.2	39.9	30.3	262.4	76.9	131.0	38.4	32.8
	8500	62	16.7	265.2	77.7	230.0	67.4	24.4	252.7	74.1	224.8	65.9	26.1	239.4	70.2	219.2	64.3	28.1	225.4	66.1	213.4	62.6	30.2
	4011	67	19.4	289.9	85.0	192.0	56.3	25.3	276.6	81.1	187.0	54.8	27.2	262.4	76.9	181.7	53.2	29.4	247.4	72.5	176.0	51.6	31.7
	0.24	72	22.2	313.3	91.8	152.5	44.7	26.1	299.1	87.7	147.7	43.3	28.3	284.0	83.2	142.6	41.8	30.6	268.2	78.6	137.4	40.3	33.2
320 [8.9]	8310	62	16.7	287.3	84.2	233.9	68.6	27.7	274.7	80.5	228.5	67.0	29.7	261.7	76.7	222.9	65.3	31.7	247.4	72.5	216.9	63.6	34.0
	3921	67	19.4	314.1	92.1	197.4	57.9	28.9	300.7	88.1	192.2	56.3	31.0	286.5	84.0	186.7	54.7	33.2	270.6	79.3	180.7	53.0	35.7
	0.21	72	22.2	339.6	99.5	159.3	46.7	30.0	325.0	95.3	154.2	45.2	32.2	309.0	90.6	148.7	43.6	34.6	300.4	88.0	145.8	42.7	36.0
	9100	62	16.7	292.9	85.8	244.5	71.7	27.9	279.9	82.1	239.0	70.1	29.9	266.5	78.1	233.4	68.4	32.0	251.7	73.8	222.2	66.6	34.3
	4294	67	19.4	320.4	93.9	205.4	60.2	29.1	306.6	89.9	200.1	58.7	31.3	291.7	85.5	194.5	57.0	33.5	275.2	80.6	188.3	55.2	36.1
	0.22	72	22.2	346.5	101.6	164.7	48.3	30.3	331.3	97.1	159.4	46.7	32.6	314.5	92.2	153.7	45.1	35.0	305.5	89.5	150.7	44.2	36.4
	9680	62	16.7	296.4	86.9	252.1	73.9	28.1	283.3	83.0	246.5	72.3	30.1	269.5	79.0	240.8	70.6	32.2	254.3	74.5	234.5	68.7	34.5
	4568	67	19.4	324.5	95.1	211.1	61.9	29.3	310.3	90.9	205.8	60.3	31.5	295.0	86.5	200.0	58.6	33.7	278.0	81.5	193.7	56.8	36.3
	0.23	72	22.2	350.9	102.9	168.3	49.3	30.5	335.3	98.3	163.1	47.8	32.8	317.9	93.2	157.2	46.1	35.3	308.7	90.5	154.2	45.2	36.6
360 [9.9]	9450	62	16.7	335.7	98.4	270.6	79.3	28.7	323.6	94.8	265.3	77.8	32.4	310.9	91.1	259.8	76.2	36.1	304.6	89.3	257.1	75.4	37.9
	4459	67	19.4	364.7	106.9	228.0	66.8	29.5	351.9	103.1	222.9	65.3	33.1	338.8	99.3	217.8	63.8	36.8	332.3	97.4	215.3	63.1	38.5
	0.20	72	22.2	392.2	114.9	183.6	53.8	30.1	378.8	111.0	178.9	52.4	33.8	365.1	107.0	174.1	51.0	37.5	358.5	105.1	171.9	50.4	39.1
	10400	62	16.7	342.4	100.4	283.3	83.0	28.9	329.8	96.7	277.9	81.5	32.6	316.8	92.8	272.4	79.8	36.3	310.3	91.0	269.7	79.1	38.0
	4908	67	19.4	372.1	109.1	237.4	69.6	29.6	358.9	105.2	232.4	68.1	33.3	345.4	101.2	227.3	66.6	37.0	338.8	99.3	224.8	65.9	38.7
	0.22	72	22.2	400.2	117.3	189.9	55.7	30.3	386.4	113.2	185.1	54.3	34.0	372.3	109.1	180.3	52.8	37.6	365.5	107.1	178.0	52.2	39.3
	11550	62	16.7	349.0	102.3	298.1	87.4	29.1	336.0	98.5	292.6	85.8	32.7	322.6	94.6	287.1	84.1	36.4	316.1	92.6	284.4	83.3	38.1
	5450	67	19.4	379.5	111.2	248.5	72.8	29.8	365.9	107.2	243.4	71.3	33.5	352.0	103.2	238.1	69.8	37.2	345.2	101.2	235.6	69.1	38.8
	0.23	72	22.2	408.3	119.7	197.0	57.7	30.5	394.0	115.5	192.2	56.3	34.2	379.5	111.2	187.4	54.9	37.8	372.6	109.2	185.1	54.3	39.4

Table 4 ends

Notes :

1. See Page 2 for legend
2. Ratings are based on 80°F (27°C) entering air dry bulb temperature.
3. Direct interpolation is permissible. Do not extrapolate.
4. Shaded values are at 120°F (49°C) condenser entering air temperature.
5. The EER shown are at standard AHRI conditions in Btuh/W.
6. SKM computer selections are available for quick and accurate selections.
7. Where blanks replace capacity data, unit is not suitable for operation at that condition.

* Power input mentioned in this page should not be used for cable or fuse selection. MCA and MFA values given in the electrical data pages (18-19) should be referred for the same.

SKM Packaged Air Conditioners M-S Series - R22

FAN PERFORMANCE

MODEL PACM-S	Air Flow Rate		ISP		External Static Pressure in.wg (Pa)														R.P.M. 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	60 Hz
50	1380	651	0.40	100.03	719	0.18	833	0.22	886	0.25	938	0.27	1035	0.33	1125	0.39	1230	0.46	818	804
	1620	764	0.54	135.23	800	0.26	900	0.31	948	0.34	995	0.37	1084	0.43	1169	0.49	1268	0.57	to	to
	1870	882	0.71	176.39	886	0.37	976	0.43	1019	0.46	1061	0.50	1143	0.56	1221	0.63	1314	0.72	1066	1049
60	1660	783	0.36	90.69	708	0.22	812	0.28	862	0.30	910	0.33	1004	0.39	1092	0.45	1195	0.53	812	799
	1940	915	0.49	121.73	789	0.33	880	0.39	924	0.42	968	0.45	1052	0.51	1133	0.58	1230	0.67	to	to
	2220	1048	0.63	156.57	874	0.47	954	0.54	994	0.57	1032	0.60	1109	0.67	1183	0.75	1272	0.84	1059	1043
70	1900	897	0.47	117.03	777	0.32	870	0.37	915	0.40	959	0.43	1045	0.49	1127	0.56	1224	0.65	914 to 1139	883 to 1101
	2220	1048	0.63	156.57	874	0.47	954	0.54	994	0.57	1032	0.60	1109	0.67	1183	0.75	1272	0.84		
	2540	1199	0.80	199.52	970	0.68	1041	0.75	1076	0.79	1110	0.82	1179	0.90	1246	0.98	1327	1.08		
80	2150	1015	0.50	125.40	815	0.41	899	0.47	940	0.50	980	0.53	1060	0.60	1136	0.67	1229	0.76	737 to 919	740 to 923
	2400	1133	0.62	153.98	888	0.55	963	0.61	1000	0.65	1037	0.68	1110	0.76	1181	0.83	1267	0.93		
	2600	1227	0.72	178.18	946	0.68	1016	0.75	1050	0.79	1085	0.83	1153	0.90	1219	0.98	1300	1.08		
90	2570	1213	0.39	97.73	621	0.38	705	0.46	747	0.50	787	0.54	866	0.63	942	0.73	1031	0.85	742	740
	3000	1416	0.53	130.88	696	0.57	768	0.66	804	0.70	840	0.75	910	0.85	978	0.95	1060	1.09	to	to
	3430	1619	0.67	167.74	771	0.82	835	0.91	867	0.96	898	1.02	961	1.12	1022	1.23	1097	1.38	919	923
100	2720	1284	0.44	108.79	647	0.44	727	0.52	766	0.57	805	0.61	880	0.70	953	0.80	1040	0.93	742	747 to 931
	3180	1501	0.59	145.93	727	0.67	796	0.76	830	0.81	864	0.85	930	0.96	996	1.06	1075	1.20	to	
	3630	1713	0.75	185.78	807	0.95	867	1.05	897	1.11	927	1.16	986	1.27	1045	1.38	1117	1.53	925	
105	2720	1284	0.47	116.38	659	0.46	739	0.54	778	0.58	816	0.62	892	0.72	964	0.81	1051	0.94	793 to 989	747 to 931
	3180	1501	0.63	155.92	741	0.69	810	0.78	843	0.83	877	0.87	944	0.98	1009	1.08	1088	1.22		
	3630	1713	0.80	198.39	822	0.98	882	1.08	912	1.13	942	1.19	1001	1.30	1059	1.41	1131	1.56		
110	2720	1284	0.47	116.38	659	0.46	739	0.54	778	0.58	816	0.62	892	0.72	964	0.81	1051	0.94	793 to 989	747 to 931
	3180	1501	0.63	155.92	741	0.69	810	0.78	843	0.83	877	0.87	944	0.98	1009	1.08	1088	1.22		
	3630	1713	0.80	198.39	822	0.98	882	1.08	912	1.13	942	1.19	1001	1.30	1059	1.41	1131	1.56		
120	2860	1350	0.54	135.40	695	0.53	771	0.62	808	0.66	845	0.71	917	0.80	987	0.91	1071	1.04	793 to 989	747 to 931
	3350	1581	0.73	181.51	785	0.81	850	0.90	882	0.95	914	1.00	977	1.11	1039	1.22	1115	1.37		
	3850	1817	0.93	232.72	876	1.17	932	1.28	960	1.34	989	1.39	1045	1.51	1100	1.63	1168	1.79		
125	2860	1350	0.54	135.40	695	0.53	771	0.62	808	0.66	845	0.71	917	0.80	987	0.91	1071	1.04	793 to 989	747 to 931
	3350	1581	0.73	181.51	785	0.81	850	0.90	882	0.95	914	1.00	977	1.11	1039	1.22	1115	1.37		
	3850	1817	0.93	232.72	876	1.17	932	1.28	960	1.34	989	1.39	1045	1.51	1100	1.63	1168	1.79		

Table 5

Areas shaded in blue indicate factory setting of rpm.

Areas shaded in grey indicate operating range outside the standard motor. Shift to one step larger motor size in this area.

Internal static pressure is based on pressure drops through evaporator coil, fan casing and 1" washable flat filter.

The shown rpm range is with standard pulleys combination.

SKM Packaged Air Conditioners M-S Series - R22

FAN PERFORMANCE

MODEL PACM-S	Air Flow Rate		ISP		External Static Pressure in.wg (Pa)														R.P.M. 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	60 Hz				
140	4240	2001	0.54	135.01	597	0.80	656	0.91	684	0.97	713	1.03	769	1.16	824	1.30	890	1.48	695 to 866	672 to 838				
	5010	2364	0.74	183.74	681	1.25	731	1.38	756	1.44	780	1.51	829	1.66	877	1.81	935	2.01						
	5550	2619	0.88	220.37	739	1.65	785	1.79	807	1.86	830	1.94	874	2.09	918	2.25	971	2.46						
145	4240	2001	0.54	135.01	597	0.80	656	0.91	684	0.97	713	1.03	769	1.16	824	1.30	890	1.48			695 to 866	672 to 838		
	5010	2364	0.74	183.74	681	1.25	731	1.38	756	1.44	780	1.51	829	1.66	877	1.81	935	2.01						
	5550	2619	0.88	220.37	739	1.65	785	1.79	807	1.86	830	1.94	874	2.09	918	2.25	971	2.46						
155	4950	2336	0.58	144.69	638	1.12	690	1.24	715	1.31	740	1.38	789	1.51	838	1.66	898	1.85					620 to 773	757 to 944
	5500	2595	0.71	175.75	696	1.49	742	1.63	765	1.70	788	1.77	833	1.92	877	2.07	932	2.28						
	6000	2831	0.82	205.50	748	1.90	790	2.05	811	2.12	832	2.20	874	2.36	915	2.52	966	2.73						
160	4950	2336	0.58	144.69	638	1.12	690	1.24	715	1.31	740	1.38	789	1.51	838	1.66	898	1.85	804 to 1003	849 to 1059				
	5500	2595	0.71	175.75	696	1.49	742	1.63	765	1.70	788	1.77	833	1.92	877	2.07	932	2.28						
	6000	2831	0.82	205.50	748	1.90	790	2.05	811	2.12	832	2.20	874	2.36	915	2.52	966	2.73						
170	5010	2364	0.32	80.59	574	1.00	627	1.11	652	1.18	678	1.24	727	1.37	777	1.50	837	1.69			790 to 986	744 to 928		
	6000	2831	0.45	113.14	666	1.64	711	1.78	732	1.85	754	1.92	797	2.07	839	2.22	890	2.42						
	6950	3280	0.60	149.07	756	2.48	795	2.64	814	2.72	833	2.80	870	2.97	907	3.14	953	3.36						
220	6320	2982	0.43	107.97	707	1.27	780	1.46	816	1.56	852	1.66	923	1.86	993	2.08	1079	2.37					804 to 1003	849 to 1059
	6670	3148	0.48	119.58	737	1.47	806	1.67	841	1.77	875	1.87	943	2.08	1010	2.31	1092	2.61						
	7140	3369	0.55	135.82	778	1.77	843	1.97	875	2.08	907	2.19	971	2.41	1034	2.65	1112	2.95						
240	6650	3138	0.52	128.34	749	1.50	818	1.69	852	1.79	887	1.90	955	2.11	1022	2.34	1103	2.64	707 to 881	684 to 852				
	6950	3280	0.56	139.37	775	1.69	841	1.89	874	1.99	907	2.10	973	2.32	1037	2.56	1116	2.86						
	7400	3492	0.63	156.45	815	2.00	877	2.21	908	2.32	939	2.43	1001	2.67	1062	2.91	1137	3.22						
250	7000	3303	0.60	150.57	792	1.76	858	1.96	890	2.07	923	2.18	988	2.40	1052	2.64	1130	2.95			707 to 881	684 to 852		
	7230	3412	0.64	159.81	813	1.92	876	2.13	908	2.24	940	2.35	1003	2.58	1065	2.82	1141	3.13						
	7650	3610	0.71	177.09	850	2.24	911	2.46	941	2.57	971	2.69	1030	2.92	1089	3.17	1162	3.50						
300	7000	3303	0.37	91.42	541	1.02	614	1.24	650	1.35	685	1.47	753	1.73	819	1.99	896	2.35					707 to 881	684 to 852
	7500	3539	0.42	104.22	568	1.22	637	1.45	670	1.57	704	1.69	769	1.95	831	2.23	906	2.60						
	8500	4011	0.53	132.03	624	1.70	685	1.95	715	2.08	745	2.21	804	2.49	861	2.79	931	3.18						
320	8310	3921	0.54	134.97	624	1.64	686	1.89	717	2.01	747	2.15	807	2.43	865	2.72	935	3.11	707 to 881	684 to 852				
	9100	4294	0.64	159.73	669	2.09	726	2.35	755	2.49	783	2.63	838	2.93	892	3.24	958	3.64						
	9680	4568	0.72	178.71	702	2.47	756	2.74	783	2.89	810	3.03	862	3.34	914	3.66	977	4.08						
360	9450	4459	0.52	128.64	641	2.10	697	2.35	725	2.49	753	2.62	807	2.91	860	3.22	926	3.62			707 to 881	684 to 852		
	10400	4908	0.62	153.78	693	2.72	744	3.00	769	3.14	795	3.29	844	3.60	894	3.92	954	4.34						
	11550	5450	0.75	186.04	755	3.64	802	3.94	825	4.09	847	4.25	893	4.58	-	-	-	-						

Table 5 ends

Areas shaded in blue indicate factory setting of rpm.

Areas shaded in grey indicate operating range outside the standard motor. Shift to one step larger motor size in this area.

Internal static pressure is based on pressure drops through evaporator coil, fan casing and 1" washable flat filter.

The shown rpm range is with standard pulleys combination.

SKM Packaged Air Conditioners M-S Series - R22

ELECTRICAL DATA

Power Supply: 380~415V/3Ph/50Hz

Model	Unit Characteristic			Compressor			Condenser Fan Motor			Evaporator Fan Motor	
	PACM-S	MFA	MCA	ICF	QTY	RLA	LRA	QTY	FLA	LRA	FLA
050	25	13	66	1	8	60	1	1.1	3.9	1.7	6.5
060	25	13	68	1	8	62	1	1.1	3.9	2.2	9.5
070	32	16	77	1	10	70	1	1.1	3.9	2.7	12.0
080	32	16	89	1	10	82	1	1.1	3.9	2.7	12.0
090	32	19	99	1	11	87	1	2.4	8.9	2.7	12.0
100	40	25	83	1 + 1	8 + 8	60 + 60	1	3.5	11.2	3.8	17.0
105	40	25	113	1	14	98	1	3.5	11.2	3.8	17.0
110	40	25	85	1 + 1	8 + 8	62 + 62	1	3.5	11.2	3.8	17.0
120	40	30	95	1 + 1	10 + 10	70 + 70	1	3.5	11.2	3.8	17.0
125	63	34	145	1	21	130	1	3.5	11.2	3.8	17.0
140	50	32	108	1 + 1	10 + 10	82 + 82	2	2.4	8.9	5.1	24.4
145	63	39	161	1	23	145	2	2.4	8.9	5.1	24.4
155	63	39	161	1	23	145	2	2.4	8.9	5.1	24.4
160	50	35	114	1 + 1	11 + 11	87 + 87	2	2.4	8.9	5.1	24.4
170	50	36	116	1 + 1	11 + 11	87 + 87	2	2.4	8.9	6.5	34.7
220	63	45	133	1 + 1	14 + 14	98 + 98	2	3.5	11.2	6.5	34.7
240	100	63	175	1 + 1	21 + 21	130 + 130	2	3.5	11.2	8.9	52.2
250	100	63	175	1 + 1	21 + 21	130 + 130	2	3.5	11.2	8.9	52.2
300	100	66	196	1 + 1	23 + 23	145 + 145	2	3.9	17.2	6.5	34.7
320	100	66	196	1 + 1	23 + 23	145 + 145	2	3.9	17.2	6.5	34.7
360	100	71	209	1 + 1	24 + 24	155 + 155	2	3.9	17.2	8.9	52.2

Table 6

Power Supply: 440V/3Ph/50Hz

Model	Unit Characteristic			Compressor			Condenser Fan Motor			Evaporator Fan Motor	
	PACM-S	MFA	MCA	ICF	QTY	RLA	LRA	QTY	FLA	LRA	FLA
050	25	13	65	1	8	60	1	0.95	3.4	1.9	6.7
060	25	13	68	1	8	62	1	0.95	3.4	2.5	10.2
070	32	16	76	1	10	70	1	0.95	3.4	2.9	12.4
080	32	16	88	1	10	82	1	0.95	3.4	2.9	12.4
090	32	19	98	1	11	87	1	2.1	7.6	2.9	12.4
100	40	25	82	1 + 1	8 + 8	60 + 60	1	3.1	9.9	4.0	17.2
105	40	25	112	1	14	98	1	3.1	9.9	4.0	17.2
110	40	25	84	1 + 1	8 + 8	62 + 62	1	3.1	9.9	4.0	17.2
120	40	30	94	1 + 1	10 + 10	70 + 70	1	3.1	9.9	4.0	17.2
125	63	33	144	1	21	130	1	3.1	9.9	4.0	17.2
140	50	32	107	1 + 1	10 + 10	82 + 82	2	2.1	7.6	5.7	24.3
145	63	39	160	1	23	145	2	2.1	7.6	5.7	24.3
155	63	39	160	1	23	145	2	2.1	7.6	5.7	24.3
160	50	35	113	1 + 1	11 + 11	87 + 87	2	2.1	7.6	5.7	24.3
170	50	36	115	1 + 1	11 + 11	87 + 87	2	2.1	7.6	7.1	34.6
220	63	45	132	1 + 1	14 + 14	98 + 98	2	3.1	9.9	7.1	34.6
240	100	63	174	1 + 1	21 + 21	130 + 130	2	3.1	9.9	9.5	54.4
250	100	63	174	1 + 1	21 + 21	130 + 130	2	3.1	9.9	9.5	54.4
300	100	66	193	1 + 1	23 + 23	145 + 145	2	3.5	14.7	7.1	34.6
320	100	66	193	1 + 1	23 + 23	145 + 145	2	3.5	14.7	7.1	34.6
360	100	71	207	1 + 1	24 + 24	155 + 155	2	3.5	14.7	9.5	54.4

Table 7

Power Supply: 380V/3Ph/60Hz

Model	Unit Characteristic			Compressor			Condenser Fan Motor			Evaporator Fan Motor	
	PACM-S	MFA	MCA	ICF	QTY	RLA	LRA	QTY	FLA	LRA	FLA
050	32	17	87	1	11	81	1	1.5	4.5	1.5	5.8
060	32	17	87	1	11	81	1	1.5	4.5	1.9	7.8
070	32	18	88	1	11	81	1	1.5	4.5	2.4	10.6
080	40	20	103	1	13	96	1	1.5	4.5	2.4	10.6
090	40	21	122	1	12	110	1	3.1	9.6	2.4	10.6
100	50	32	109	1 + 1	11 + 11	81 + 81	1	3.7	13.7	3.4	14.6
105	50	27	130	1	16	113	1	3.7	13.7	3.4	14.6
110	50	32	109	1 + 1	11 + 11	81 + 81	1	3.7	13.7	3.4	14.6
120	50	32	109	1 + 1	11 + 11	81 + 81	1	3.7	13.7	3.4	14.6
125	63	33	177	1	21	160	1	3.7	13.7	3.4	14.6
140	63	40	127	1 + 1	13 + 13	96 + 96	2	3.1	9.6	4.8	19.2
145	80	45	173	1	27	155	2	3.1	9.6	4.8	19.2
155	80	45	173	1	27	155	2	3.1	9.6	4.8	19.2
160	50	38	140	1 + 1	12 + 12	110 + 110	2	3.1	9.6	4.8	19.2
170	63	40	141	1 + 1	12 + 12	110 + 110	2	3.1	9.6	6.5	27.3
220	80	50	153	1 + 1	16 + 16	113 + 113	2	3.7	13.7	6.5	27.3
240	100	63	206	1 + 1	21 + 21	160 + 160	2	3.7	13.7	8.0	43.5
250	100	63	206	1 + 1	21 + 21	160 + 160	2	3.7	13.7	8.0	43.5
300	125	78	211	1 + 1	27 + 27	155 + 155	2	5.3	17.5	6.5	27.3
320	125	78	211	1 + 1	27 + 27	155 + 155	2	5.3	17.5	6.5	27.3
360	125	91	313	1 + 1	32 + 32	250 + 250	2	5.3	17.5	8.0	43.5

Table 8

SKM Packaged Air Conditioners M-S Series - R22

ELECTRICAL DATA

Power Supply: 460V/3Ph/60Hz

Model	Unit Characteristic			Compressor			Condenser Fan Motor			Evaporator Fan Motor		
	PACM-S	MFA	MCA	ICF	QTY	RLA	LRA	QTY	FLA	LRA	FLA	LRA
050		25	13	67	1	8	60	1	1.3	5.2	1.5	6.4
060		25	13	69	1	8	62	1	1.3	5.2	1.9	9.4
070		32	16	78	1	10	70	1	1.3	5.2	2.3	12.6
080		32	16	90	1	10	82	1	1.3	5.2	2.3	12.6
090		32	19	101	1	11	87	1	3.1	11.8	2.3	12.6
100		40	25	88	1 + 1	8 + 8	60 + 60	1	3.5	16.5	3.2	18.0
105		40	24	118	1	14	98	1	3.5	16.5	3.2	18.0
110		40	25	90	1 + 1	8 + 8	62 + 62	1	3.5	16.5	3.2	18.0
120		40	29	100	1 + 1	10 + 10	70 + 70	1	3.5	16.5	3.2	18.0
125		63	33	150	1	21	130	1	3.5	16.5	3.2	18.0
140		50	33	111	1 + 1	10 + 10	82 + 82	2	3.1	11.8	4.4	24.7
145		63	39	164	1	23	145	2	3.1	11.8	4.4	24.7
155		63	39	164	1	23	145	2	3.1	11.8	4.4	24.7
160		50	35	117	1 + 1	11 + 11	87 + 87	2	3.1	11.8	4.4	24.7
170		50	37	119	1 + 1	11 + 11	87 + 87	2	3.1	11.8	5.6	33.1
220		63	44	138	1 + 1	14 + 14	98 + 98	2	3.5	16.5	5.6	33.1
240		100	62	178	1 + 1	21 + 21	130 + 130	2	3.5	16.5	7.4	53.4
250		100	62	178	1 + 1	21 + 21	130 + 130	2	3.5	16.5	7.4	53.4
300		100	67	200	1 + 1	23 + 23	145 + 145	2	5	21.0	5.6	33.1
320		100	67	200	1 + 1	23 + 23	145 + 145	2	5	21.0	5.6	33.1
360		100	71	212	1 + 1	24 + 24	155 + 155	2	5	21.0	7.4	53.4

Table 9

Power Supply: 220V/3Ph/60Hz

Model	Unit Characteristic			Compressor			Condenser Fan Motor			Evaporator Fan Motor		
	PACM-S	MFA	MCA	ICF	QTY	RLA	LRA	QTY	FLA	LRA	FLA	LRA
050		50	26	130	1	17	120	1	2.5	7.5	2.6	9.8
060		50	27	134	1	17	123	1	2.5	7.5	3.3	13.7
070		50	28	135	1	17	123	1	2.5	7.5	4.2	18.5
080		50	30	182	1	19	170	1	2.5	7.5	4.2	18.5
090		63	36	211	1	21	190	1	5.4	16.7	4.2	18.5
100		80	50	167	1 + 1	17 + 17	120 + 120	1	6.4	23.7	5.8	24.4
105		80	46	225	1	27	195	1	6.4	23.7	5.8	24.4
110		80	50	170	1 + 1	17 + 17	123 + 123	1	6.4	23.7	5.8	24.4
120		80	50	170	1 + 1	17 + 17	123 + 123	1	6.4	23.7	5.8	24.4
125		100	57	267	1	36	237	1	6.4	23.7	5.8	24.4
140		100	62	219	1 + 1	19 + 19	170 + 170	2	5.4	16.7	8.1	35.0
145		125	76	285	1	46	255	2	5.4	16.7	8.1	35.0
155		125	76	285	1	46	255	2	5.4	16.7	8.1	35.0
160		100	66	241	1 + 1	21 + 21	190 + 190	2	5.4	16.7	8.1	35.0
170		100	69	244	1 + 1	21 + 21	190 + 190	2	5.4	16.7	10.7	49.0
220		125	84	263	1 + 1	27 + 27	195 + 195	2	6.4	23.7	10.7	49.0
240		160	108	317	1 + 1	36 + 36	237 + 237	2	6.4	23.7	14.2	93.6
250		160	108	317	1 + 1	36 + 36	237 + 237	2	6.4	23.7	14.2	93.6
300		200	132	350	1 + 1	46 + 46	255 + 255	2	9	29.7	10.7	49.0
320		200	132	350	1 + 1	46 + 46	255 + 255	2	9	29.7	10.7	49.0
360		200	145	483	1 + 1	50 + 50	380 + 380	2	9	29.7	14.2	93.6

Table 10

Note: Electrical data for motors (evaporator and condenser) is subject to tolerance as per IEC.

LEGENDS:

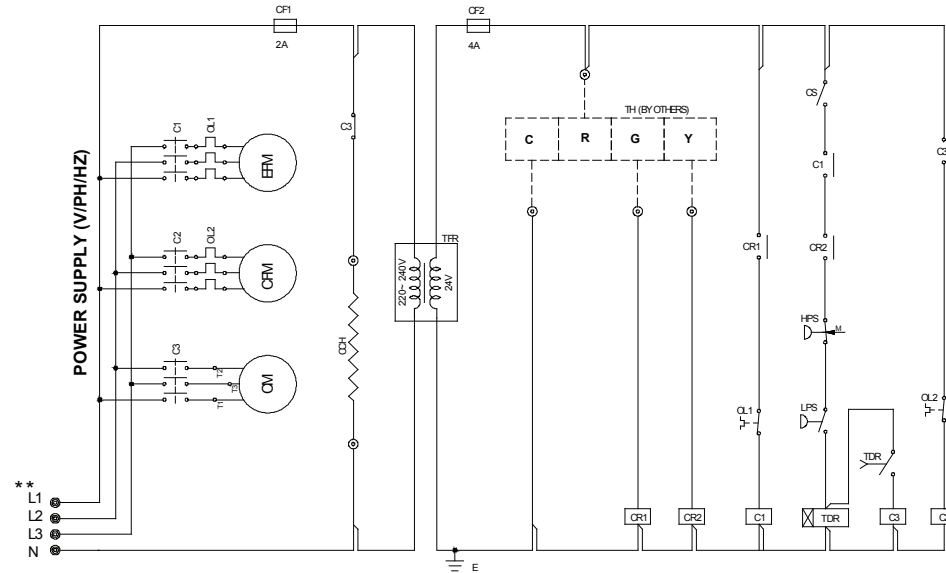
- MCC** Maximum Continuous Current corresponding to the cutout amps of internal motor protector.
- MCA** Minimum Circuit Amps for wire sizing
- MFA** Maximum Fuse Amps for Fuse sizing
- RLA** Rated Load Amps
- FLA** Full Load Amps
- LRA** Locked Rotor Amps

Voltage imbalance between phases to be <2%

SKM Packaged Air Conditioners M-S Series - R22

Typical Wiring Diagram

PACM - 050S ~ 090S, 105S, 125S



POWER SUPPLY

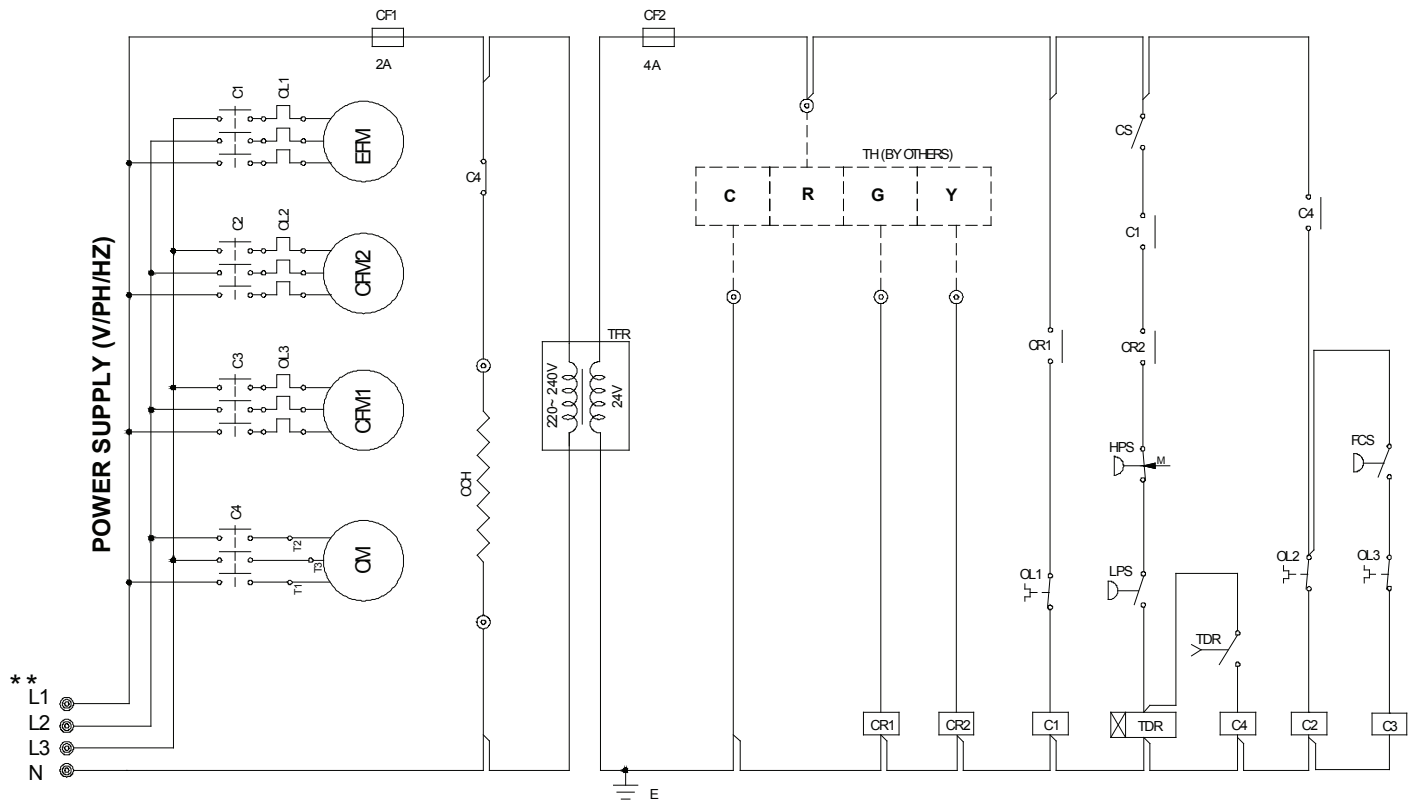
380V/3Ph/50Hz
400V/3Ph/50Hz
415V/3Ph/50Hz
380V/3Ph/60Hz

LEGEND

C	CONTACTOR
CCH	CRANK CASE HEATER
CF	CONTROL FUSE
CFM	CONDENSER FAN MOTOR
CM	COMPRESSOR MOTOR
CS	CONTROL SWITCH
EFM	EVAPORATOR FAN MOTOR
FCS	FAN CYCLING SWITCH
HPS	HIGH PRESSURE SWITCH
LPS	LOW PRESSURE SWITCH
OL	OVERLOAD RELAY
TFR	TRANSFORMER
TH	THERMOSTAT
TDR	TIME DELAY RELAY
---	FIELD WIRING AND FIELD SUPPLIED DEVICES

**** PROVIDE OVERCURRENT, EARTH FAULT PROTECTION, SHORT CIRCUIT AND DISCONNECT MEANS AS REQUIRED BY LOCAL & NATIONAL ELECTRIC CODE.**

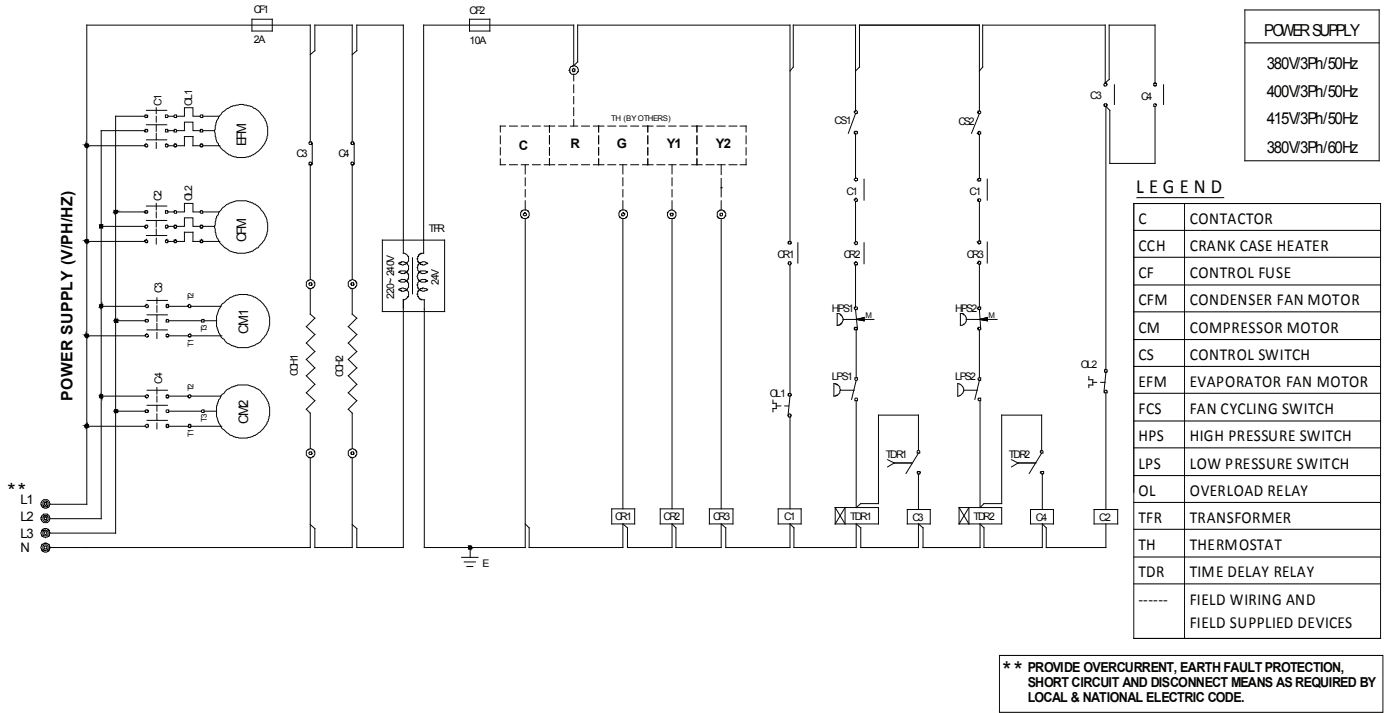
PACM - 145S, 155S



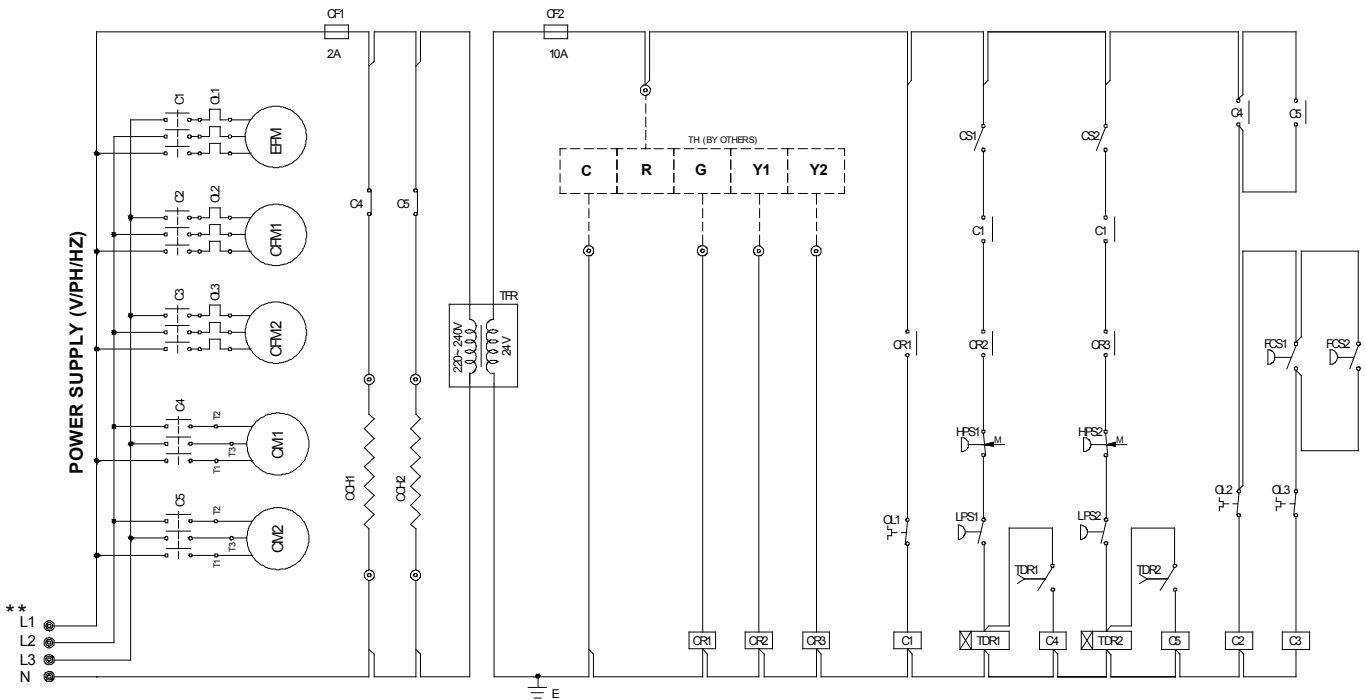
SKM Packaged Air Conditioners M-S Series - R22

Typical Wiring Diagram

PACM - 100S, 110S, 120S



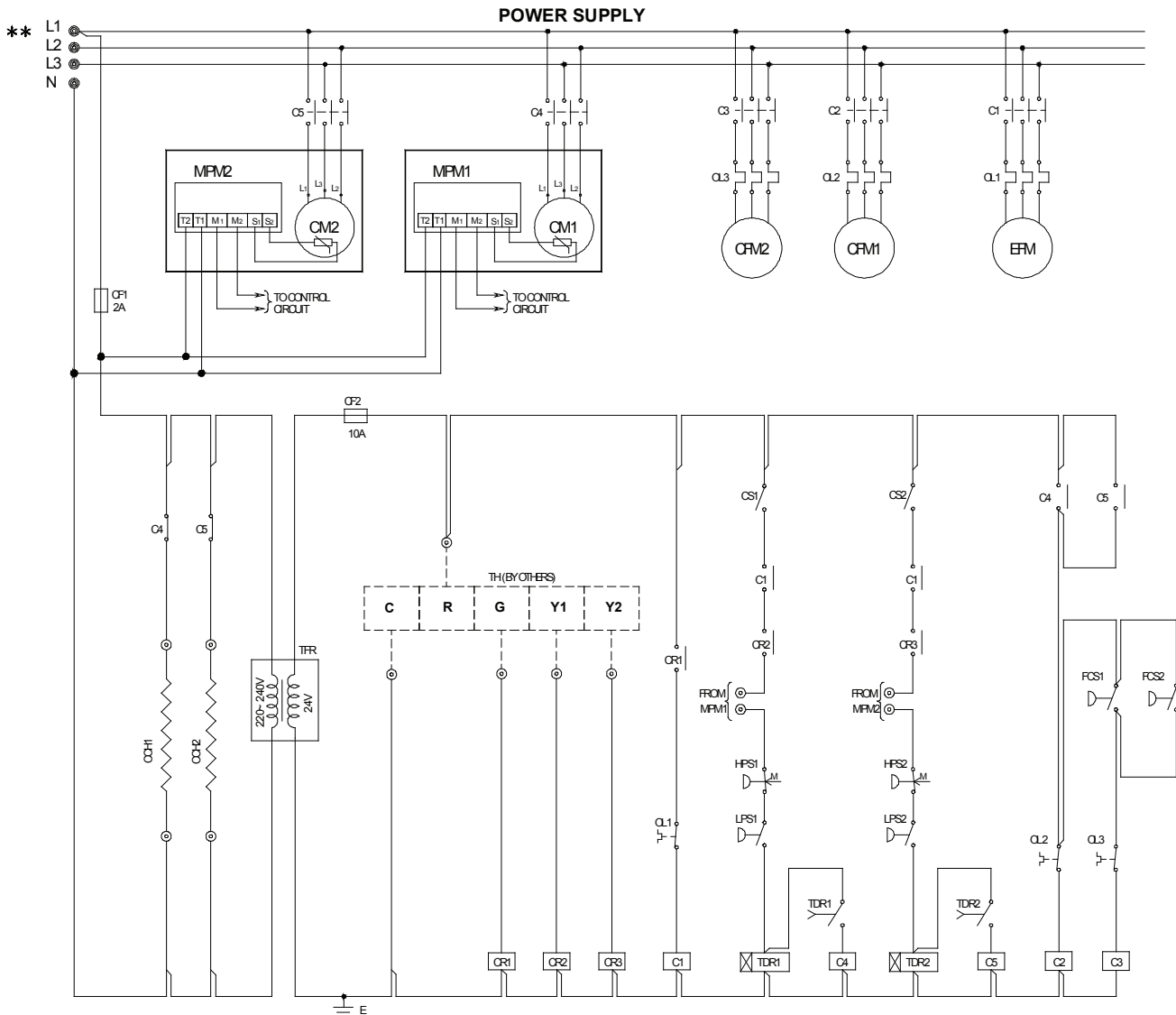
PACM - 140S, 160S - 320S



SKM Packaged Air Conditioners M-S Series - R22

Typical Wiring Diagram

PACM - 360S



POWER SUPPLY
380V/3Ph/60Hz

**** PROVIDE OVERCURRENT, EARTH FAULT PROTECTION, SHORT CIRCUIT AND DISCONNECT MEANS AS REQUIRED BY LOCAL & NATIONAL ELECTRIC CODE.**

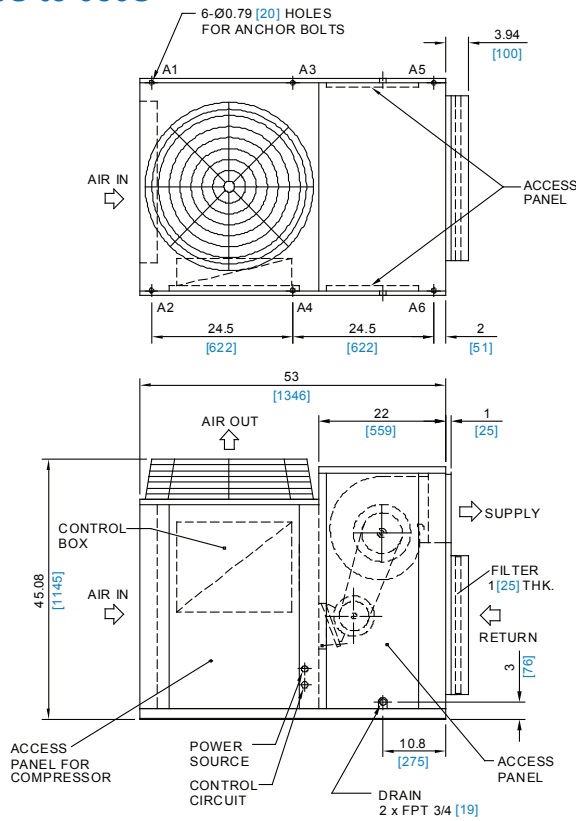
LEGEND

C	CONTACTOR
CCH	CRANK CASE HEATER
CF	CONTROL FUSE
CFM	CONDENSER FAN MOTOR
CM	COMPRESSOR MOTOR
CS	CONTROL SWITCH
EFM	EVAPORATOR FAN MOTOR
FCS	FAN CYCLING SWITCH
HPS	HIGH PRESSURE SWITCH
LPS	LOW PRESSURE SWITCH
MPM	MOTOR PROTECTOR MODULE
OL	OVERLOAD RELAY
TFR	TRANSFORMER
TH	THERMOSTAT
TDR	TIME DELAY RELAY
-----	FIELD WIRING AND FIELD SUPPLIED DEVICES

SKM Packaged Air Conditioners M-S Series - R22

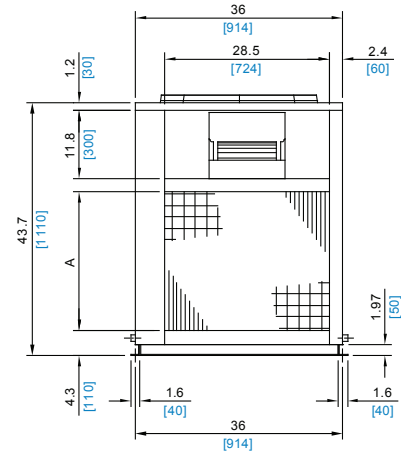
Dimensional Data

PACM - 050S to 080S

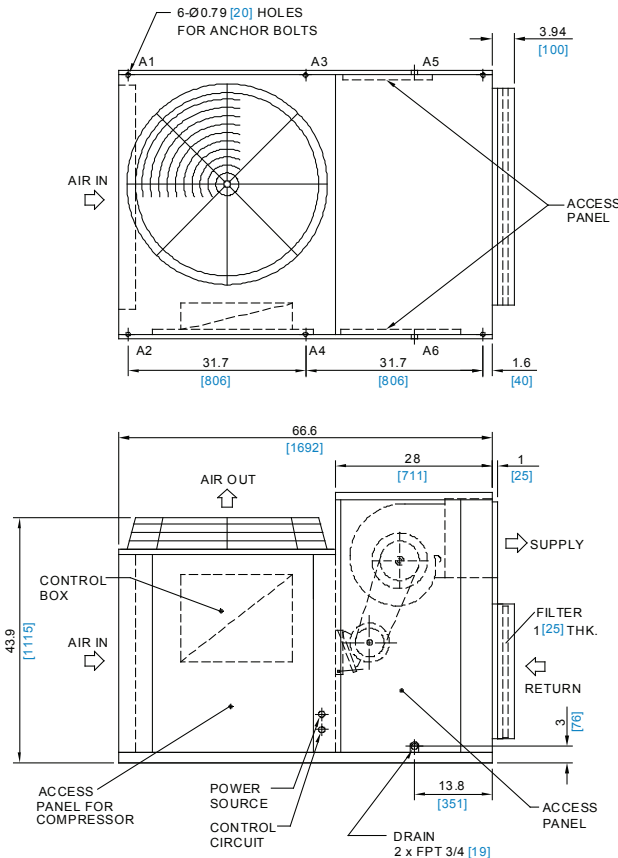


MODEL	A	LOAD AT EACH POINT	TOTAL WEIGHT
		Lbs [Kg] A1 - A6	
PACM-050S	18 [457]	68.83 x 6 NOS. [31.17 x 6 NOS.]	413 [187]
PACM-060S	22 [559]	74.3 x 6 NOS. [33.8 x 6 NOS.]	446 [203]
PACM-070S	22 [559]	76.3 x 6 NOS. [34.6 x 6 NOS.]	458 [208]
PACM-080S	24 [610]	77.5 x 6 NOS. [35.2 x 6 NOS.]	465 [211]

A1-A6 ARE LOADING POINTS

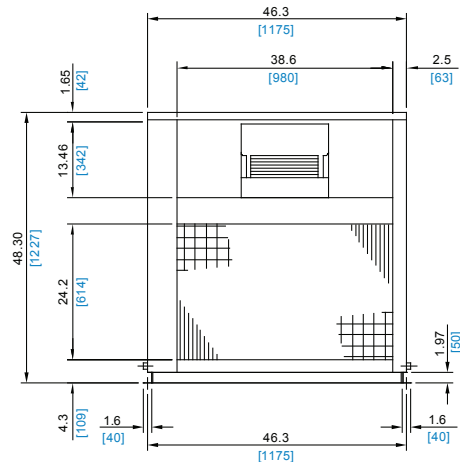


PACM - 090S to 125S



MODEL	LOAD AT EACH POINT	TOTAL WEIGHT
PACM-090S	118 x 6 NOS. [53 x 6 NOS.]	705 [320]
PACM-100S	127 x 6 NOS. [58.5 x 6 NOS.]	772 [351]
PACM-110S	128 x 6 NOS. [58.3 x 6 NOS.]	770 [350]
PACM-105S	135 x 6 NOS. [61.5 x 6 NOS.]	811 [369]
PACM-120S	138 x 6 NOS. [63 x 6 NOS.]	827 [375]
PACM-125S	131 x 6 NOS. [59.5 x 6 NOS.]	786 [357]

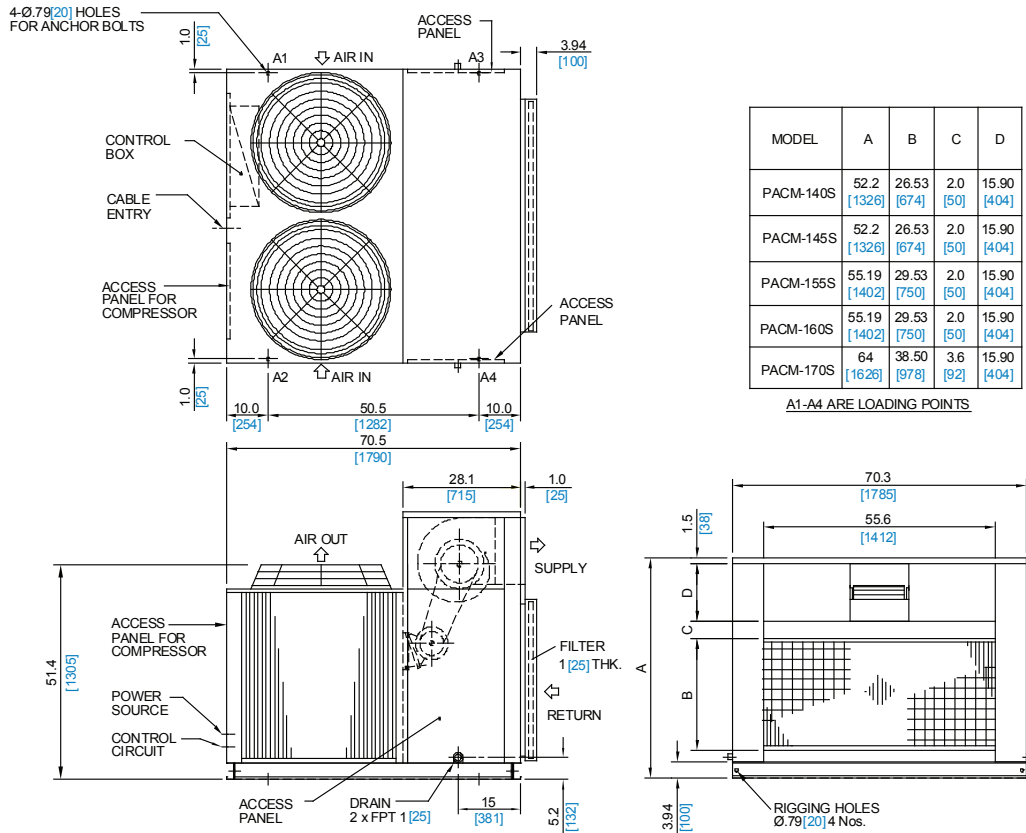
A1-A6 ARE LOADING POINTS



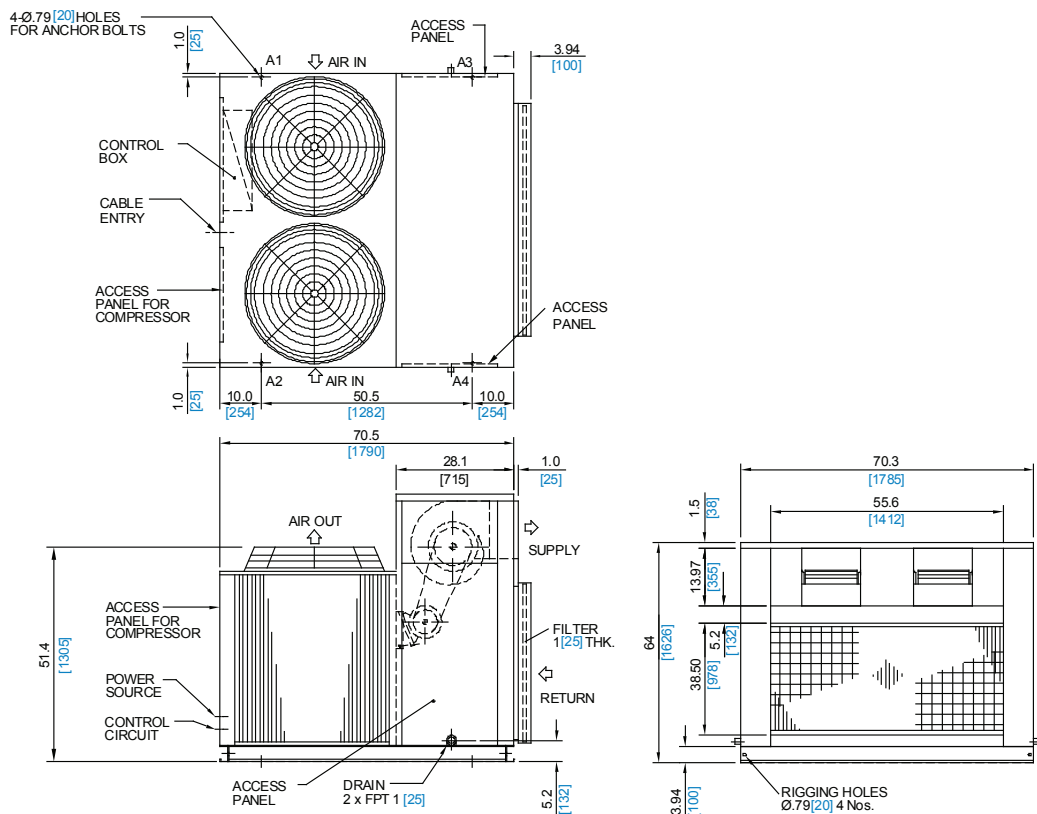
SKM Packaged Air Conditioners M-S Series - R22

Dimensional Data

PACM - 140S to 170S



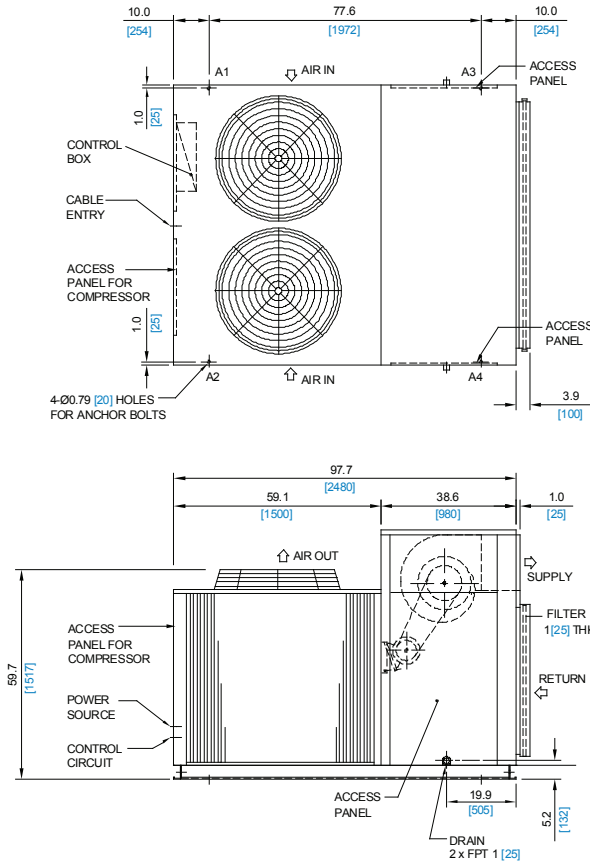
PACM - 220S to 250S



SKM Packaged Air Conditioners M-S Series - R22

Dimensional Data

PACM -300S to 360S



MODEL	A	B
PACM-300S	61.21 [1555]	37.8 [960]
PACM-320S	61.21 [1555]	37.8 [960]
PACM-360S	67.21 [1707]	43.8 [1113]

A1-A4 ARE LOADING POINTS.

Loading Points

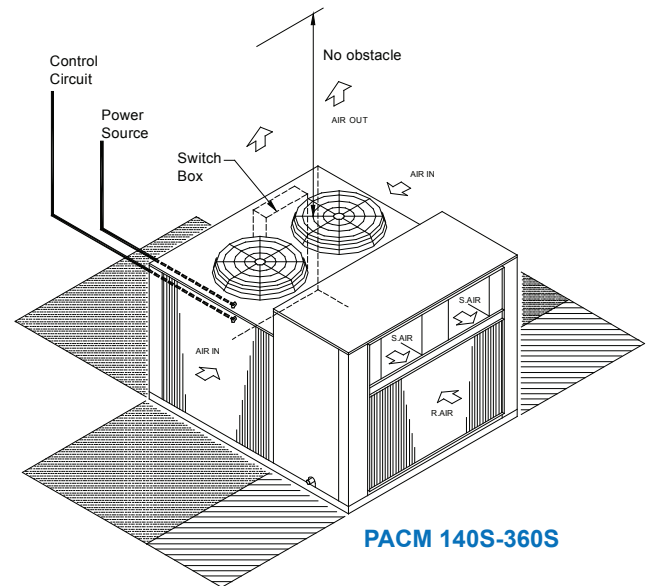
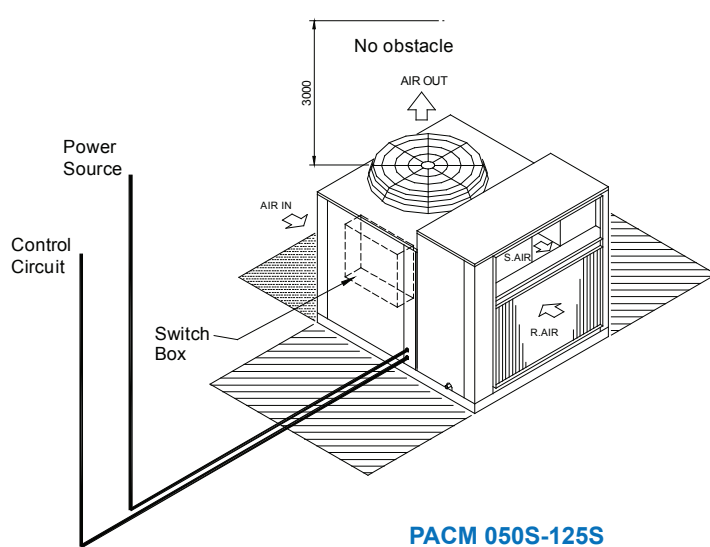
CONDENSING UNIT PACM	LOADING POINTS				TOTAL WEIGHT
	A1	A2	A3	A4	
	lbs	lbs	lbs	lbs	lbs
140 S	325	313	264	301	1202
	147	142	120	137	546
145 S	315	350	245	257	1168
	143	159	111	117	529
155 S	318	354	248	259	1179
	144	161	113	118	535
160 S	352	340	267	255	1213
	160	154	121	116	551
170 S	356	343	293	280	1272
	162	156	133	127	577
220 S	401	387	330	315	1433
	182	176	150	143	650
240 S	409	394	336	321	1459
	186	179	152	146	662
250 S	414	399	340	325	1477
	188	181	154	147	671
300 S	420	413	338	335	1504
	191	187	153	152	683
320 S	420	413	338	335	1504
	191	187	153	152	683
360 S	473	463	380	377	1693
	215	210	172	171	768

Table 11

SKM Packaged Air Conditioners M-S Series - R22

Installation & Commissioning

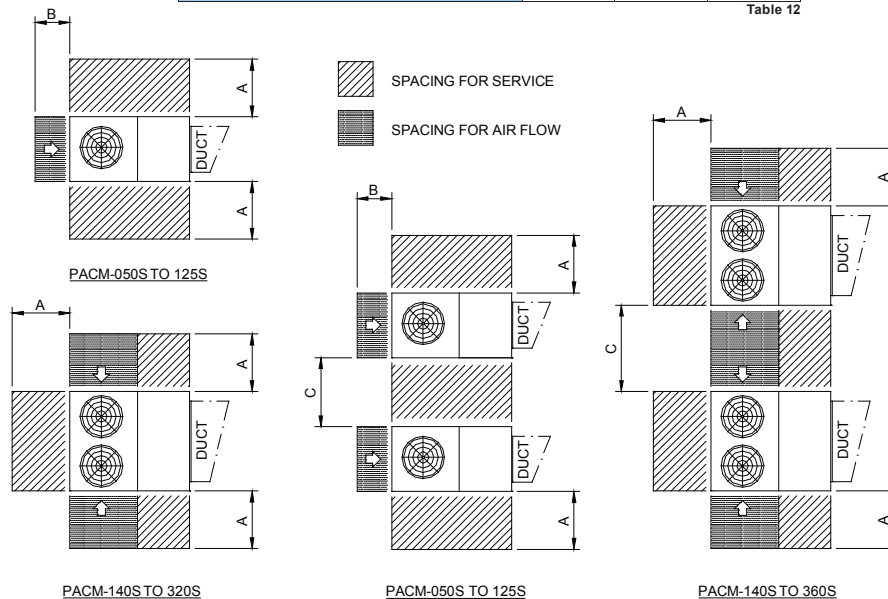
- Install the unit in such a location which is flat and strong enough to support its weight.
- Provide a trap of over 2" (50mm) in the drain piping for water seal.
- All field wiring must comply with applicable local and national codes.
- Connect supply and return ducts as shown.
- Service spacing should 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.



Unit Clearance

Model PACM	A	B	C
050S, 060S, 070S, 080S	40	26 [660]	40
090S, 100S, 105S, 110S, 120S, 125S		30 [762]	[1016]
140S, 145S, 155S, 160S, 170S, 220S, 240S, 250S	[1016]	42	63
300S, 320S, 360S		[1067]	[1600]

Table 12



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 R22, 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 (51.7°C) ambient temperature without failure & shall be rated in accordance with ARI-360 & ARI-210/240 standards. Capacity as per attached schedule.

COMPRESSOR(S)

Compressors are hermetically sealed, compact scroll as standard. All standard controls and accessories necessary for safe operation were all provided. Compressors are equipped with internal motor protector; factory-installed crank case heater and rubber grommets/vibrator isolator for controlling structural vibration and with quiet and efficient operation.

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 air pressure of 450 psig (3100 kPa) 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 (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 air pressure of 250 psig (1720 kPa) under water, cleaned & dehydrated at the factory. Coil shall conform to ARI-410.

EVAPORATOR FAN(S) & MOTOR(S)

Fans of evaporators 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 1/2" (12 mm) wall thickness enclosed cell pipe insulation with maximum k factor 0.28 BTU in/(h.ft². °F) (0.040 W/mK).

CASING

Casing shall be made of hot dip galvanized, 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 B117-95. 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 & 32 kg/m³ density having maximum k factor 0.23 BTU in/(h.ft². °F). (0.033 W/mK). Unit casing shall be provided with access panels for easy service & maintenance of all unit parts.

FILTER SECTION

Packaged air conditioner shall be provided with easily accessible cleanable media, minimum 1" (25 mm) thick filter having average arrestance efficiency of 54% as per ASHRAE standard 52.1 or equivalent.

CONTROL PANEL

The panel shall be factory wired in accordance with NEC 430 & 440, 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 switch.

Microprocessor based controller with built-in features of anti recycling timer, lead/lag operation of compressors, common alarm VFC, remote start/stop facility and cooling/heating functions shall be available, if so specified.



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