AUMR-G SERIES

High Efficiency Air cooled Condensing units

اجهـــزة تكـيـيـف هـــواء
AIR CONDITIONING EQUIPMENT

R-410A
REFRIGERANT

RANGE 25 TR to 65 TR
(85 kW to 222 kW)

CE

bsi
ISO 9001 Quality Management Systems CERTIFIED
ISO 14001 Environmental Management CERTIFIED
ISO 45001 Occupational Health and Safety Management CERTIFIED

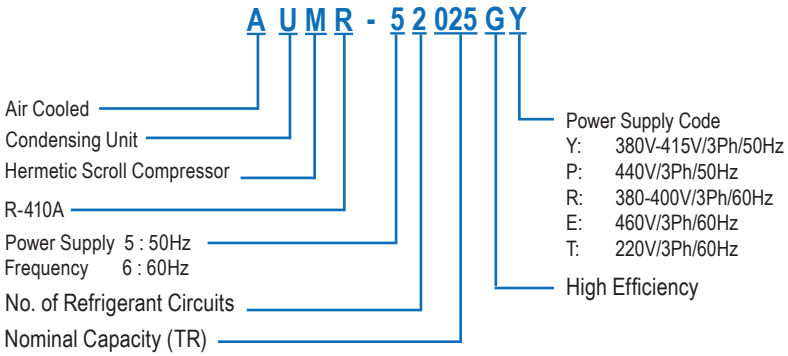
Contents

Legend

The following abbreviations are used throughout this manual:

BPF.... By-pass Factor
cfm .... Cubic feet per minute
EER .... Energy Efficiency Ratio
Hz ..... Hertz
inwg .... Inches of water gauge
kW ..... Kilowatts
kg ..... kilogram
lbs ..... Pounds weight (British units)
L/S ..... Liters per second
MBh.... BTUH x 1000
Ph ..... Phase
Pa ..... Pascals
PD ..... Pressure Drop
PI ..... Power Input
RPM.....Revolutions per Minute
TR ..... Tons of Refrigeration = 12 MBh
V ..... Volt

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 **AUMR-G** series Air cooled condensing unit are designed for the use on systems with indoor units connected to remote condensing units located outside either on ground or on roof level.

SKM **AUMR-G** units are manufactured to meet the requirements of the gulf severe climatic conditions.

The **AUMR-G** Air Cooled Condensing unit are ideal for warehouses, large halls, schools, mosques, or wherever the requirement calls for a heavy duty unit with a scroll hermetic compressor.

AUMR-G Series Air cooled condensing unit (hermetic scroll) are available in 12 models covering nominal capacity ranges from 25 TR to 65 TR (85 kW to 222 kW) in 50Hz and 60Hz.

AUMR-G Air Cooled Condensing unit are rated in accordance with AHRI-365.

AUMR-G series provide efficient operation, wide range of design flexibility coupled with packaged concept requiring least on-site work.

AUMR-G series Air Cooled Condensing units are used for commercial and industrial applications where high efficient condensing units are needed to match an indoor central station AHUs or coils to get maximum performance advantages of split sytem with reasonable initial cost.

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.

SKM Air Conditioning LLC

اجهزة تكييف هواء
AIR CONDITIONING EQUIPMENT

You name it.....We cool it

General Features

The complete **AUMR-G** condensing unit provides an extremely rugged, heavy duty, long-life and energy efficient that will provide higher efficiency over a long and extended life. What makes **AUMR-G** series the pride of SKM products is the use of :

- High efficiency totally sealed hermetic scroll compressor.
- Totally enclosed, Class F insulated, IP55 protected condenser fan motor.
- Heavy duty condenser optimised in design for long-life maintenance free operation.
- Cabinet construction specifically designed for Gulf climates.
- Factory installed unit controller for operational safety control.

The SKM **AUMR-G** series air cooled condensing units are durable, dependable, strong, reliable, versatile, quiet and energy efficient. Wherever a heavy duty condensing unit is required, the **AUMR-G** series should be an automatic choice.

Component Features

Compressor

Compressors used in **AUMR-G** Condensing unit series are hermetically sealed, compact scroll with the following features:

- High efficiency.
- Quiet 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.
- Brazed fittings or Rotalock as options.
- Two refrigerant circuits on larger units provides efficient part load.

Condensers

Condenser coils are manufactured of seamless copper tubes mechanically bonded to aluminum fins to ensure optimum heat transfer.

Condenser Coil

All coils are tested against leakage by air pressure of 715psig (4930kPa) under water. All standard coils are 3 or 4 rows with 14FPI (1.8mm) or 16FPI (1.6mm). An integral sub-cooling circuit is provided to increase the cooling capacity, without additional operating cost.

For different application requirements, other optional condenser fin materials are available:

- Copper fins.
- Electrotinned Copper Fins.
- Copper finned coils with electro-tinned after manufacturing.
- Precoated Aluminum fins
  The pre-coated is hydrophobic polyurethane resin. This option provides substantial corrosion protection beyond standard coil construction.
- Aeris Guard Coil Coating
  The Aeris Guard Coil is a self etching high performance modified epoxy finish that is specifically designed to coat and protect Aluminum and Copper surfaces. In addition, the coating is ideal for the protection of ferrous and non ferrous materials.

All models are suitable for Gulf countries, ensuring the condenser coil design shall provide long life operation with the least possibility operational blockage on the condenser. Ample condenser surface and sensible air flow across the condenser ensures a low temperature differential between condensing temperature and the high Gulf ambient making the **AUMR-G** Condensing unit perform efficiently and durably.

Condenser Fans

The condenser fans are propeller type, aluminium alloy blades,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 motors are factory wired using wires specially selected for high ambient operation, to unit control panel where the motor contactors are located to control the operation of these motors. The condenser fans are individually, statically and dynamically balanced at the factory. Complete fan assembly is provided with suitable acrylic-coated fan guard.

Casing/Structure

Designed for ease of handling and low cost to install. The **AUMR-G** Air cooled condensing Units are factory assembled and mounted on a rigid base. The unit casing used in **AUMR-G** condensing units is made of zinc coated galvanized steel sheets conforming to JIS-G3302 and ASTM A653 / A653M - 17 which is phosphatized then baked after an electrostatic powder coat of approximately 60 microns.

This finish and coating pass a 1000 hours in 5 % salt spray testing at 95°F (35°C) and 95% relative humidity as per ASTM B117.

The entire assembly comes complete with lifting holes on the base frame for rigging and installation. Acess panels are provided for easy service and maintainance

Options available include hot dipped galvanized base frame and structural members aluminium/stainless steel panels are available, on request, as options.

Refrigerant Charge

Condensing units are shipped with nitrogen holding charge only.

Piping connections

AUMR-G air Cooled Condensing units piping connections come, as standard, terminated with sealed and soldered copper pipe ends.

Normal installation would require the cutting off (usin roller-type tube cutters) of the ends prior to connections being resoldered and connected to the field supplied refrigerant pipework.

Refrigerant Pipe work

SKM **AUMR-G** series Condensing units are provided with all internal piping, using ACR grade copper tubing, between compressor and condenser.

Loose supplied liquid line refrigerant controls are available as an option for field installation (Please specify CRSP). When this option is ordered, the unit will be supplied with a correctly sized thermostatic expansion valve, liquid line sight glass/moisture indicator and filter drier having flared or soldered ends isolatable with one Ball valve.

Ball valve for the other side of the filter drier can be supplied, if option XFV is specified.

Solenoid valve in the liquid line is provided as a standard feature for **AUMR-G** series.

Electrical Control Panel

The unit mounted control panel enclosure is fabricated out of heavy gauge sheet steel in phosphatized powder coated baked finish. The enclosure conforms to IP54 as per guidelines in IEC 529. The panel is factory wired in accordance with NEC 430 & 440, labelled, tagged and features 220V / 240V controls.

- All compressors are with DOL starting.
- Individual contactor provided for compressors and condenser fan motors.
- Internal overload protection or electronic protection module for compressors
- Internal thermal overload protection for condenser fan motors.
- Unit controller for operational and safety control.
- Compressor short cycling protection.
- High compressor motor temperature. (For compressors with electronic module).
- Control circuit on/off switch.
- Control circuit breaker.
- Power and control circuit terminal blocks.
- High pressure protection.
- Low pressure protection.
- Control Relay.

Unit Controllers

AUMR-G units are controlled by a standalone unit controller, which provides all necessary operational and safety control of the units. Two types of controllers are used in **AUMR-G** units, depending on number of compressors.

Units with Up to Two Compressors

For unit models with two compressors, an electronic control board is provided as standard feature which provides an efficient control of the unit.

This controller has got diagnostic LEDS on board, which will help in trouble shooting of the units. A thermostat is to be used in conjunction with this controller to control the unit. Thermostat can be opted from SKM or can be supplied by customer.

Note:

Advanced microprocessor based controller can be provided as option, in case required. Refer to **AMCS** option for such requirement

Units With Four Compressors

Unit models with four compressors are equipped with a full function microprocessor based controller as a standard feature. The controller is factory programmed for the control of compressors and condenser fans. The controller comes with a built-in keypad and display for simple but meaningful man- machine interface. This controller provides complete operational control for the unit and has built-in auto diagnostic capability that can signal normal operation or alarm conditions as well as shutting down the unit or system if necessary.

The controller comes with a loose supplied sleek and elegant design room unit (Digital Thermostat) for installing in the conditioned space. Communication between unit controller and room thermostat is through 5-wire shielded cable. Maximum distance between room thermostat and controller can be 500 meters. The room thermostat has a built-in sensor for measuring the room temperature. It transmits room temperature, set point, unit operating mode, operating schedule, unit on/off command etc. to the unit controller. Control of the compressors is based on room temperature and the set point, as standard.

For Units with Advance microprocessor controller (optional for units with one or two compressors and standard for units with four compressors) following features can be provided if required. Please specify during the time of order.

- Duct Temperature Sensor.
- BMS Interface through protocol.
- More features can be provided if required.

Optional Features

Factory installed options :

Alternative Condenser Material

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

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

Western make scroll compressor **(WMSC)**
Western make scroll compressor.

Compressor Run Hour Meter **(RHM)**
To monitor operating hours of each compressor.

Circuit Breaker for Compressor **(CBC)**
For those electrical specification which requires additional short circuit and overload protection for the compressors.

Rotalock Valves on Compressors **(RVC)**
For additional facilitation of maintenance of unit.

External Overload Protection **(EOP)**
For those electrical specification which requires additional overload protection for the compressors.

Advanced Microprocessor control system **(AMCS)**
An advanced microprocessor based controller can be provided for two compressors units as option, in case required. This controller will be with built-in display keypad and has many features.This optional controller is the same as the standard controller used in units with four compressors. For this feature, additional options can be provided and to be specified during time of order:

- **DTS – Duct Temperature Sensor***
  (In order to control the unit based on return/supply air duct temperature).
- **BMSP – BMS Protocol***
  (For interfacing the units with major BMS protocols such as BACnet, Modbus or LON. An extra hardware may be required depending on the protocol).

Pump Down Facility **(PD)**
The compressor will switch off each time with a Pump Down 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 (if required) to prevent Refrigerant Migration from High side to Low side when the compressor is off.

Hot Gas Bypass System **(GBP)**
With solenoid to enable operation of a large sized unit at very low loads, during low load demand due to application requirements or where unit is selected to work on 100% fresh air applications.

Pressure Relief Valve **(PRV)**
To protect the unit from being over-pressurized.

Pressure Gauges **(SDG1)**
Suction and discharge indication of each refrigerant circuit. Gauges mounted outside the Control Panel.

Manual Reset Type High Pressure Switch **(MHP)**
To replace standard auto reset, capsule type pressure switch.

Condenser Coil Guard **(CGP)**
Wire mesh guard, in painted finish for condensers coils. Recommended on ground level installation where coil needs to be protected against vandalism.

Circuit Breaker for Motors **(CBM)**
For those electrical specification which requires additional short circuit and overload protection for the fan motors.

IP 55 Control Panel **(ICP)**
Control Panel for special applications to meet IP55 requirements.

Main Isolator (without door interlock) **(ISO)**
For main power isolation. (consult SKM).

Control Transformer **(CXT)**
This option is necessary and available for unit models rated for 440V/3PH/50Hz or 460V/3PH/50Hz or power supplies without neutral. When ordering for these voltages, this option must be ordered.

BMS interface volt free contacts **(BMVF)**
Volt free contacts for run status, common fault status, auto mode status and provision for remote on/off shall be provided as option if required. For additional requirements, please contact SKM.

Voltage Monitor Module **(VMM)**
Provides protection in the event of:
- Phase burn-out.
- Phase reversal.
- Under / over voltage on the incoming line voltage.

Voltage Monitoring Module as per DEWA **(DVM)**
Under voltage relay as per DEWA regulations.This option is available for Dubai, UAE only.

Options for Field Installations

Low Voltage Thermostat **(CHTS)**
For wall mounting and for cooling /heating operation with 1 or 2 stages as per model. Applicable for units with two compressor. (not required with AMCS option or for units with four compressors).

Liquid Line Controls **(CRSP)**
Refrigeration specialties comprising , filter drier, sight glass and ball valve. Factory sizing and selection ensures correctly sized and selected components to complete the field installation.

Extra Ball Valve **(XFV)**
Extra ball valve can be incorporated in the liquid line.

Note:

- * DTS & BMSP options are only available along with AMCS option or for unit models with advanced microprocessor based controller.
- Whenever multiple option related to unit control, please consult SKM for the drawings as the size of the control panel might change.

GENERAL DATA - 50 Hz

Model		AUMR	52025G	52030G	52035G	52040G	52045G	52050G
Cooling Capacity (1)		BTUH	286000	332000	392000	460000	514000	576000
		W	83822	97304	114889	134818	150645	168816
Cooling Capacity (2)		BTUH	241000	283000	336000	390000	433000	485000
		W	70633	82943	98476	114302	126905	142145
Compressor	Type	-	Hermetic Scroll Compressor					
	Quantity	-	2	2	4	4	4	4
	Oil Charge per Circuit (A / B)	US Gal	0.9/0.9	0.9/0.9	1.4/1.4	1.8/1.8	1.8/1.8	1.8/1.8
		Liter	3.4/3.4	3.4/3.4	5.4/5.4	6.8/6.8	6.8/6.8	6.8/6.8
Condenser Coil	Type	-	Air cooled 2,3 or 4 rows with 14FPI (1.8mm)or 16FPI (1.6mm) fin spacing, Aluminum Fins, Copper Tubes					
	Face Area	ft²	65.0	65.0	91.0	91.0	91.0	130.0
		m²	6.0	6.0	8.5	8.5	8.5	12.1
Condenser Fan	Type	-	Propeller direct drive					
	Code / Quantity	-	E800/2	E800/2	E800/4	E800/4	E800/4	E800/4
	Air Flow Rate	cfm	23020	22660	43160	42040	42040	45320
		l/s	10864	10694	20369	19841	19841	21389
Condenser Motor	Type	-	Totally enclosed, air over Class F insulation, 6-pole, IP-55					
	Size / Quantity	kW	1.5/2	1.5/2	1.5/4	1.5/4	1.5/4	1.5/4
Refrigerant (R410A) Operating Charge Per Circuit		lbs	33 / 33	41.9 / 41.9	44.4 / 44.4	57 / 57	60 / 60	82.4 / 82.4
		kg	15 / 15	19.1 / 19.1	20.2 / 20.2	26 / 26	27.3 / 27.3	37.5 / 37.5
Number of Refrigerant Circuits		-	2	2	2	2	2	2
Unit Operating Weight		lbs	2215	2335	3407	3578	3604	4155
		kg	1005	1059	1545	1622	1635	1884

Table 1

GENERAL DATA - 60 Hz

Model		AUMR	62030G	62035G	62045G	62050G	62055G	62065G
Cooling Capacity (1)		BTUH	340000	396000	468000	548000	610000	688000
		W	99648	116061	137163	160610	178781	201641
Cooling Capacity (2)		BTUH	286000	336000	399000	464000	514000	578000
		W	83822	98476	116940	135991	150645	169402
Compressor	Type	-	Hermetic Scroll Compressor					
	Quantity	-	2	2	4	4	4	4
	Oil Charge per Circuit (A / B)	US Gal	0.9/0.9	0.9/0.9	1.4/1.4	1.8/1.8	1.8/1.8	1.8/1.8
		Liter	3.4/3.4	3.4/3.4	5.4/5.4	6.8/6.8	6.8/6.8	6.8/6.8
Condenser Coil	Type	-	Air cooled 2,3 or 4 rows with 14FPI (1.8mm)or 16FPI (1.6mm) fin spacing, Aluminum Fins, Copper Tubes					
	Face Area	ft²	65.0	65.0	91.0	91.0	91.0	130.0
		m²	6.0	6.0	8.5	8.5	8.5	12.1
Condenser Fan	Type	-	Propeller direct drive					
	Code / Quantity	-	E800/2	E800/2	E800/4	E800/4	E800/4	E800/4
	Air Flow Rate	cfm	27400	26980	51400	50000	50000	53960
		l/s	12931	12733	24258	23597	23597	25466
Condenser Motor	Type	-	Totally enclosed, air over Class F insulation, 6-pole, IP-55					
	Size / Quantity	kW	2/2	2/2	2/4	2/4	2/4	2/4
Refrigerant (R410A) Operating Charge Per Circuit		lbs	33.2 / 33.2	41.9 / 41.9	48.9 / 48.9	61.3 / 61.3	61.3 / 61.3	84.2 / 84.2
		kg	15.1 / 15.1	19.1 / 19.1	22.3 / 22.3	27.9 / 27.9	27.9 / 27.9	38.3 / 38.3
Number of Refrigerant Circuits		-	2	2	2	2	2	2
Unit Operating Weight		lbs	2219	2335	3422	3593	3607	4159
		kg	1006	1059	1552	1629	1636	1886

Table 2

1). Cooling capacity at 95°F (35°C) ambient temperature according to AHRI-365.
2). Cooling capacity at Gulf conditions : 115°F (46.1°C) condenser entering air temperature & 45°F (7.2°C) SST.
3). Operating charge is approximate for condensing unit only and does not include refrigerant lines and evaporator coil.
4). Condensing units are shipped with nitrogen holding charge only.

CAPACITY RATINGS - 50 Hz

Model AUMR	SST		Condenser Entering Air Temperature											
			95°F (35°C)			105°F (40.6°C)			115°F (46.1°C)			120°F (48.9°C)		
			Total Capacity		PI*	Total Capacity		PI*	Total Capacity		PI*	Total Capacity		PI*
	°F	°C	MBh	kW	kW	MBh	kW	kW	MBh	kW	kW	MBh	kW	kW
52025G	35	1.7	240.9	70.6	17.9	222	65.1	20.4	201.5	59	23.2	191.1	56	24.6
	40	4.4	263.3	77.2	18.4	242.7	71.1	20.9	220.6	64.7	23.6	209.6	61.4	25
	45	7.2	286.9	84.1	18.8	264.6	77.5	21.3	241	70.6	24	229.2	67.2	25.3
	50	10	311.9	91.4	19.2	287.7	84.3	21.6	262.5	76.9	24.3	250	73.3	25.7
52030G	35	1.7	280.4	82.2	22	259.5	76.1	24.7	237.5	69.6	27.7	226.4	66.4	29.2
	40	4.4	305.8	89.6	22.6	283.2	83	25.4	259.7	76.1	28.3	248	72.7	29.8
	45	7.2	332.4	97.4	23.2	308.1	90.3	26	283	83	28.9	270.6	79.3	30.3
	50	10	360.3	105.6	23.7	334.1	97.9	26.5	307.4	90.1	29.4	294.3	86.3	30.8
52035G	35	1.7	329	96.4	23.9	305.8	89.6	27	279.9	82	30.9	266.7	78.2	32.9
	40	4.4	359.9	105.5	24.2	335	98.2	27.4	307.5	90.1	31.2	293.4	86	33.2
	45	7.2	392.7	115.1	24.6	365.8	107.2	27.9	336.4	98.6	31.6	321.5	94.2	33.5
	50	10	427.3	125.2	25	398.2	116.7	28.3	367.3	107.6	32.1	351.8	103.1	34
52040G	35	1.7	385.7	113.1	27.8	356.2	104.4	31.8	324.4	95.1	36.6	308.3	90.4	39.1
	40	4.4	422.1	123.7	28.1	390.6	114.5	32.1	356.6	104.5	37	339.5	99.5	39.4
	45	7.2	460.7	135	28.5	426.9	125.1	32.6	390.6	114.5	37.4	372.3	109.1	39.8
	50	10	501.4	146.9	29.1	465.4	136.4	33.3	426.9	125.1	37.9	407.7	119.5	40.2
52045G	35	1.7	431.6	126.5	32.1	397.8	116.6	36.6	361.4	105.9	41.9	343	100.5	44.5
	40	4.4	471.9	138.3	32.7	435.3	127.6	37.3	396.3	116.2	42.5	376.8	110.4	45
	45	7.2	514.5	150.8	33.4	475	139.2	38	433.2	127	43.1	412.5	120.9	45.6
	50	10	559.3	163.9	34.1	517	151.5	38.7	472.5	138.5	43.7	450.6	132.1	46.2
52050G	35	1.7	484.5	142	35.5	446.9	131	40.4	405.8	118.9	46	385	112.8	48.8
	40	4.4	529.7	155.3	36.4	488.7	143.2	41.3	444.6	130.3	46.8	422.4	123.8	49.5
	45	7.2	577.6	169.3	37.3	533.1	156.2	42.1	485.8	142.4	47.5	462.1	135.4	50.2
	50	10	628.1	184.1	37.9	580	170	42.8	529.3	155.1	48.2	504.1	147.8	50.9

Table 3

Notes :

* 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 (14 -15) should be referred for the same.

Computer Print outs for matched ratings with SKM Air Handling Units are available.

CAPACITY RATINGS - 60 Hz

Model AUMR	SST		Condenser Entering Air Temperature											
			°95F (°35C)			°105F (°40.6C)			°115F (°46.1C)			°120F (°48.9C)		
			Total Capacity		PI*	Total Capacity		PI*	Total Capacity		PI*	Total Capacity		PI*
	°F	°C	MBh	kW	kW	MBh	kW	kW	MBh	kW	kW	MBh	kW	kW
62030G	35	1.7	286.9	84.1	21.8	264	77.4	24.8	239.5	70.2	28.1	227.2	66.6	29.8
	40	4.4	313.2	91.8	22.2	288.4	84.5	25.2	262.2	76.9	28.6	249.1	73	30.3
	45	7.2	341.2	100	22.7	314.4	92.1	25.8	286.2	83.9	29.1	272.3	79.8	30.7
	50	10	371.2	108.8	23.4	341.9	100.2	26.4	311.6	91.3	29.6	296.7	87	31.1
62035G	35	1.7	334.5	98	26.8	309.3	90.7	30.1	282.8	82.9	33.6	269.6	79	35.4
	40	4.4	364.5	106.8	27.5	337.3	98.9	30.8	308.9	90.5	34.2	294.9	86.4	35.9
	45	7.2	396.1	116.1	28.2	366.7	107.5	31.5	336.5	98.6	34.9	321.7	94.3	36.6
	50	10	429.4	125.9	28.8	397.9	116.6	32.1	365.8	107.2	35.5	350.1	102.6	37.2
62045G	35	1.7	391.6	114.8	28.8	363.4	106.5	32.8	332.3	97.4	37.5	316.4	92.7	39.9
	40	4.4	429	125.7	29.3	398.5	116.8	33.3	365.3	107.1	37.9	348.4	102.1	40.3
	45	7.2	468.3	137.3	29.8	435.4	127.6	33.9	399.9	117.2	38.5	382	112	40.8
	50	10	509.2	149.2	30.3	474	138.9	34.5	436.7	128	39.1	418.1	122.5	41.4
62050G	35	1.7	459.9	134.8	33.6	424.5	124.4	38.4	386	113.1	44.3	366.6	107.4	47.4
	40	4.4	503.2	147.5	34	465.1	136.3	38.9	424.1	124.3	44.8	403.5	118.3	47.8
	45	7.2	548.8	160.9	34.5	507.8	148.8	39.6	464.1	136	45.4	442.2	129.6	48.3
	50	10	596.8	174.9	35.4	553.1	162.1	40.4	506.8	148.6	46.1	483.9	141.8	48.9
62055G	35	1.7	513.9	150.6	39	473.1	138.7	44.5	429.4	125.9	50.8	407.4	119.4	54
	40	4.4	561.4	164.5	39.6	517.4	151.6	45.2	470.7	138	51.5	447.4	131.1	54.7
	45	7.2	611.7	179.3	40.5	564.1	165.3	46.1	514.2	150.7	52.3	489.5	143.5	55.4
	50	10	665.1	194.9	41.6	613.7	179.9	47.2	560.4	164.3	53.2	534.3	156.6	56.1
62065G	35	1.7	577.9	169.4	43.1	532.6	156.1	48.9	483.5	141.7	55.7	458.7	134.4	59.1
	40	4.4	631.2	185	43.9	582.1	170.6	49.8	529.5	155.2	56.5	503.2	147.5	59.9
	45	7.2	688.2	201.7	44.9	634.8	186.1	50.8	578.4	169.5	57.4	550.3	161.3	60.7
	50	10	749.1	219.6	46.1	690.9	202.5	52	629.9	184.6	58.5	599.8	175.8	61.6

Table 4

Notes :

* 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 (14 -15) should be referred for the same.

Computer Print outs for matched ratings with SKM Air Handling Units are available.

Capacity Control Steps

The Standard Capacity Control Steps are shown below.

Model AUMR		Standard	Number of steps
50Hz	60Hz		
52025G	62030G	100-50-0	2
52030G	62035G	100-50-0	2
52035G	62045G	100-75-50-25-0	4
52040G	62050G	100-75-50-25-0	4
52045G	62055G	100-72-50-28-0	4
52050G	62065G	100-75-50-25-0	4

Table 5

Selection Procedure

Example

The following information should be determined:

1. Required total capacity = 510 MBh (149.5 kW)
2. Saturated suction temperature = 50°F (10°C)
3. Condenser entering air temperature = 115°F (46°C)
4. Power Supply (V/Ph/Hz) = 380/3/50

Enter capacity ratings from Table 3 at 115°F (46°C) condenser entering air temperature and select model **AUMR** 52045G having a cooling capacity of 517 MBh (151.5 kW) at 50°F (10°C) saturated suction temperature, compressor motor power input is 38.7 kW. For further details refer to physical data and specifications sheets.

Capacity ratings are based on sea level operation. Above sea level, apply the following corrections method.

Actual capacity (at level) = Sea level capacity x altitude correction factor (from Table 6).

Altitude Correction Factors

The unit ratings are based on sea level. Above sea level apply the following correction factors:

Altitude		Capacity Multiplier	Power Multiplier
feet	meter		
0	0	1	1
2000	610	0.99	1.01
4000	1219	0.98	1.02
6000	1829	0.97	1.03
8000	2438	0.96	1.04
10000	3048	0.95	1.05

Table 6

Field Connections

AUMR-G series self-contained heavy-duty air cooled condensing units are designed for minimum field interaction.

Power hook-ups for AHU starter, fan interlock and control wiring of thermostat room unit as per Electrical hook-up diagram is all that is required to electrically connect any model of **AUMR-G** series .

Every **AUMR-G** series condensing unit requires, at most, field installed fused disconnect switches or circuit breakers, and room unit thermostat. Refer below for a schematic representation of required field electrical hook-ups for a standard **AUMR-G** series condensing unit.

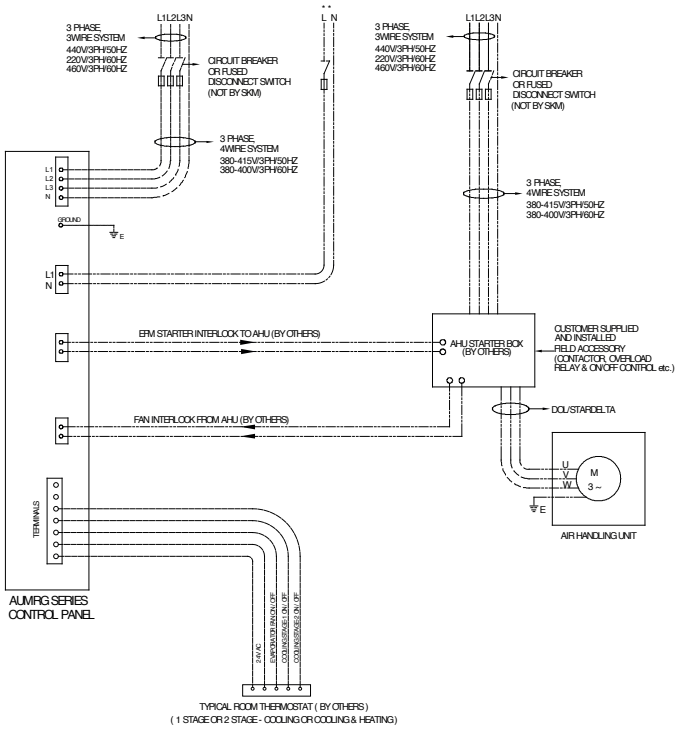
All field wiring must be done in accordance with applicable local and national codes.

For maximum recommended fuse sizes and minimum circuit amps for cable sizing, see page 14~15 of this bulletin.

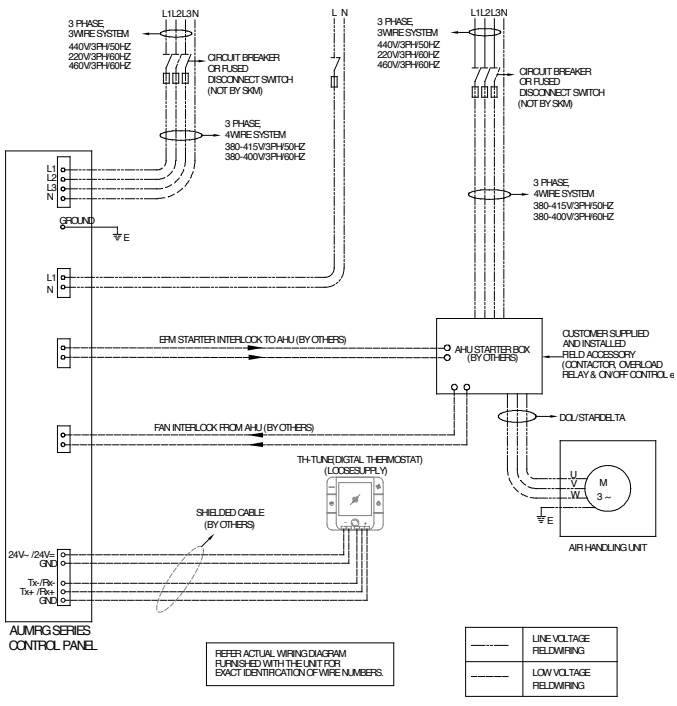
The **AUMR-G** series is then ready to provide cooling, on demand.

Field Wiring Requirement Schematic

For Units With Two Compressors:



For Units With Four Compressors:

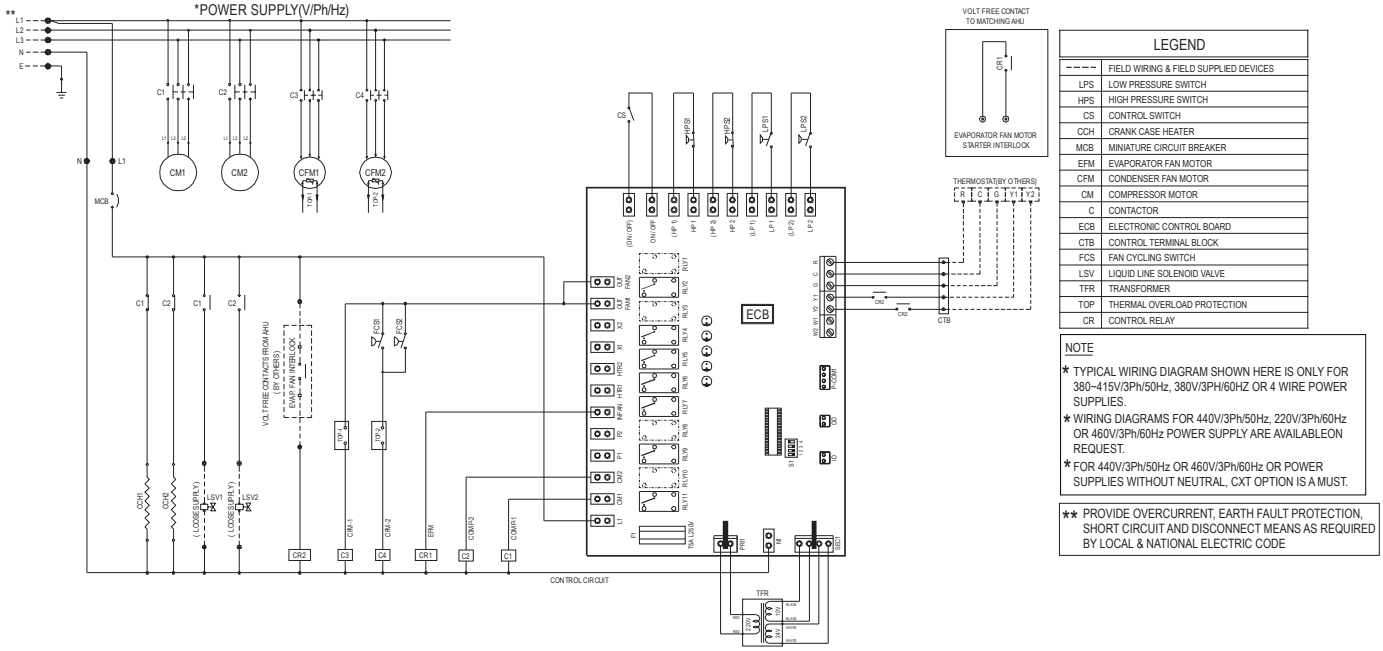


The **AUMR-G** series units rated for 440V/3Ph/50Hz, 460V/3PH/60Hz or power supplies without neutral require separate source of control power supply through field supplied and installed 15A/220V fused control disconnected switch or order with factory buit option 'CXT'.

Typical Wiring Diagram

For Units With Two Compressors:

AUMR Model: 52025G & 52030G



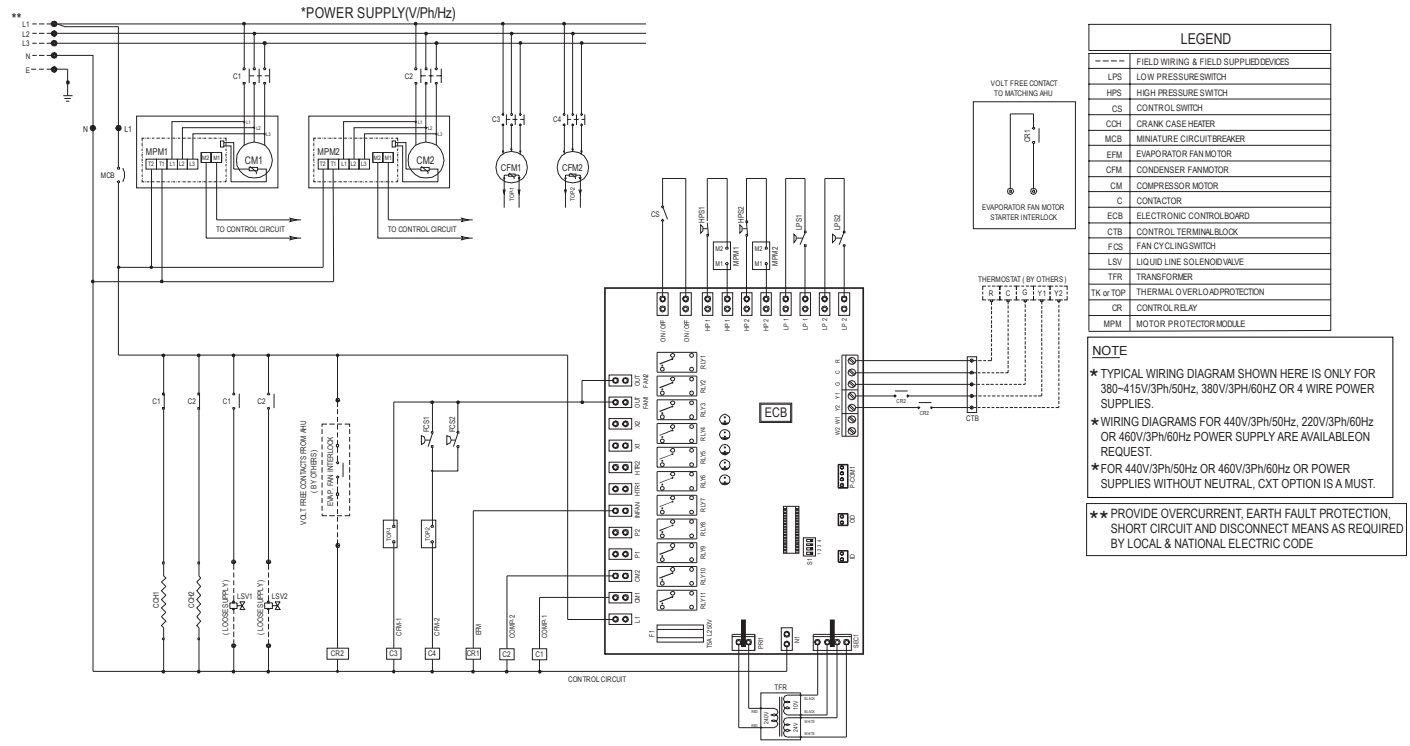
LEGEND	
- - - -	FIELD WIRING & FIELD SUPPLIED DEVICES
LPS	LOW PRESSURE SWITCH
HPS	HIGH PRESSURE SWITCH
CS	CONTROL SWITCH
CCH	CRANK CASE HEATER
MCB	MINIATURE CIRCUIT BREAKER
EFM	EVAPORATOR FAN MOTOR
CFM	CONDENSER FAN MOTOR
CM	COMPRESSOR MOTOR
C	CONTACTOR
ECB	ELECTRONIC CONTROL BOARD
CTB	CONTROL TERMINAL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

NOTE

* TYPICAL WIRING DIAGRAM SHOWN HERE IS ONLY FOR 380~415V/3Ph/50Hz, 380V/3PH/60HZ OR 4 WIRE POWER SUPPLIES.
* WIRING DIAGRAMS FOR 440V/3Ph/50Hz, 220V/3Ph/60Hz OR 460V/3Ph/60Hz POWER SUPPLY ARE AVAILABLEON REQUEST.
* FOR 440V/3Ph/50Hz OR 460V/3Ph/60Hz OR POWER SUPPLIES WITHOUT NEUTRAL, CXT OPTION IS A MUST.

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

AUMR Model: 62030G & 62035G



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

NOTE

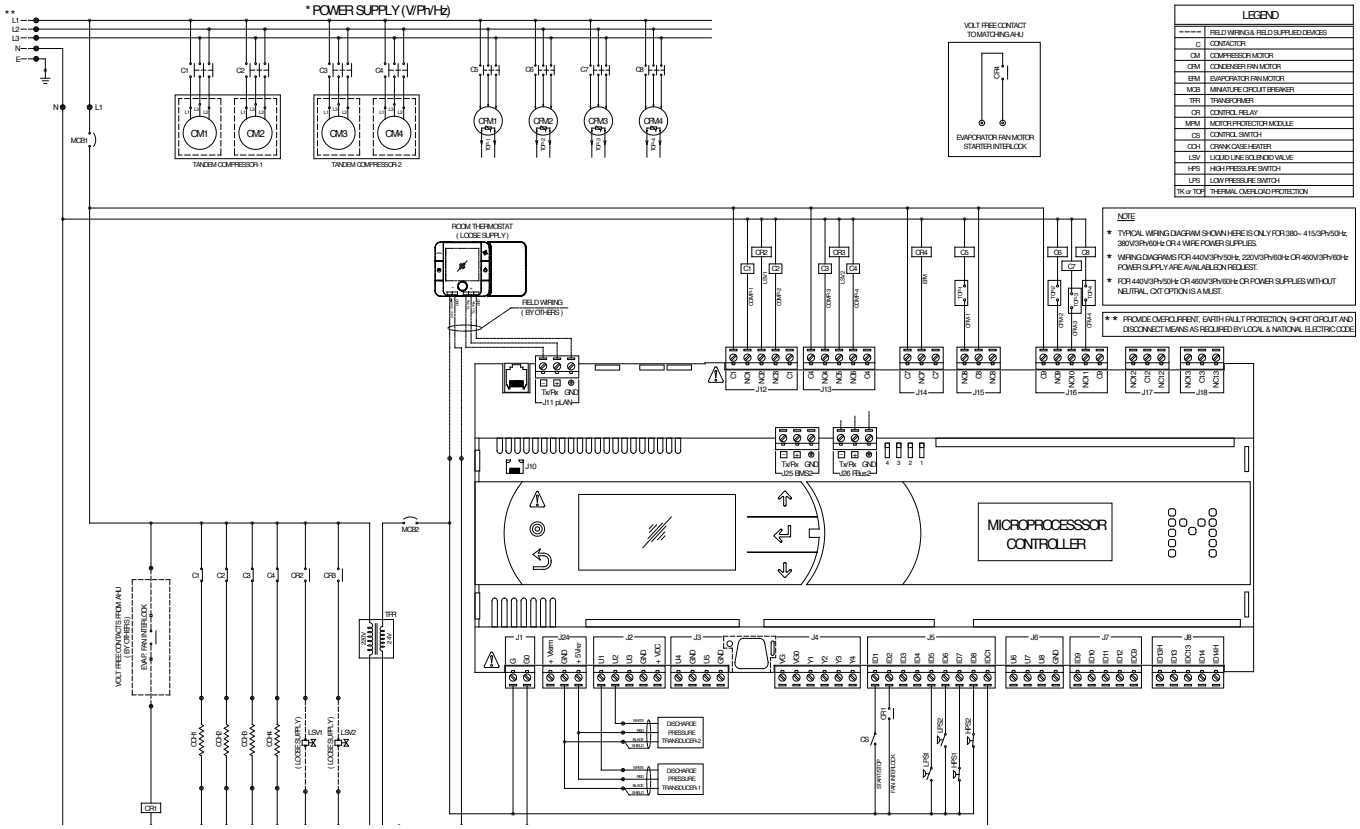
* TYPICAL WIRING DIAGRAM SHOWN HERE IS ONLY FOR 380~415V/3Ph/50Hz, 380V/3PH/60HZ OR 4 WIRE POWER SUPPLIES.
* WIRING DIAGRAMS FOR 440V/3Ph/50Hz, 220V/3Ph/60Hz OR 460V/3Ph/60Hz POWER SUPPLY ARE AVAILABLEON REQUEST.
* FOR 440V/3Ph/50Hz OR 460V/3Ph/60Hz OR POWER SUPPLIES WITHOUT NEUTRAL, CXT OPTION IS A MUST.

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

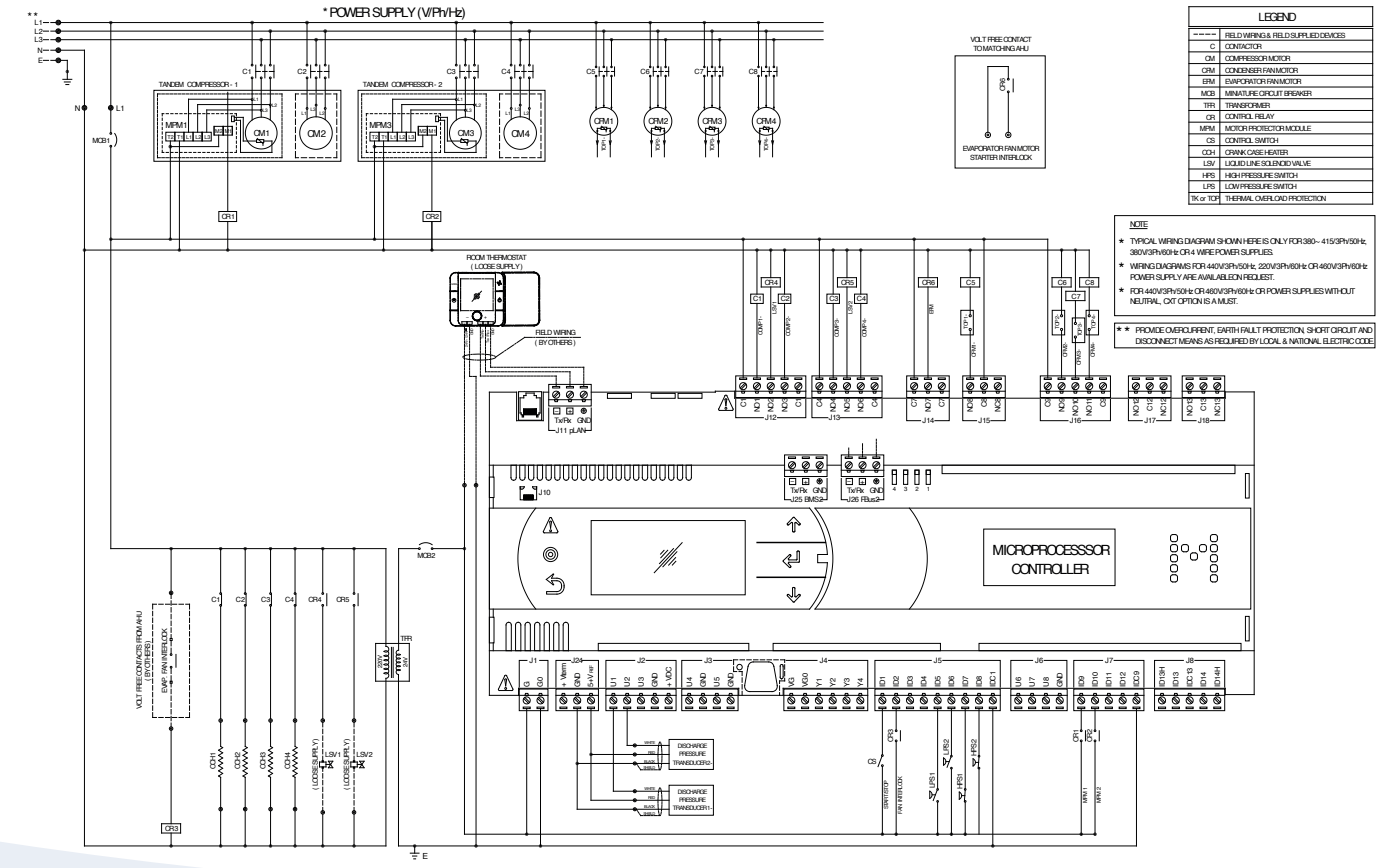
Typical Wiring Diagram

For Units With Four Compressor Models

AUMR Model: 52035G-52050G, 62045G & 62050G



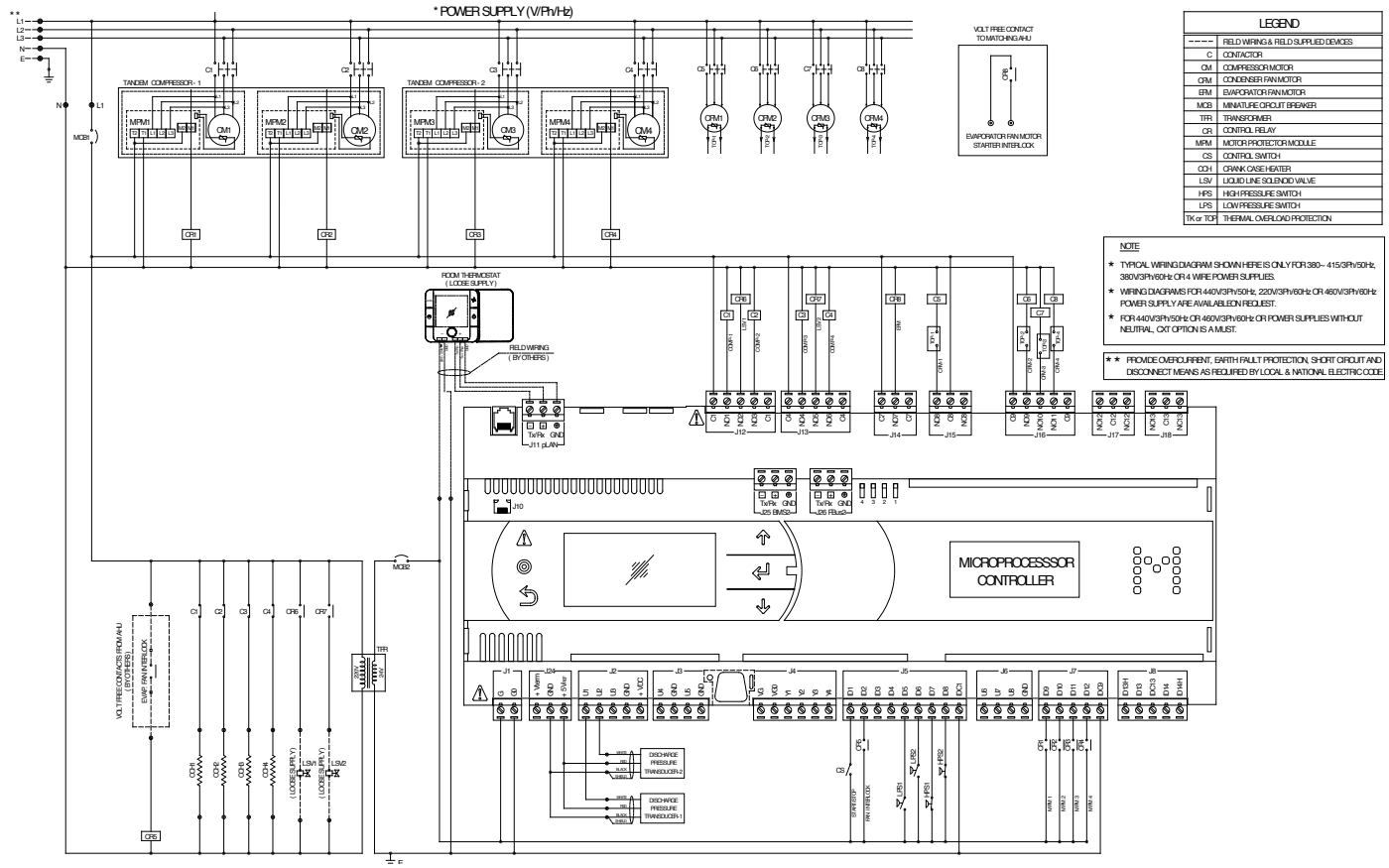
AUMR Model: 62055G



Typical Wiring Diagram

For Units With Four Compressor Models

AUMR Model: 62065G



ELECTRICAL DATA

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

Model AUMR	Unit Characteristic			Compressor			Condenser Fan Motor		
	MFA	MCA	ICF	QTY	RLA	LRA	QTY	FLA	LRA
52025G	100	63	181	2	25	140	2	3.4	13.0
52030G	125	72	219	2	29	174	2	3.4	13.0
52035G	125	94	191	4	19	111	4	3.4	13.0
52040G	125	99	201	4	20	118	4	3.4	13.0
52045G	160	110	228	2 + 2	25 +20	140 +118	4	3.4	13.0
52050G	160	120	238	4	25	140	4	3.4	13.0

Table 7

Power Supply: 440V/3Ph/50Hz

Model AUMR	Unit Characteristic			Compressor			Condenser Fan Motor		
	MFA	MCA	ICF	QTY	RLA	LRA	QTY	FLA	LRA
52025G	100	64	183	2	25	140	2	3.7	14.0
52030G	125	73	221	2	29	174	2	3.7	14.0
52035G	125	96	193	4	19	111	4	3.7	14.0
52040G	125	100	203	4	20	118	4	3.7	14.0
52045G	160	111	230	2 + 2	25 +20	140 +118	4	3.7	14.0
52050G	160	121	240	4	25	140	4	3.7	14.0

Table 8

Power Supply: 380-400V/3PH/60Hz

Model AUMR	Unit Characteristic			Compressor			Condenser Fan Motor		
	MFA	MCA	ICF	QTY	RLA	LRA	QTY	FLA	LRA
62030G	125	75	182	2	30	139	2	3.8	9.0
62035G	160	93	247	2	38	196	2	3.8	9.0
62045G	160	104	223	4	21	140	4	3.8	9.0
62050G	160	126	243	4	26	145	4	3.8	9.0
62055G	200	135	241	2 + 2	30 +26	139 +145	4	3.8	9.0
62065G	200	143	249	4	30	139	4	3.8	9.0

Table 9

ELECTRICAL DATA

Power Supply: 460V/3PH/60Hz

Model AUMR	Unit Characteristic			Compressor			Condenser Fan Motor		
	MFA	MCA	ICF	QTY	RLA	LRA	QTY	FLA	LRA
62030G	100	64	193	2	25	150	2	3.8	14.0
62035G	125	73	226	2	29	179	2	3.8	14.0
62045G	125	96	196	4	19	114	4	3.8	14.0
62050G	125	100	210	4	20	125	4	3.8	14.0
62055G	160	111	240	2 + 2	25 +20	150 +125	4	3.8	14.0
62065G	160	121	250	4	25	150	4	3.8	14.0

Table10

Power Supply: 220V/3PH/60Hz

Model AUMR	Unit Characteristic			Compressor			Condenser Fan Motor		
	MFA	MCA	ICF	QTY	RLA	LRA	QTY	FLA	LRA
62030G	200	141	387	2	57	300	2	6.4	24.0
62035G	250	152	432	2	62	340	2	6.4	24.0
62045G	250	170	370	4	34	225	4	6.4	24.0
62050G	250	183	393	4	37	239	4	6.4	24.0
62055G	315	228	474	2 + 2	57 +37	300 +239	4	6.4	24.0
62065G	400	268	514	4	57	300	4	6.4	24.0

Table 11

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 :

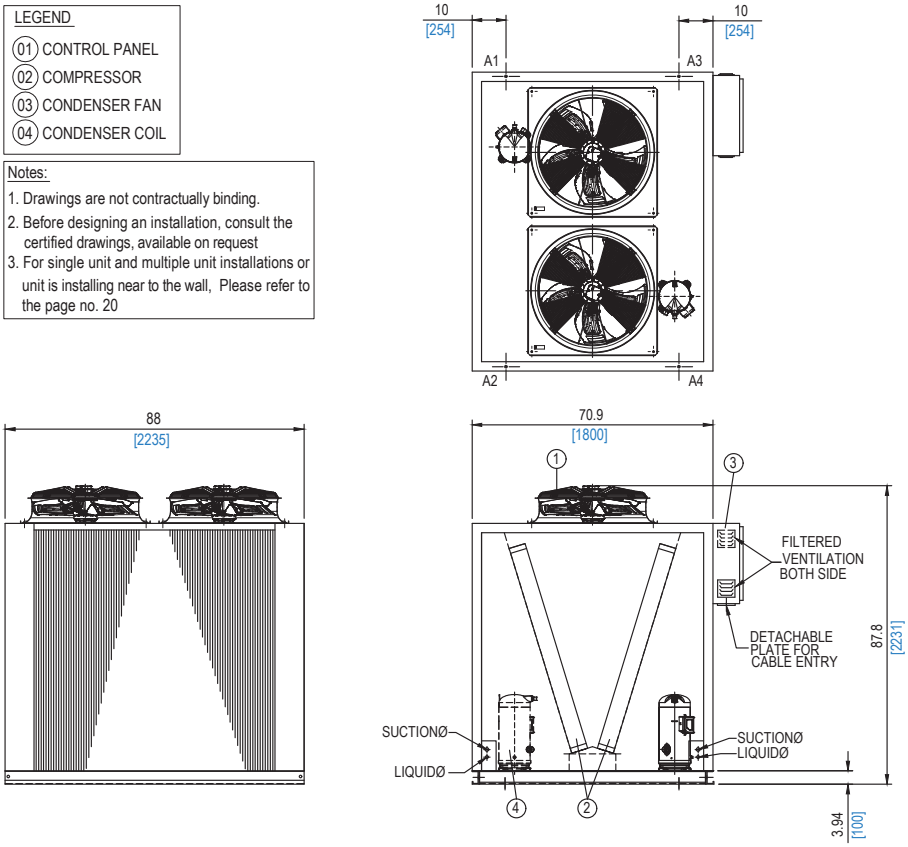
Voltage imbalance not to exceed ± 2 % of the rated voltage.

Dimensional Data

AUMR Models: 52025G, 52030G & 62030G,62035G

LEGEND
01 CONTROL PANEL
02 COMPRESSOR
03 CONDENSER FAN
04 CONDENSER COIL

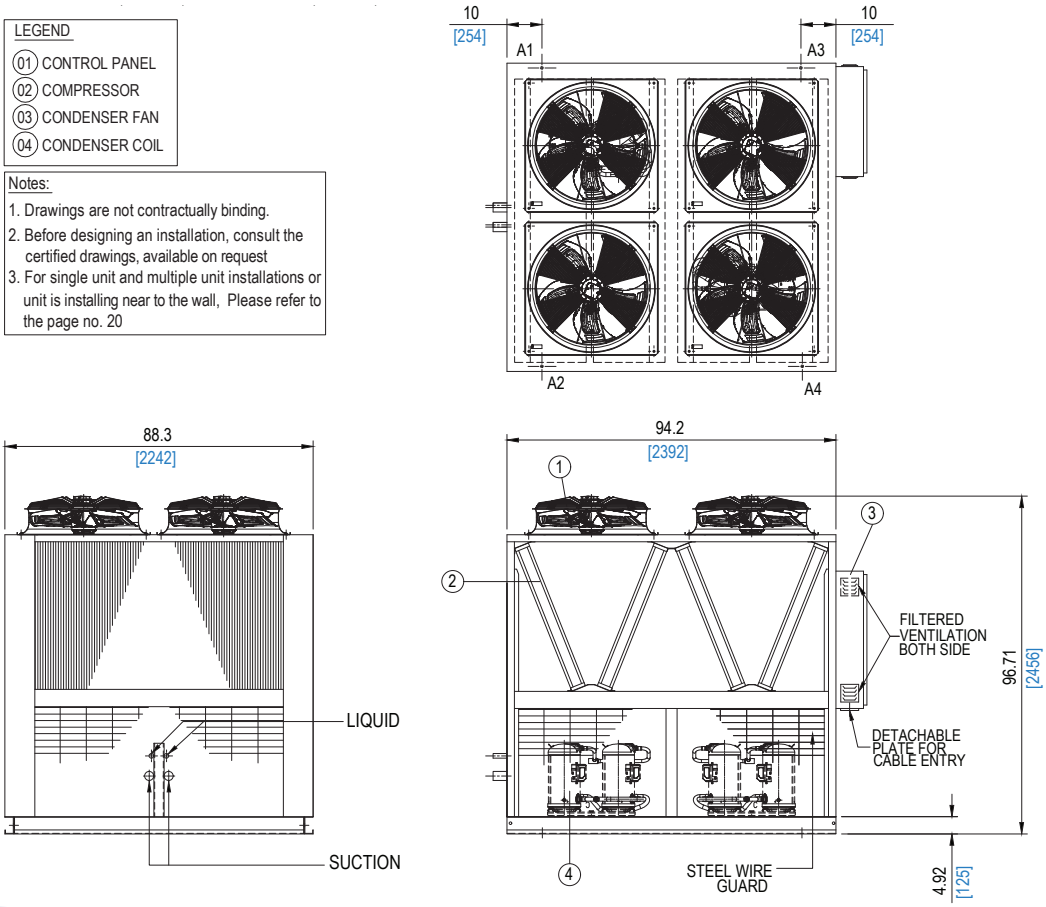
Notes:
1. Drawings are not contractually binding.
2. Before designing an installation, consult the certified drawings, available on request
3. For single unit and multiple unit installations or unit is installing near to the wall, Please refer to the page no. 20



AUMR Models: 52035G, 52040G, 52045G & 62045G, 62050G, 62055G

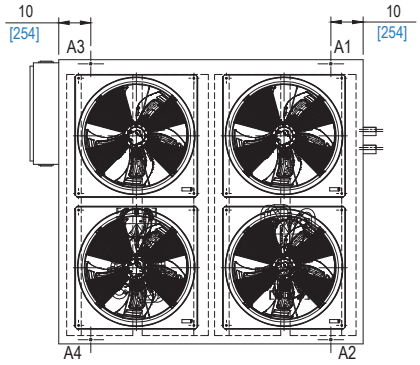
LEGEND
01 CONTROL PANEL
02 COMPRESSOR
03 CONDENSER FAN
04 CONDENSER COIL

Notes:
1. Drawings are not contractually binding.
2. Before designing an installation, consult the certified drawings, available on request
3. For single unit and multiple unit installations or unit is installing near to the wall, Please refer to the page no. 20



Dimensional Data

AUMR Models: 52050G & 62065G

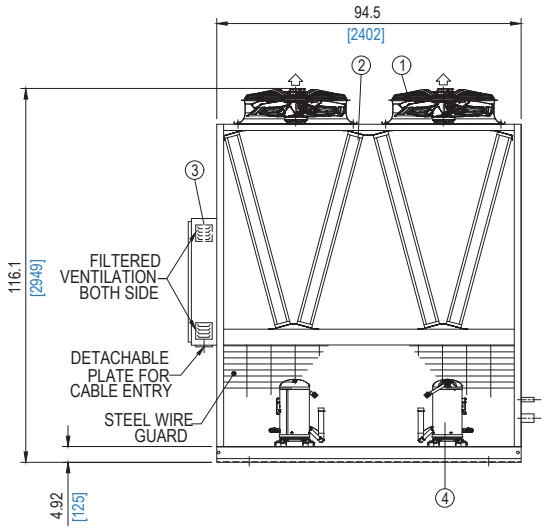


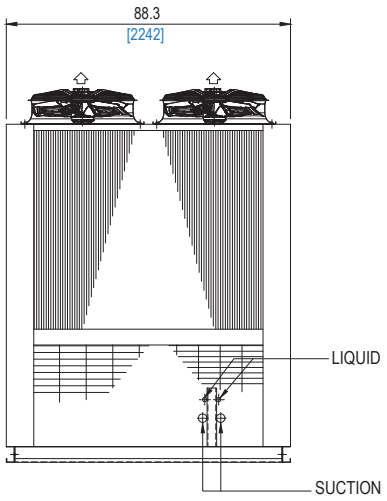
LEGEND

01 CONTROL PANEL
02 COMPRESSOR
03 CONDENSER FAN
04 CONDENSER COIL

Notes:

1. Drawings are not contractually binding.
2. Before designing an installation, consult the certified drawings, available on request
3. For single unit and multiple unit installations or unit is installing near to the wall, Please refer to the page no. 20





LOADING POINTS - 50Hz

AUMR	UNIT	LOADING POINTS				TOTAL WEIGHT
		A1	A2	A3	A4	
52025G	lb.	542	490	604	579	2215
	Kg.	246	222	274	262	1005
52030G	lb.	573	519	633	609	2335
	Kg.	260	236	287	276	1059
52035G	lb.	835	771	911	890	3407
	Kg.	379	350	413	404	1545
52040G	lb.	879	812	952	934	3578
	Kg.	399	368	432	423	1622
52045G	lb.	887	818	958	941	3604
	Kg.	402	371	435	427	1635
52050G	lb.	1013	943	1118	1081	4155
	Kg.	459	428	507	490	1884

Table 12

LOADING POINTS - 60Hz

AUMR	UNIT	LOADING POINTS				TOTAL WEIGHT
		A1	A2	A3	A4	
62030G	lb.	543	491	605	580	2219
	Kg.	246	223	274	263	1006
62035G	lb.	573	519	633	609	2335
	Kg.	260	236	287	276	1059
62045G	lb.	839	775	915	894	3422
	Kg.	381	351	415	405	1552
62050G	lb.	883	816	956	938	3593
	Kg.	400	370	434	425	1629
62055G	lb.	887	819	959	942	3607
	Kg.	402	371	435	427	1636
62065G	lb.	1014	944	1119	1082	4159
	Kg.	460	428	507	491	1886

Table 13

Sound Data

50Hz

MODEL	Sound Power Level in dBA ref 10^{-12} W								Overall
	Spectrum per Octave band								
AUMR	63	125	250	500	1k	2k	4k	8k	dBA
52025G	51.3	50.6	59.5	66.7	68.9	70.6	68.1	67.4	75.7
52030G	51.3	50.6	59.5	66.6	68.9	70.3	67.5	67.2	75.5
52035G	54.3	53.6	62.5	69.6	71.3	72.3	69.5	70.1	77.9
52040G	54.3	53.6	62.5	69.7	71.6	72.0	69.5	70.1	77.8
52045G	54.3	53.6	62.5	69.7	71.9	73.6	71.1	70.4	78.7
52050G	54.3	53.6	62.5	69.7	71.9	73.6	71.1	70.4	78.7

Table 14

50Hz

MODEL	Sound pressure level in dBA ref $2x10^{-5}$ Pa @ 1meter in free field								Overall
	Spectrum per Octave band								
AUMR	63	125	250	500	1k	2k	4k	8k	dBA
52025G	40.3	39.6	48.5	55.7	57.9	59.6	57.1	56.4	64.7
52030G	40.3	39.6	48.6	55.6	57.9	59.3	56.5	56.2	64.5
52035G	43.3	42.6	51.5	58.7	60.3	61.3	58.6	59.1	66.9
52040G	43.3	42.6	51.5	58.7	60.6	61.0	58.5	59.2	66.9
52045G	43.3	42.7	51.5	58.7	61.0	62.6	60.1	59.4	67.7
52050G	43.3	42.7	51.5	58.7	61.0	62.6	60.1	59.4	67.7

Table 15

60Hz

MODEL	Sound Power Level in dBA ref 10^{-12} W								Overall
	Spectrum per Octave band								
AUMR	63	125	250	500	1k	2k	4k	8k	dBA
62030G	51.3	50.8	59.7	67.6	69.4	74.6	69.2	67.4	77.6
62035G	51.3	51.7	67.9	76.3	70.7	74.9	68.9	67.4	80.2
62045G	54.3	53.9	62.7	71.5	72.4	73.3	70.4	70.3	78.9
62050G	54.3	54.0	62.7	71.7	73.1	74.6	71.7	70.3	79.6
62055G	54.3	53.8	62.7	70.6	72.5	77.6	72.2	70.4	80.7
62065G	54.3	53.8	62.7	70.6	72.5	77.6	72.2	70.4	80.7

Table 16

60Hz

MODEL	Sound pressure level in dBA ref $2x10^{-5}$ Pa @ 1meter in free field								Overall
	Spectrum per Octave band								
AUMR	63	125	250	500	1k	2k	4k	8k	dBA
62030G	40.3	39.8	48.7	56.6	58.5	63.6	58.2	56.4	66.7
62035G	40.3	40.7	56.9	65.4	59.8	63.9	57.9	56.4	69.2
62045G	43.3	42.9	51.7	60.5	61.4	62.3	59.4	59.3	67.9
62050G	43.3	43.0	51.7	60.7	62.1	63.6	60.7	59.3	68.7
62055G	43.3	42.8	51.7	59.6	61.5	66.6	61.2	59.4	69.7
62065G	43.3	42.8	51.7	59.6	61.5	66.6	61.2	59.4	69.7

Table 17

Location and Space Requirements

Due to the vertical air flow discharge condenser design, it is recommended that certain precautions are to be taken before installation. There should be no obstruction on the air flow.

Orient the unit so that prevailing winds blow parallel to the unit length thus minimizing the effects on condensing pressure. If it is not practical to orient the unit in this manner, a wind deflecting shield should be considered.

It is also necessary to provide adequate clearance on all sides of the unit for service access and satisfactory performance. This will prevent excessive condensing temperatures and enhance system performance and operating economy.

A flat concrete foundation or floor which can support the weight of the equipment must be provided as the unit must be level for proper operation and functioning of controls.

Under certain critical conditions it is recommended that vibration isolators of rubber-in-shear or spring type be installed under the base.

The isolators must be designed for the operating weight of the unit. For operating load points refer to Loading Points Data (page No.18).Correct selection of types of isolators depends upon application and structure.

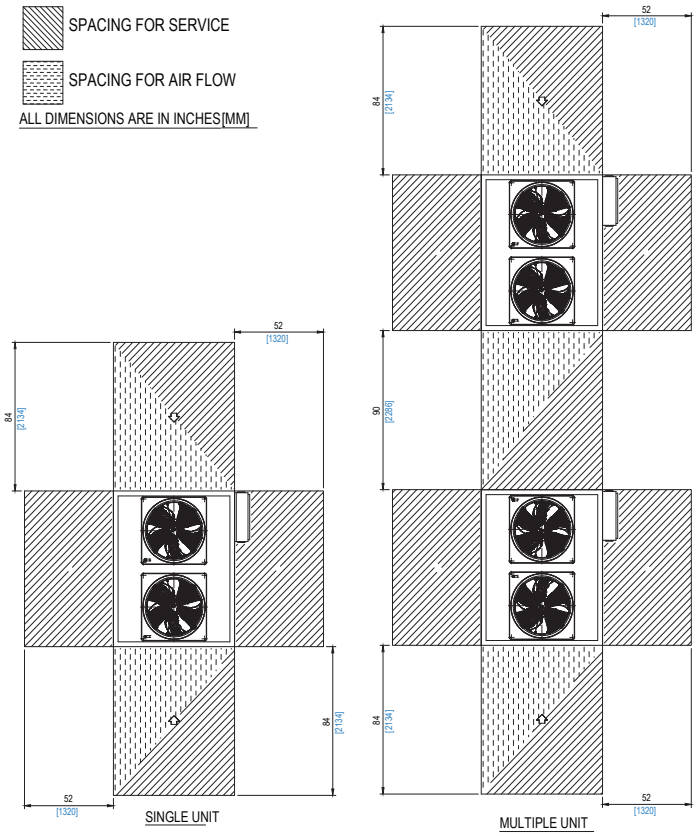
Location and Space Requirements

MODELS: AUMR-52025G, 52030G / 62030G, 62035G

SPACING FOR SERVICE

SPACING FOR AIR FLOW

ALL DIMENSIONS ARE IN INCHES[MM]

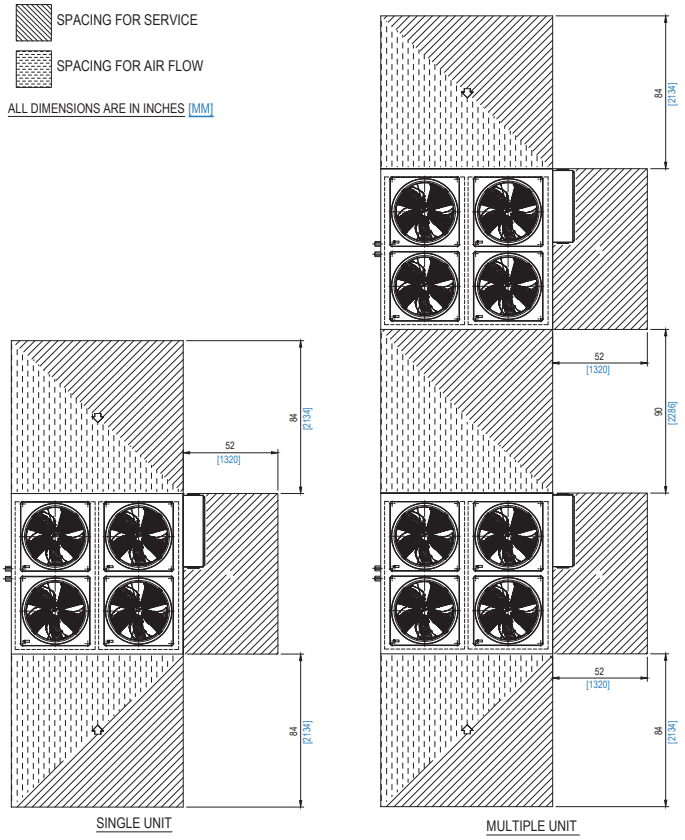


MODELS: AUMR-52035G, 52040G, 52045G, 52050G
62045G, 62050G, 62055G, 62065G

SPACING FOR SERVICE

SPACING FOR AIR FLOW

ALL DIMENSIONS ARE IN INCHES [MM]

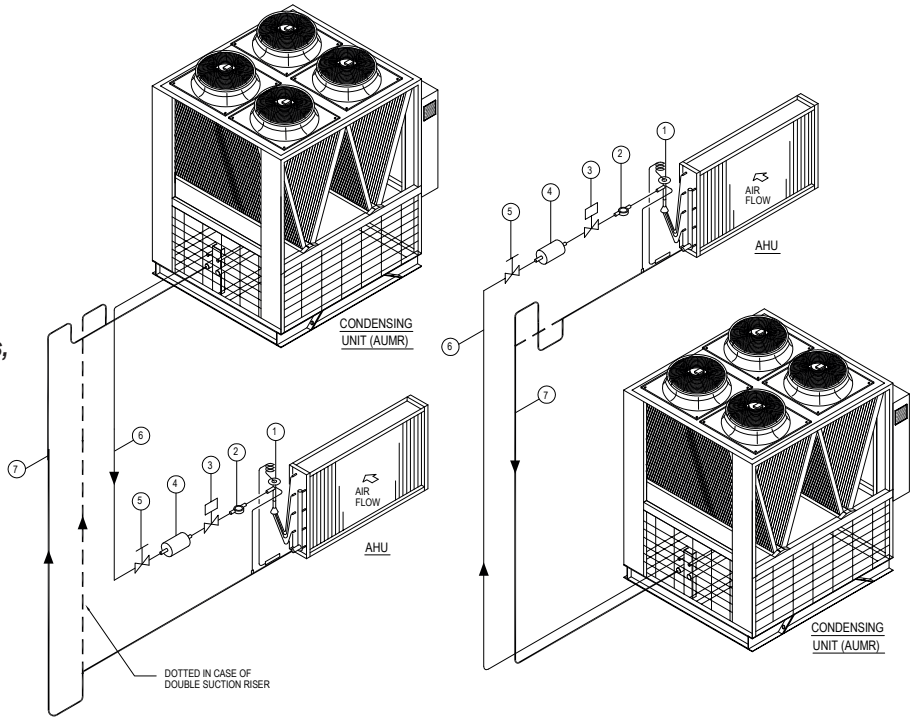


Typical Refrigeration Piping

Legend

1. Expansion Valve
2. Sight Glass
3. Solenoid Valve
4. Filter Drier
5. Ball valve
6. Liquid Line
7. Suction Line

Single Circuit Unit Shown. For Dual circuit units, piping of second circuit is similar.



Refrigerant Piping

Correct design and size of refrigerant piping is necessary for proper operation. The refrigerant piping generally should be designed to accomplish the following:

a. To ensure proper refrigerant feed to the evaporator.

b. To provide practical refrigerant line sizes without excessive pressure drop.

c. To maintain uniform return of lubricating oil to the compressor.

d. To prevent refrigerant from entering the compressor and causing compressor damage due to "slugging".

Field Expansion Valve Selection

The following recommendations should be taken into consideration when selecting expansion valves in field.

1. Expansion valves should be installed as close to the evaporator as possible, mounted directly to the distributor.

2. The following possible sources of pressure drop to be considered:
   a. Friction losses through refrigerant lines.
   b. Pressure drop across valves and controls.
   c. Pressure drop due to vertical lift of liquid line for R-410A 1°F **(0.55°C)** sub cooling must be allowed for each 10 ft (3m) vertical rise in order to avoid flash gas forming due to the weight of the column of liquid refrigerant.

SKM **AUMR-G** Series units are designed with a sub cooling circuit enough to sub cool the liquid 10°F (5.55 °C), which gives the liquid maximum 50 ft. (15.24m) lift without additional sub cooling. Liquid suction heat exchanger can be used for additional sub cooling in order to avoid flash gas forming.

Matching DX Coil Selection

For single circuit **AUMR-G** Series, the DX coil selection in a MAH or other air handler from SKM should be based on total capacity. For dual circuit **AUMR-G** Series, extra care should be exercised and correspondingly split, by face area or number of rows to correspond and match the capacity split available in the dual circuited **AUMR-G** Series selected. For optimum matching the DX coil should be ordered from SKM as well.

SKM provides correct no. of feeds and circuits and properly sized distribution to ensure the correct split on the DX coil is made available to match the particular selected **AUMR-G** Series model.

Recommended Refrigerant Line Sizes - 50Hz & 60HZ

Model AUMR	Liquid Line, Inches								Suction Line, Inches							
	Circuit 1				Circuit 2				Circuit 1				Circuit 2			
	25ft	50ft	75ft	100ft	25ft	50ft	75ft	100ft	25ft	50ft	75ft	100ft	25ft	50ft	75ft	100ft
52025G	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8	1 1/8	1 1/8	1 3/8	1 3/8	1 1/8	1 1/8	1 3/8	1 3/8
52030G	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8	1 1/8	1 3/8	1 3/8	1 3/8	1 1/8	1 3/8	1 3/8	1 3/8
52035G	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8	1 1/8	1 3/8	1 3/8	1 5/8	1 1/8	1 3/8	1 3/8	1 5/8
52040G	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8	1 3/8	1 3/8	1 5/8	1 5/8	1 3/8	1 3/8	1 5/8	1 5/8
52045G	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 3/8	1 5/8	1 5/8	1 5/8	1 3/8	1 5/8	1 5/8	1 5/8
52050G	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 3/8	1 5/8	1 5/8	2 1/8	1 3/8	1 5/8	1 5/8	2 1/8

Table 18

Model AUMR	Liquid Line, Inches								Suction Line, Inches							
	Circuit 1				Circuit 2				Circuit 1				Circuit 2			
	25ft	50ft	75ft	100ft	25ft	50ft	75ft	100ft	25ft	50ft	75ft	100ft	25ft	50ft	75ft	100ft
62030G	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8	1 1/8	1 3/8	1 3/8	1 3/8	1 1/8	1 3/8	1 3/8	1 3/8
62035G	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8	1 1/8	1 3/8	1 3/8	1 5/8	1 1/8	1 3/8	1 3/8	1 5/8
62045G	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 3/8	1 3/8	1 5/8	1 5/8	1 3/8	1 3/8	1 5/8	1 5/8
62050G	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 3/8	1 5/8	1 5/8	1 5/8	1 3/8	1 5/8	1 5/8	1 5/8
62055G	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 5/8	1 5/8	1 5/8	2 1/8	1 5/8	1 5/8	1 5/8	2 1/8
62065G	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 5/8	1 5/8	2 1/8	2 1/8	1 5/8	1 5/8	2 1/8	2 1/8

Table 19

SKM **AUMR-G** Series Condensing Units are designed for satisfactory operation with single suction line.

1. Suction Line sizing selection recommendation in Table 18 & 19 is based on 2ºF temperature drop.
2. Double suction risers, for applications with systems having large variations in capacity , are recommended to ensure proper oil flow up and return to compressor.
3. Liquid line sizing selection recommendation in table 18 & 19 is based on 2ºF temperature drop.
4. Recommended line sizes in Table 18 & 19 are for guidance only. For detailed proper piping, consult recognized piping references like ASHRAE Guide and Data Book for assistance.
5. Suction and liquid line sizes are based on equivalent lengths.

SKM is not responsible for faulty or improper design or sizing of refrigerant lines. The above recommendations do not incorporate necesarry slopes. etc. that may be required on horizontal risers, etc.

GUIDE SPECIFICATIONS

GENERAL FEATURES

Condensing units shall be composed of compressor(s), fan(s), Coil(s), refrigerant piping, electrical components & enclosing cabinet in one piece.

Unit shall be factory assembled, internally wired, piping connections terminated with sealed and soldered copper pipe ends. Unit shall be shipped with nitrogen holding charge (actual charging with refrigerant R-410A should be done at site). Unit shall be capable to operate from 50°F (10°C) to 120°F (48.9°C) ambient temperature and shall be rated in accordance with AHRI-365 standard.

COIL(S)

Coil shall be air cooled with integral sub-cooling circuit, constructed of seamless copper tubes 3/8" OD mechanically bonded to wavy Aluminium (Copper) fins with 14FPI (1.8mm) or 16FPI (1.6mm) spacing. Coil shall be tested against leakage bypressurizing air at 715 psig (4930 kPa) in coil, under water, cleaned and dehydrated at the factory.

COMPRESSOR(S)

Compressor shall be hermetic scroll, refrigerant gas cooled furnished with internal overload protection device, crankcase heater, and shall be mounted on rubber isolators.

CONDENSER FAN(S) & MOTOR(S)

The machine shall be furnished with direct driven propeller type discharging air upward condenser fans. Fans shall be constructed of corrosion resistant blades such as heavy gauge aluminum. The fan and drive shall be held in proper alignment. Fan assemblies shall be provided with heavy gauge, rust resistant steel wire fan guard. All condenser fans shall be individually, statically, and dynamically balanced for vibration free operation.

Motors shall be Totally Enclosed Air Over (TEAO), 6 poles, with class 'F' insulation, minimum IP-55 protection and factory wired to unit control panel.

REFRIGERANT PIPING

The refrigerant circuit piping shall be fabricated from ACR grade copper piping, with 1or 2, refrigeration circuits.The piping connections shall be terminated with sealed & soldered copper pipe ends,which give much simplicity & ease to the installation.

CASING

Unit casing shall be made of zinc coated galvanized steel sheets conforming to JIS-G3302 and ASTM A653 / A653M - 17 which shall be phosphatized and then electrostatically dry powder coated of approx.60 microns to provide an extremely tough, scratch resistance, excellent anti-corrosive protection that can pass 1000 hrs in 5% salt spray testing at 95°F (35°C) and 95% relative humidity as per ASTM B117.

Unit casing shall be provided with access panels for easy service and maintenance of all units parts.

CONTROL PANEL

The unit mounted control panel enclosure is fabricated out of heavy gauge sheet steel in phosphatized powder coated baked finish. The enclosure conforms to IP54 as per guidelines in IEC 529. The panel is factory wired in accordance with NEC 430 & 440, labelled, tagged and features 220V / 240V controls.

- All compressors shall be with DOL starting.
- Individual contactor for compressors and condenser fan motors. .
- Internal overload protection or electronic protection module for compressors.
- Internal thermal overload protection for condenser fan motors.
- Unit controller for operational and safety control.
- Compressor short cycling protection.
- High compressor motor temperature. (For compressors with electronic module).
- Control circuit on/off switch.
- Control circuit breaker.
- Power and control circuit terminal blocks.
- High pressure protection.
- Low pressure protection.
- Control Relay.

اجهـــزة تكييـــف هـــواء
AIR CONDITIONING EQUIPMENT

CONTACT US

HEAD OFFICE

P.O Box: 6004, Sharjah,
United Arab Emirates

Tel: +971 6 514 3333
Fax: +971 6 514 3300

Email: sales@skmaircon.com
Email: info@skmaircon.com

Spare Parts Division
spareparts.skm@skmaircon.com

Service Center
aftersales@skmaircon.com

For more details on SKM Sales & Distribution Network, please visit:
www.skmaircon.com

169/2018