

R-22  
50Hz

## PACL Series Packaged Air Conditioners



Range 27.5 TR to 50 TR  
(97 kW to 176 kW)



اجهزة تكييف هواء  
AIR CONDITIONING EQUIPMENT

*you name it  
we cool it*

ISO 9001  
ISO 14001  
OHSAS 18001  
BUREAU VERITAS  
Certification



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# SKM Packaged Airconditioning Units PACL Series - R-22

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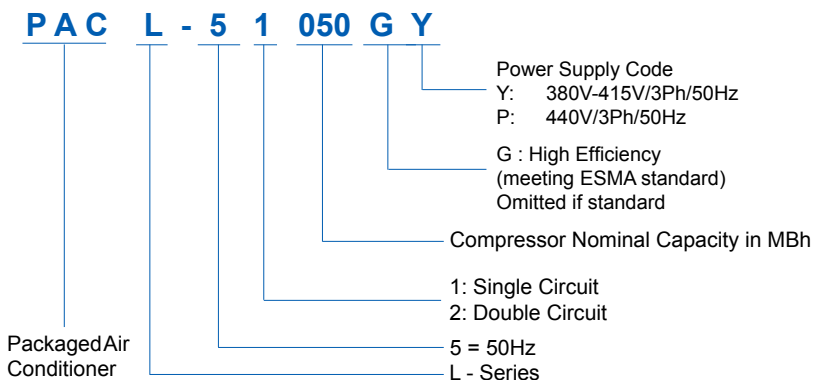
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## Legend

The following legends are used throughout this manual:

AFR .....	Air Flow Rate	L/s.....	Liters per second
BPF.....	By Pass Factor	MBh.....	BTUH x 1000
CFM.....	Cubic feet per minute	Pa.....	Pascal
EER.....	Energy Efficiency Ratio	Ph.....	Phase
ESP.....	External Static Pressure	Pl.....	Power Input of Compressor in kW
Hz .....	Hertz	RPM.....	Revolutions Per Minute
in. wg.....	Inch water gauge	RPS.....	Rated Power Supply
kW .....	Kilowatts	TR.....	Tons of Refrigeration
kg.....	Kilogram	V.....	Volts
lbs.....	Pounds weight		

## 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

New SKM **PACL** Series Packaged Air Conditioners 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.

PACL series is also designed to perform as per ESMA regulation to achieve high efficiency levels in Gulf countries.

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

SKM PACL Series are available in 16 different sizes from 27.5 to 50TR (97 to 176kW) in 50 Hz at nominal AHRI conditions. PAC-L units are designed, rated and manufactured in accordance with AHRI 210/240 and 340/360 standards.

The PACL series units from SKM are completely assembled, leak tested, vacuumed, internally wired and fully charged with R-22 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 works and cost.

SKM PACL series packaged air conditioners are designed to operate in a wide ambient temperature range between 50°F (10°C) to 125.6°F (52°C). Two independent refrigeration circuits are provided where two compressors are used.

The PACL series are tested and operated satisfactorily at 125°F (51.7°C) ambient temp. with more than 2 hours continuously running without tripping or over heating.

SKM provides qualified service and stock of replacement parts in all major cities of the G.C.C. countries, Egypt, Jordan, and Pakistan. See back cover for details or call SKM.

S.K.M Air Conditioning LLC



*You name it.....We cool it.*

# SKM Packaged Airconditioning Units PACL Series - R-22

## ENGINEERING SPECIFICATIONS - (ESMA APPROVED)

Model	PACL-G	52370 G	52420 G	52480 G	52550 G	
Cooling Capacity (1) (R-22)	MBH	322.0	374.0	420.0	465.0	
	kW	94.4	109.6	123.1	136.3	
	EER	7.5	7.6	7.5	7.5	
Compressor	Type	-	Hermetic Scroll Compressor			
	Quantity	-	2	2	2	2
	Oil Charge Ckt (A / B)	US Gal	1.23/0.86	1.24/1.24	1.82 / 1.25	1.82 / 1.82
Liter		4.67/3.25	4.71/4.71	6.9 / 4.73	6.9 / 6.9	
Condenser Coil	Type	-	Air cooled , 16 FPI fin spacing, Cu tubes, Al fins			
	Face Area	ft <sup>2</sup>	53.3	64.0	72.0	72.0
		m <sup>2</sup>	5.0	5.9	6.7	6.7
Condenser Fan	Type	-	Propeller direct drive			
	Code / Quantity	-	E-800/3	823/4	E-800/4	E-800/4
	Air Flow Rate	cfm	30000	34480	40160	40160
		l/s	14158	16272	18952	18952
Condenser Motor	Type	-	Totally Enclosed Air Over, Class-F insulation, 6 pole, IP55 protected			
	Size / Quantity	kW	1.5/3	1.1/4	1.5/4	1.5/4
Evaporator Coil	Type	-	Direct expansion, Aluminum Fins, Copper Tubes			
	Face Area	ft <sup>2</sup>	20.8	29.2	34.4	37.5
		m <sup>2</sup>	1.9	2.7	3.2	3.5
Evaporator Fan	Type	-	Centrifugal double inlet double width belt drive			
	Code / Qty.	-	N15/2	N15/2	N18/2	N18/2
	Air Flow Rate	cfm	10400	11700	14600	17200
		l/s	4908	5521	6890	8117
Evaporator Motor	Type	-	Totally enclosed, fan cooled Class F insulation, 4-pole IP55			
	Size	kW	5.50	7.5	7.5	11.0
Refrigerant (R-22) Operating Charge Ckt (A / B)	lbs	44.9 / 35.2	47.4 / 47.4	58.6 / 47.6	53.6 / 53.6	
	kg	20.4 / 16	21.5 / 21.5	26.6 / 21.6	24.3 / 24.3	
Number of Refrigerant Circuits	-	2	2	2	2	
Unit Operating Weight	lbs	3472	4033	4989	5403	
	kg	1575	1829	2263	2451	

Table 1

### Notes :

1) Capacity rating in accordance with ESMA standard, based on evaporator entering air temperatures of 84.2/66.2 °F (29.0/19.0 °C) dry bulb/wet bulb and condenser entering air temperature of 114.8 °F (46 °C). (NET CAPACITY).



# SKM Packaged Airconditioning Units PACL Series - R-22

## FAN PERFORMANCE (ESMA APPROVED)

Model PACL-G	AirFlowRate		Internal Static Pressure		EXTERNAL STATIC PRESSURE in.wg(Pa)													
					0.2(50)		0.4(100)		0.5(125)		0.6(150)		0.8(200)		1(250)		1.2(300)	
	cfm	l/s	in.wg	Pa	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW	RPM	kW
52370G	7292	3441	0.46	114.4	579	1.2	649	1.4	683	1.6	717	1.7	782	1.9	845	2.2	906	2.5
	10400	4908	0.99	245.7	787	3.3	837	3.6	861	3.7	886	3.9	935	4.2	983	4.5	-	-
	11458	5407	1.22	302.7	861	4.3	918	4.6	941	4.8	-	-	-	-	-	-	-	-
52420G	8203	3871	0.3	75.4	545	1.3	609	1.6	641	1.7	673	1.8	735	2.1	795	2.3	854	2.6
	11700	5521	0.61	152.7	728	3.5	774	3.8	797	4.0	820	4.2	865	4.5	-	-	-	-
	12891	6083	0.76	188.5	799	4.6	842	5.0	864	5.1	885	5.3	927	5.6	-	-	-	-
52480G	10208	4817	0.33	83.0	448	1.5	509	1.8	539	2.0	567	2.1	623	2.5	675	2.9	725	3.2
	14600	6890	0.69	172.8	596	3.9	641	4.3	663	4.6	684	4.8	727	5.2	768	5.7	-	-
	16042	7570	0.85	212.2	649	5.1	690	5.6	710	5.8	730	6.1	-	-	-	-	-	-
52550G	12031	5677	0.39	96.0	485	2.2	539	2.5	566	2.7	592	2.9	642	3.3	690	3.7	736	4.1
	17200	8117	0.82	204.3	659	5.8	702	6.3	722	6.5	741	6.8	779	7.3	816	7.8	-	-
	18906	8922	1.01	251.0	724	7.6	760	8.1	778	8.4	796	8.7	-	-	-	-	-	-

Table 3

### Notes :

1. Areas shaded in blue indicate factory setting of rpm.
2. Areas shaded in grey indicate operating range outside the standard motor.
3. Internal static pressure is based on pressure drops through evaporator coil, fan casing and 1" Aluminium filter.

# SKM Packaged Airconditioning Units PACL Series - R-22

## Electrical Data (ESMA APPROVED)

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

Model PACL	Unit Characteristic			Compressor			Condenser Fan Motor			Evaporator Fan Motor	
	MFA	MCA	ICF	QTY	RLA	LRA	QTY	FLA	LRA	FLA	LRA
52370G	160	107	286	1 + 1	38 + 30	225 + 174	3	3.4	13.0	11.2	63.8
52420G	160	112	298	2	38	225	4	2.8	11.0	15.2	100.3
52480G	200	127	348	1 + 1	44 + 38	272 + 225	4	3.4	13.0	15.2	100.3
52550G	200	134	361	2	44	272	4	3.4	13.0	22.0	140.8

Table 4

### Legend

**MFA** Maximum Fuse Amps (for fuse/circuit breaker sizing), complies with NEC Article 440-22 & 430-52.

**MCA** Minimum Circuit Amps.(for wire sizing), complies with NEC article 440-33.

**ICF** Maximum Instantaneous Current Flow.

**RLA** Rated Load Amps. (at worst operating condition) .

**LRA** Locked Rotor Amps.

**FLA** Full Load Amps.

### Note :

Voltage imbalance not to exceed  $\pm 2\%$  of the rated voltage.

## Loading Points (ESMA APPROVED)

PACL-G	UNIT	LOADING POINTS				TOTAL WEIGHT
		A1	A2	A3	A4	
52370G	lb.	786	782	1015	889	3472
	Kg.	357	355	460	403	1575
52420G	lb.	864	898	1158	1113	4033
	Kg.	392	407	525	505	1829
52480G	lb.	1116	1162	1367	1344	4989
	Kg.	506	527	620	610	2263
52550G	lb.	1211	1259	1489	1445	5403
	Kg.	549	571	675	655	2451

Table 5

# SKM Packaged Airconditioning Units PACL Series - R-22

## Dimensional Data - ESMA APPROVED

### PACL Models : 52370G

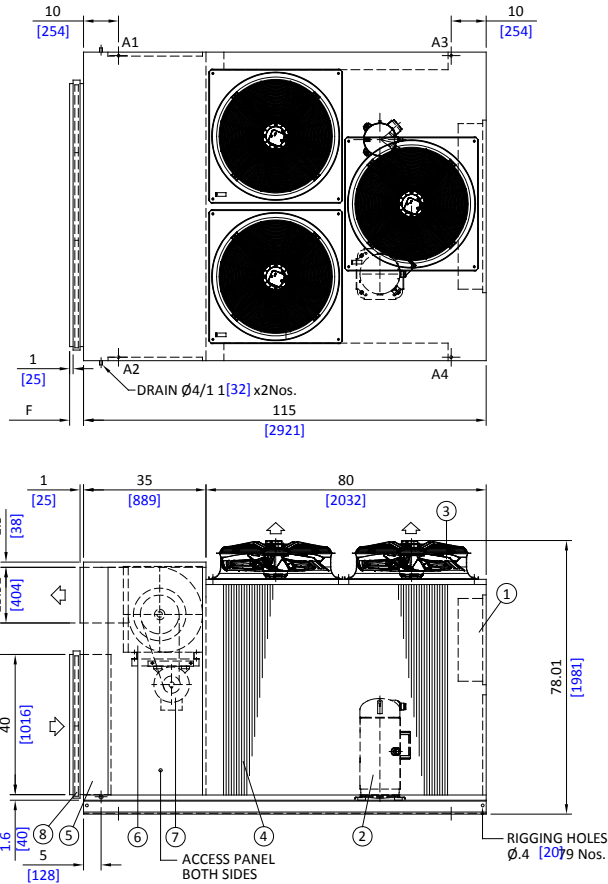
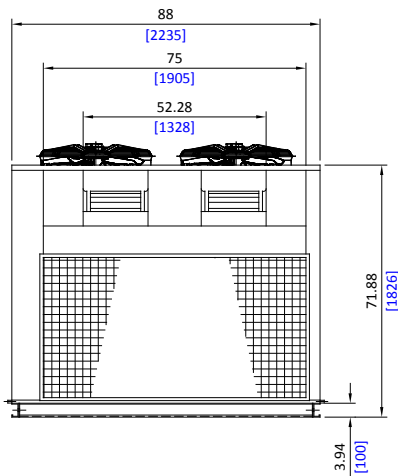
- LEGEND**
- ① CONTROL PANEL \*
  - ② COMPRESSOR
  - ③ CONDENSER FAN
  - ④ CONDENSER COIL
  - ⑤ EVAPORATOR COIL
  - ⑥ EVAPORATOR FAN
  - ⑦ EVAPORATOR FAN MOTOR
  - ⑧ 1" THICK FLAT FILTER

ALL DIMENSIONS ARE IN INCHES [MM]

F=3.94 [100] FOR 1" FLAT FILTER(STANDARD)

F=4.93 [125] FOR 2" FLAT FILTER(OPTIONAL)

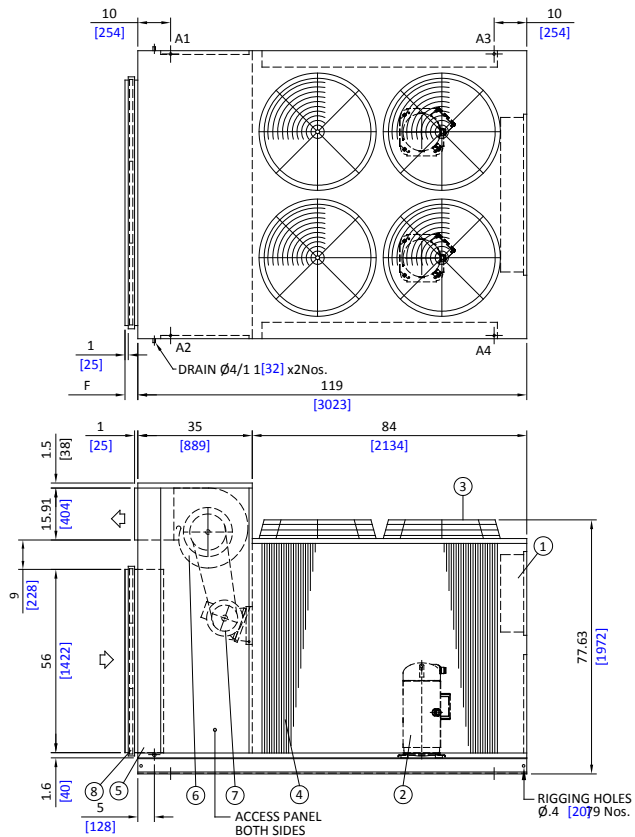
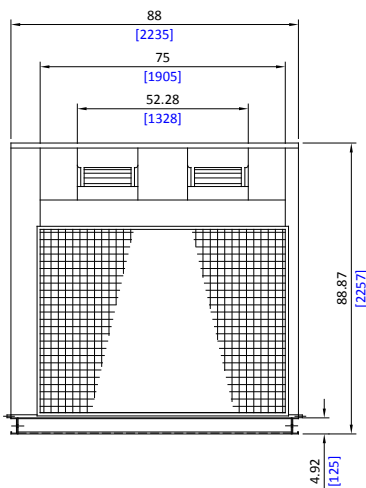
\* CONTROL PANEL SIZE & LOCATION IS SUBJECT TO CHANGE, PLEASE CONSULT SKM FOR DETAIL.



### PACL Models : 52420G

MODEL PACL	A	B	C
52370G		70 [1778]	90 [2286]
52420G	81 [2057]		96 [2438]
52480G		78 [1981]	108 [2743]
52550G			

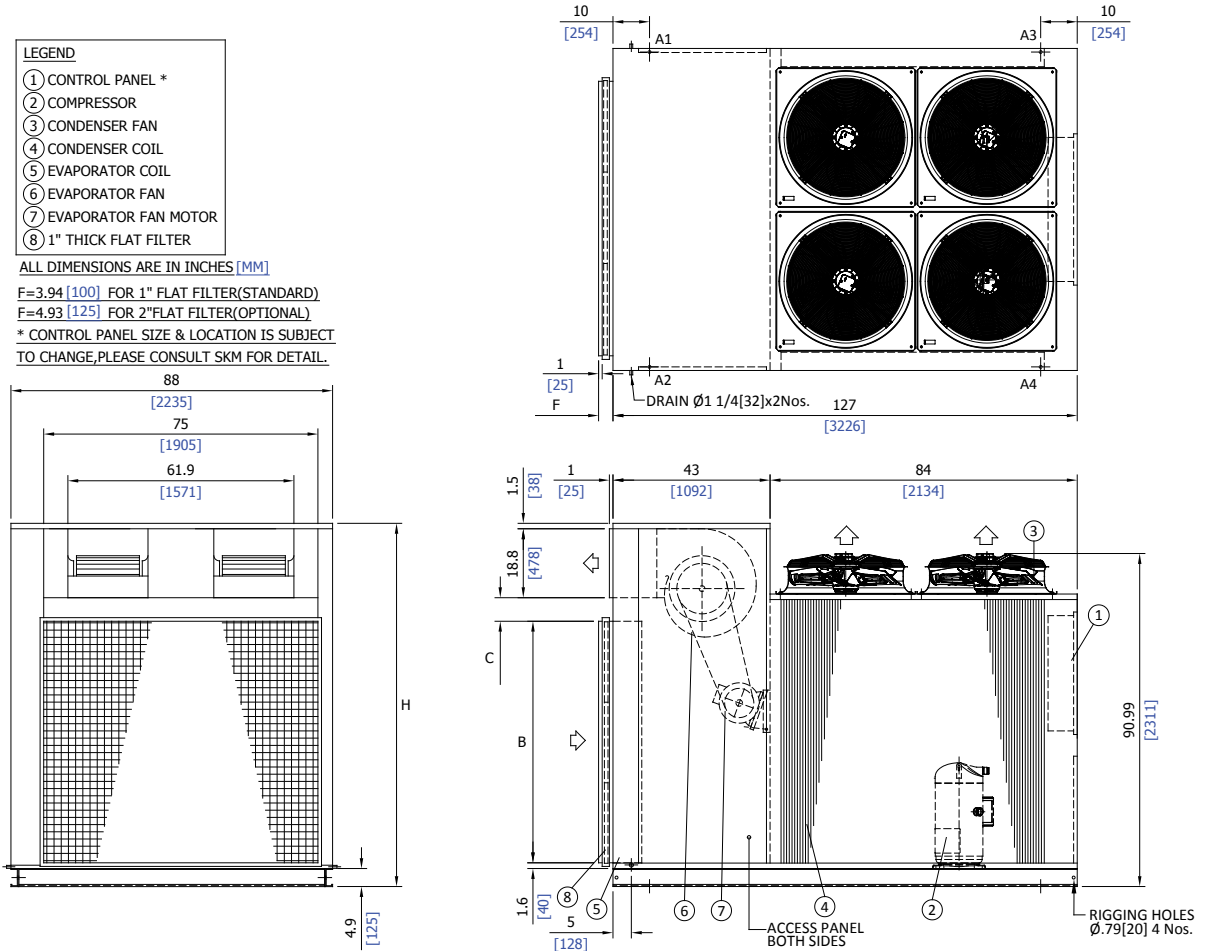
ALL DIMENSIONS ARE IN INCHES [MM]



# SKM Packaged Airconditioning Units PACL Series - R-22

## Dimensional Data - ESMA APPROVED

### PACL Models : 52480G & 52550G



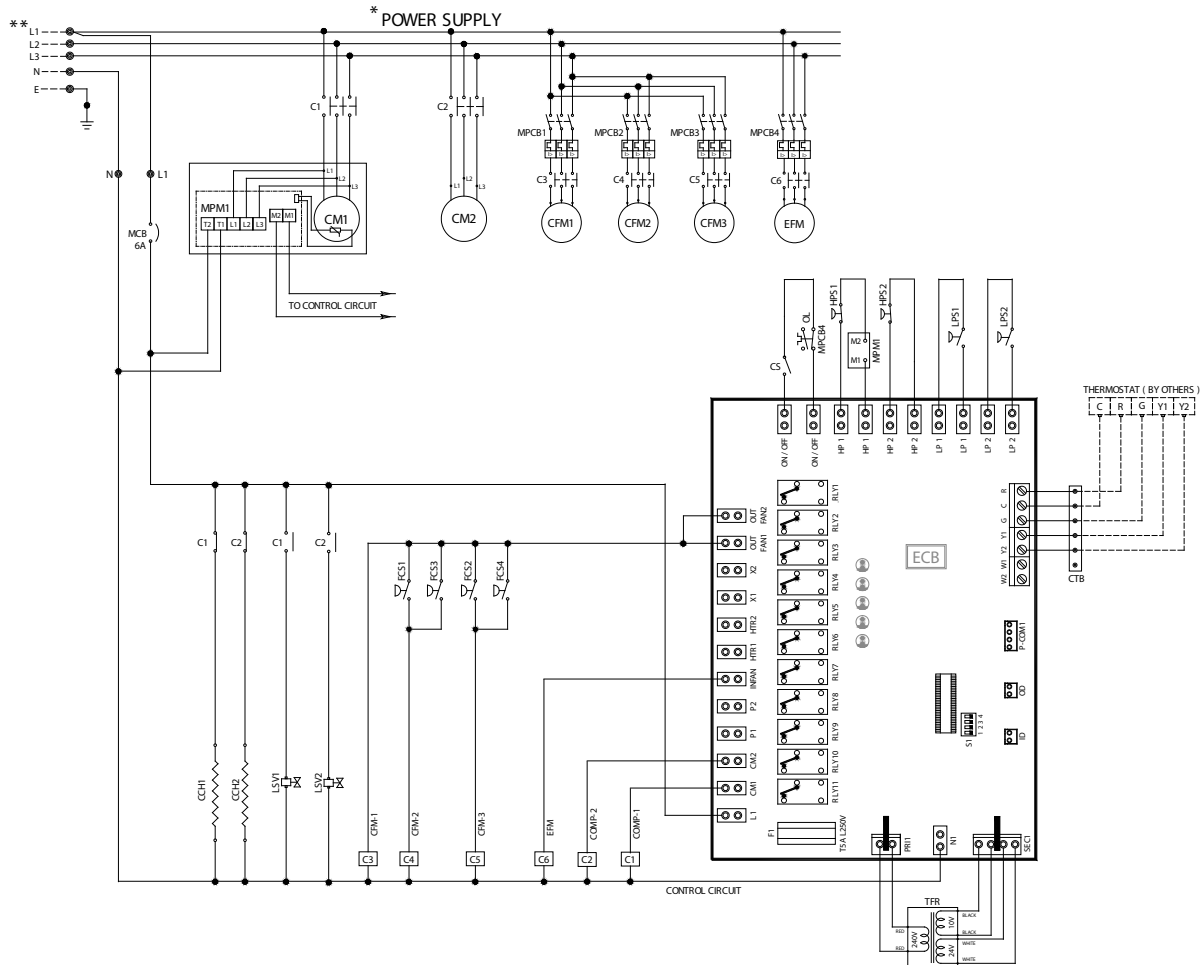
Model PACL	DIMENSIONS		
	H	C	B
52480G	99.24 [2521]	6.4 [163]	66 [1676]
52550G	103.24 [2622]	4.4 [113]	72 [1829]

ALL DIMENSIONS ARE IN INCHES[MM]



# SKM Packaged Airconditioning Units PACL Series - R-22

## Typical Wiring Diagram (ESMA)



LEGEND			
----	FIELD WIRING & FIELD SUPPLIED DEVICES	CS	CONTROL SWITCH
CM	COMPRESSOR MOTOR	TFR	TRANSFORMER
CFM	CONDENSER FAN MOTOR	CTB	CONTROL TERMINAL BLOCK
EFM	EVAPORATOR FAN MOTOR	FCS	FAN CYCLING SWITCH
MPCB	MOTOR PROTECTOR CIRCUIT BREAKER	HPS	HIGH PRESSURE SWITCH
F	POWER CIRCUIT FUSE	LPS	LOW PRESSURE SWITCH
CCH	CRANK CASE HEATER	ECB	ELECTRONIC CONTROL BOARD
OL	OVERLOAD RELAY	LSV	LIQUID LINE SOLENOID VALVE
C	CONTACTOR	MPM	MOTOR PROTECTOR MODULE
MCB	MINIATURE CIRCUIT BREAKER		

**NOTE**

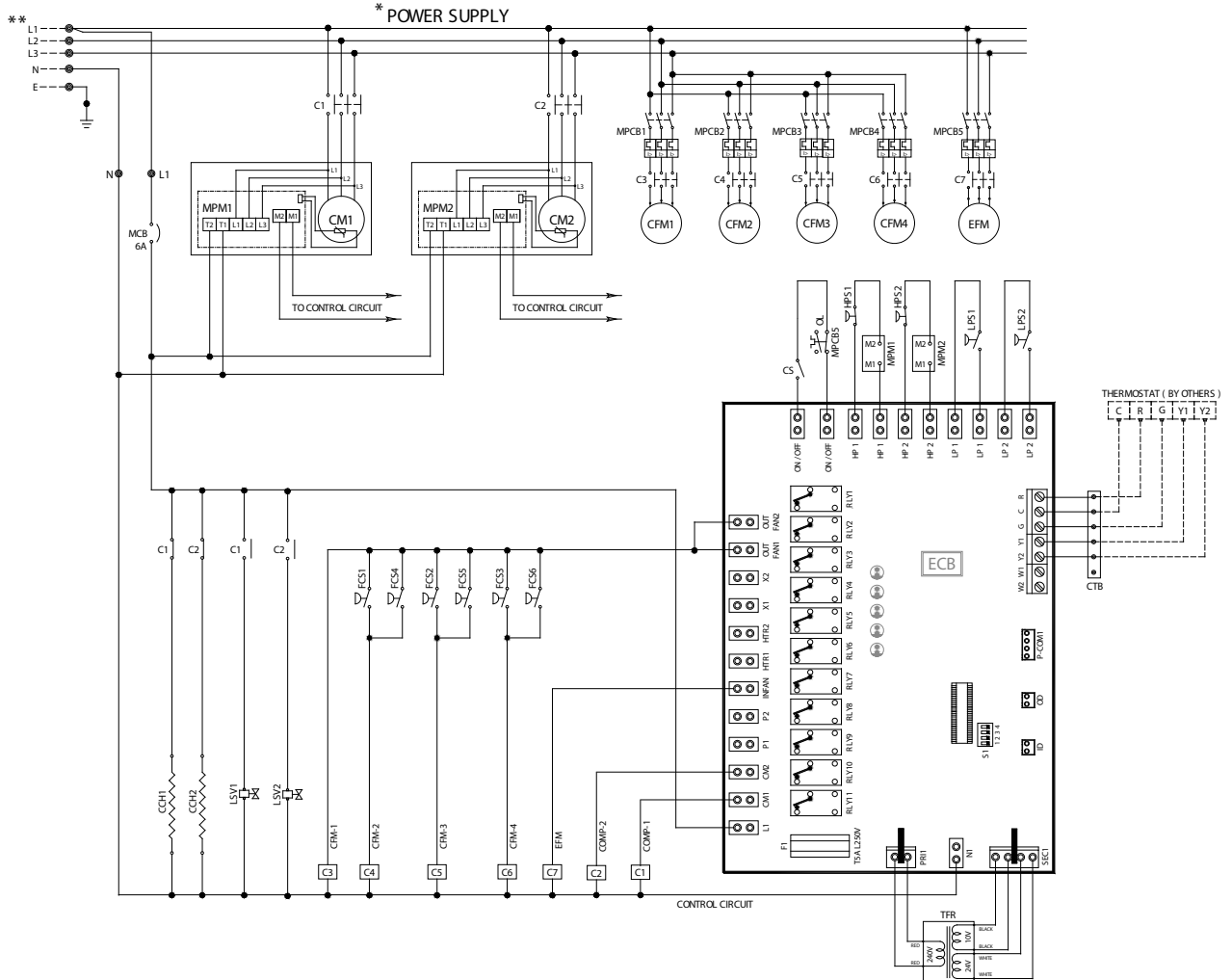
- \* TYPICAL WIRING DIAGRAM SHOWN HERE IS ONLY FOR 380~415V/3PH/50Hz, 4 WIRE POWER SUPPLY.
- \* FOR 440V/3PH/50Hz AND POWER SUPPLIES WITHOUT NEUTRAL, "CXT" OPTION IS A MUST. WIRING DIAGRAMS ARE AVAILABLE ON REQUEST.

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

# SKM Packaged Airconditioning Units PACL Series - R-22

## Typical Wiring Diagram (ESMA)

PACL Models: 52420G, 52480G & 52550G



### NOTE

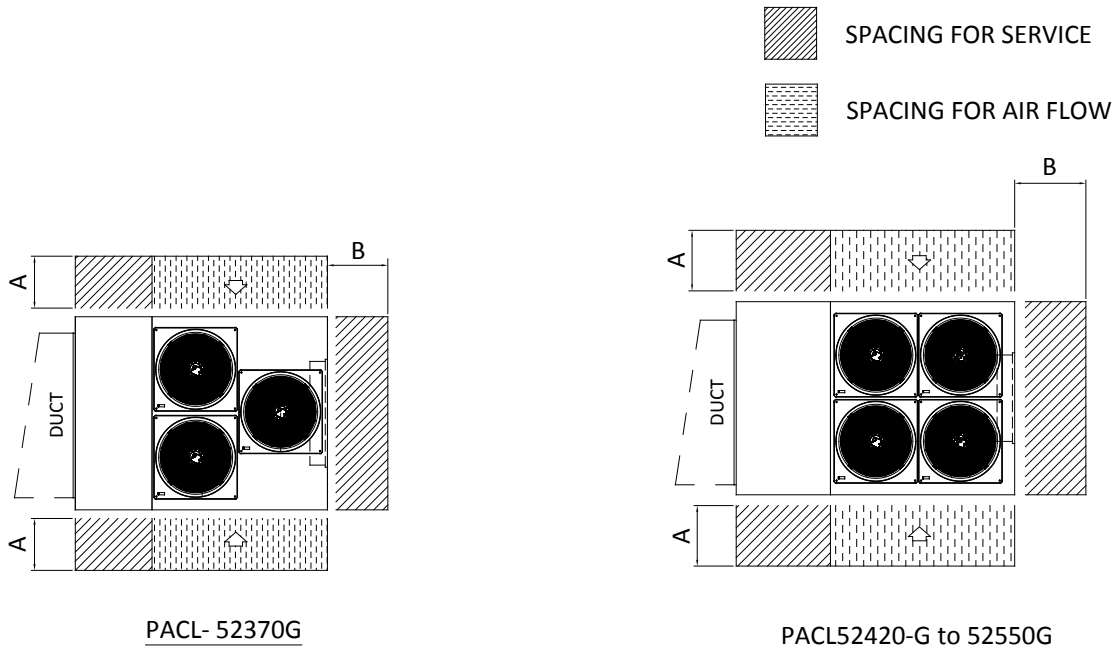
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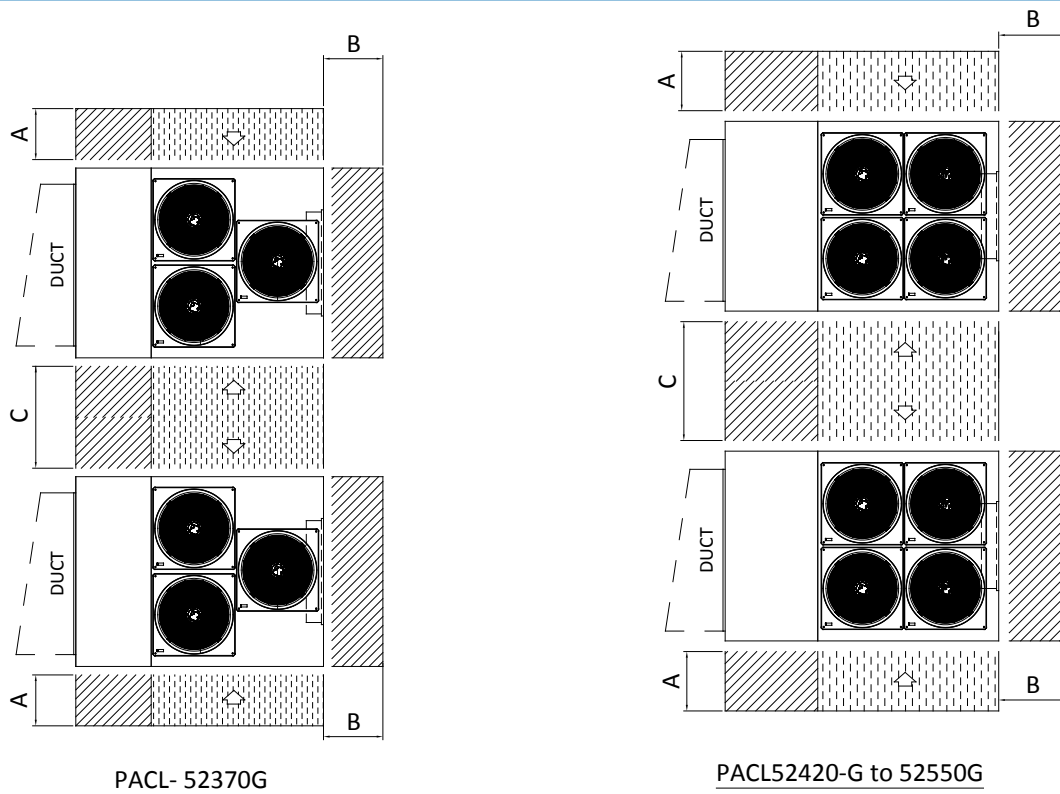
# SKM Packaged Airconditioning Units PACL Series - R-22

## Location and Space Requirements

### UNIT INSTALLATION



### SINGLE UNIT INSTALLATION



### MULTIPLE UNIT INSTALLATION



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we cool it*

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