

# AUMR-G1 + CADX-AG1 Series

## Split Air Conditioners



50Hz

R-410A  
REFRIGERANT



Range 4.6 TR to 21.7 TR  
(16 kW to 76.2 kW)



CE

## Contents

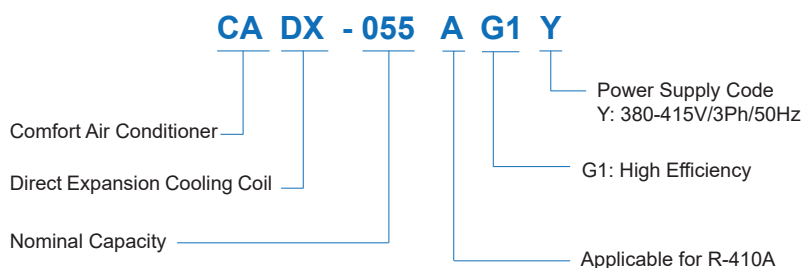
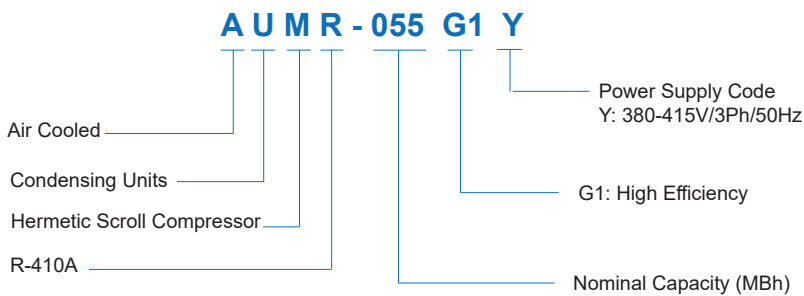
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## Legend

The following legends are used throughout this manual:

|                                  |  |
|----------------------------------|--|
| cfm.....Cubic feet per minute    | V.....Volts  |
| Hz.....Hertz                     | kPa..... Kilopascal                                    |
| kW.....Kilowatts                 | EWB..... Evaporator Wet Bulb air entering temperature. |
| kg.....Kilogram                  | BPF..... By Pass Factor                                |
| lbs.....Pounds                   | EER..... Energy Efficiency Ratio                       |
| l/s.....Liters per second        | AFR..... Air Flow Rate                                 |
| MBh.....BTUH x 1000              | in. wg.....Inch water gauge                            |
| Ph.....Phase                     | RPM.....Revolutions per minute                         |
| PI.....Power Input of Compressor |  |
| TR.....Tons of Refrigeration     |  |

## Nomenclature



## Introduction

The series of SKM air cooled split system air conditioner has been developed to satisfy the needs in air conditioning practices, meet high quality of job requirements every time and to deliver the best in split system performance. SKM air cooled split air conditioners consist of ceiling suspended indoor air handler (**CADX-AG1**) matched with floor mounted outdoor air cooled condensing unit (**AUMR-G1**) series.

SKM split units are internally wired and all that is required to be done on site is ducting, refrigerant piping, main power supply connections, thermostat wiring, control wiring between AUMRG1 & CADXAG1 units.

Unit power supply for AUMRG1 units and CADXAG1 units is being separated and two independent refrigeration circuits are provided when two compressors are used.

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**

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



**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.**



## GENERAL FEATURES

SKM split system air conditioners incorporate many features and benefits in both the air handler and condensing units, which together provides a heavy duty, robust and long lasting commercial unit's application.

SKM split air conditioners combined high efficiency components to provide an extremely rugged and energy efficient split system that will provide cooling with higher efficiency for a long and extended period of time.

SKM split system is **AUMR-G1+ CADX-AG1** is yet another model in the top class range of SKM products which uses the following basic components:

- High efficiency totally sealed hermetic scroll compressors utilizing the most current state of the art technology and provides smooth, efficient and quiet operation.
- Totally enclosed, Class F insulated, condenser and evaporator fan motors.
- Heavy duty condenser and evaporator coils optimized and designed for a long life maintenance free operation.
- Cabinet construction specifically for gulf climate condition.
- Electronic control board for the unit operation.
- Factory matched performance and reliable output to minimize field decisions.
- Many standard features which are not included in residential domestic type split systems.
- Typically, much heavier gauge tubing and thicker fins for ruggedness and long life.
- Standard Factory Installed Suction & Liquid Service valves.

## COMPONENT FEATURES

### AUMR-G1 CONDENSING UNIT

#### Compressor

Compressors used in the **AUMR-G1** series condensing units are hermetically sealed, hi-efficiency, low noise, and compact scroll with the following features:

- High efficiency.
- Quiet operation, low sound levels.
- Better debris handling.
- Self compensating of wear ("wear-in vs. wear-out").
- 70% fewer moving parts than comparably sized reciprocating compressors.
- Internal motor protection / Advanced scroll temperature protection.
- Suction gas motor cooling.
- Suction screen.
- Disc type check valve.
- Centrifugal force for oil lubrication.
- Brazed fittings as standard, rotalock as an option.

#### Condenser Coils

Condenser coils are manufactured from corrugated aluminium fin and Hi-X seamless copper tubes mechanically bonded to aluminium fins to ensure optimum heat transfer. All coils are tested against leakage by air pressure 715psig(4930kPa) under water. An integral subcooling circuit is incorporated in the lower section of the condenser to increase system capacity. The additional condenser surface provides more cooling using less energy at no additional cost.

#### Condenser Fans

Condenser fans are propeller type with aluminum alloy blades and are directly driven by electric motors. Motors are Totally Enclosed Air Over (TEAO), six pole or four pole with Class F insulation and IP54/55 protection depending on models. Complete fan assembly is provided with fan guard.

Motors are wired to the control panel to control the operation of these motors along with the compressors.

#### Control Panel

The **AUMR-G1** condensing are provided with IP-54 control panel enclosure comprising all starting, operating and safety controls. The panel is factory wired in accordance with NEC 430 & 440, labelled, tagged and features 220V / 240V controls.

- Starting contactors for compressors and motors.
- Internal overload protection for compressors.
- Internal overload protection for the motors (either wired internally inside the motor or with brought-out terminals connected to control circuit, depending on models)
- Electronic control board for unit operation.
- Diagnostic LEDs on the control board for easy troubleshooting .
- Compressor short cycling protection.
- Control switch for unit on/off.
- Control circuit breaker.
- Power and control circuit terminal blocks.
- High pressure protection.
- Low pressure protection.

#### Unit Casing

The unit casing used in the **AUMR-G1** condensing unit is made of zinc coated galvanised steel sheets conforming to JIS-G 3302 and ASTM A653 which is phosphatized and baked after an electrostatic powder coating in RAL7032 color scheme of approximately 60 microns. This finish and coating can pass a 1000 hour in 5% salt spray testing at 95°F (35°C) and 95% relative humidity as per ASTM B117.

## CADX-AG1 AIR HANDLING UNIT

### Evaporator Coils

All evaporator coils are made of inner grooved copper tubes mechanically bonded into corrugated aluminum fins to ensure optimum heat transfer. Coils conform to AHRI-410. All evaporator coils are tested against leakage by air pressure of 450 psig (3102 kPa) under water. Each evaporator coil is supplied with a factory sized and matched thermostatic expansion valves and 4 mounting holes for ceiling suspension.

### Evaporator Fan & Drive

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

Fans are driven by Totally Enclosed, IP55 Protected, 4 Pole Class F insulated electric motors which conform to relevant IEC standards.

### Filter

All CADX-AG1 units are supplied as standard with 1" (25mm) thick permanent washable expanded aluminum flat filter having average dust arrestance 54% according to ASHRAE standard 52-76.

### Casing \ Structure (CADX-AG1):

The unit casing for CADX-AG1 is made of zinc coated galvanized steel sheets conforming to JIS-G3302 and ASTM A653 which is phosphatized and baked after an electrostatic powder coating in RAL7032 color scheme of approximately 60 microns. This finish and coating can pass a 1000 hour in 5% salt spray testing at 95°F (35°C) and 95% relative humidity as per ASTM B117. Panels and casing are insulated with 1" thick fiberglass (with BGT coating) thermal and acoustic insulation having density of 2 lb/ft<sup>3</sup>. (32 kg/m<sup>3</sup>) and thermal conductivity of 0.23 BTU.in/ft<sup>2</sup>°Fh (0.033 W/m<sup>2</sup>°K). Insulation meets the requirements of NFPA 90A and 90B for fire resistance.

### Refrigerant R- 410A

#### Why 410A?

R-410A has a higher volumetric cooling capacity compared to R-22 and has better thermal exchange properties. This results in overall performance gains in terms of system efficiency. The greater density of the vapour in R-410A permits higher system velocities, reduces pressure drop losses and allows smaller diameter tubing to be used. In other words a smaller unit can be developed using a smaller displacement compressor, less coil and less refrigerant while maintaining system efficiencies comparable to current day R-22 equipment.

## Benefits

### • No ozone depletion potential or phase-out date

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

### • Reduced service costs

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

## Attention points

- Pressure level: 1.6 times of R-22.
- Lubricating oil: Ester Oil absorb moisture easily (Never mix with mineral oil).
- Tools exclusive for R-410A.
- Never mix R410A with other refrigerant.
- Driers, valves and even copper tube must be approved for use with R-410A.
- Never allow refrigerant cylinders to exceed (60°C).

## OPTIONAL FEATURES

As with all SKM air conditioning units, a wide range of options are available with SKM Split Units on request.

### Alternative Condenser Material

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

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

### Alternative Evaporator Material

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

- For Copper Fins specify (EFC)\* .
- For Precoated Aluminum Fins, specify (EFAP)\*.
- For Aluminum Fins with Aeris Coat Protection, specify (EFAA)\*.
- For Copper Fins with Aeris Coat Protection, specify (EFCA)\*.

### 2" (50mm) Flat Filter Section\*

(FSIP2)

For heavy filtration need a section can be provided without or with aluminium cleanable filter.



**External Overload Protection (EOP)**

For those electrical specification which requires additional overload protection for the compressors.  
**(Not required with CBC option)**

**Voltage Monitoring Module (VMM)**

Provides protection in the event of:

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

**Pressure Gauges (SDG1)**

Suction and discharge indication of each refrigerant circuit. Gauges mounted outside the Control Panel.

**Liquid Line Controls (CRSP)**

Refrigeration specialties comprising solenoid valve, filter drier, sight glass and Ball valve. Factory sizing and selection ensures correctly sized and selected components to complete the field installation.

**Rotalock Valves on compressors (RVC)**

For additional facilitation of maintenance of unit.

**Circuit Breaker for compressor (CBC)**

For those electrical specification which requires additional short circuit and overload protection for the compressors.

**Condenser Coil Guard (CGP)**

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

**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.

**Anti-Freeze Thermostat\* (AFT)**

For evaporator coil freeze -up protection.

**Manual Reset Type High Pressure Switch (MHP)**

To replace standard auto reset, capsule type pressure switch.

**Compressor Run Hour Meter (RHM)**

To monitor operating hours of each compressor.

**Stainless Steel Drain Pan (Grade 304)\* (SDP-304)**

Stainless steel drain pan (Grade 304). Insulation under drain pan as per SKM standard.

**Stainless Steel Drain Pan\* (SDP-316)**

Heavy gauge 316 stainless steeldrain pan under the entire cooling coil. Insulation under drain pan as per SKM standard.

**Extra Ball Valve (XFV)**

Extra Ball valve can be incorporated in the liquid line.

**Electric Heating\* (HTR1)**

Electric heating batteries are made up of finned heating elements, constructed from high quality 80/20 nickel chrome resistance wire centred in metal tube by compressed magnesium oxide. Helical fins are tightly wound around the tubular heating element.

Heater batteries when ordered comes with stage contactors, primary auto reset thermal safety cut-out, secondary manual reset thermal safety cut-out and air flow switch. Power fuses / circuit breaker are provided for heaters with total ampere exceeding 48 amperes. For smaller heaters, power fuses can be provided if specified.

Following are the optional kW ratings for electric heater. Ratings other than those specified here can be supplied on request. Consult SKM for details

| AUMR  | CADX   | Heater kW | No. of Stages |
|-------|--------|-----------|---------------|
| 055G1 | 055AG1 | 4.5       | 1             |
| 070G1 | 070AG1 |           |               |
| 080G1 | 080AG1 | 9         |               |
| 090G1 | 090AG1 |           |               |
| 100G1 | 100AG1 |           |               |
| 120G1 | 120AG1 | 12        |               |
| 130G1 | 130AG1 | 15        |               |
| 150G1 | 150AG1 |           |               |
| 180G1 | 180AG1 | 18        | 2             |
| 200G1 | 200AG1 | 24        |               |
| 230G1 | 230AG1 |           |               |
| 260G1 | 260AG1 |           |               |

Table 1

**Pressure relief valve (PRV)**

To protect the unit from being over - pressurized.

**Double Skin Insulation\* (DSI)**

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

**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)**

**Western make scroll compressor (WMSC)**

Western make scroll compressor.

**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.

**Advanced Micro processor control system (AMCS)**

An advanced microprocessor based controller can be provided for the units as option, in case required. This controller will be with built-in display keypad and has many features.

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.) **(This is not required with CHTS option).**

- **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).

**Circuit Breaker for Motors\*\*\* (CBM)**

For those electrical specification which requires additional short circuit and overload protection for the fan motors.(Applicable for both AUMR-G1 & CADX-AG1)

**Voltage Monitoring Module as per DEWA (DVM)**

Under voltage relay as per DEWA regulations. This option is available for Dubai, UAE only. **(VMM option is not required if this option is opted)**

**Up Size Evaporator Motor\*\*\* (USM)**

Unit with one up size evaporator motor.

**Fire Alarm Interlock (VFC-F)**

To provide provision for fire alarm interlock.

**Marine Paint (MP)**

To provide increased corrosion resistance for coastal environments and offshore location.

**Options for Field Installation****Anti-vibration mounts (CAVM)**

Recommended for roof mounted units or other location in the vicinity of occupied spaces. where noise may be objectionable.

**Low voltage thermostats (CHTS)**

For wall mounting and for cooling /heating operation with 1 or 2 stages as per model. Applicable for units with one or two compressor. **(Not required with AMCS option).**

- **DTS-TH – Duct Temperature Sensor for 24V Thermostat \*\***

(In order to control the unit based on return/supply air duct temperature.) **(This is not required with AMCS options)**

**Pump Down Facility with Solenoid valve (PDS)**

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.

**Note:**

1. Options without (\*) marking is applicable in AUMR-G1 units
2. Option marked with (\*) is applicable in CADX-AG1 units.
3. Whenever multiple options related to unit control are required, please consult SKM for the drawings, as the size of the control panel might change.

- \*\* DTS and BMSP options are only available along with AMCS Option .

- \*\*DTS-TH option is only available along with CHTS option.

-\*\*\* If CBM combined with USM option please consult SKM as component might changed.



## CONDENSING UNIT SPECIFICATIONS

| Condensing Unit                  | AUMR      | 055G1   | 070G1   | 080G1   | 090G1   | 100G1   | 120G1   |       |
|----------------------------------|-----------|---|---------|---------|---------|---------|---------|-------|
| Matched Air Handling Unit        | CADX      | 055AG1  | 070AG1  | 080AG1  | 090AG1  | 100AG1  | 120AG1  |       |
| Cooling Capacity (1)             | MBh       | 46.66   | 58.81   | 67.26   | 72.39   | 82.32   | 96.31   |       |
|                                  | kW        | 13.67   | 17.23   | 19.71   | 21.21   | 24.12   | 28.22   |       |
|                                  | EER       | 8.50  | 8.33    | 8.50    | 8.35    | 8.31    | 8.50    |       |
| Refrigerant Type                 |           | R410A   |         |         |         |         |         |       |
| Compressor                       | Type      | Hermetic Scroll   |         |         |         |         |         |       |
|                                  | Quantity  | 1   | 1       | 1       | 1       | 1       | 1       |       |
| Outdoor Coil                     | Type      | Hi-X tubes  |         |         |         |         |         |       |
|                                  | Quantity  | 1   | 1       | 1       | 1       | 1       | 1       |       |
|                                  | Face Area | ft <sup>2</sup>   | 13.50   | 13.50   | 20.00   | 20.00   | 24.00   | 24.00 |
|                                  |           | m <sup>2</sup>  | 1.25    | 1.25    | 1.86    | 1.86    | 2.23    | 2.23  |
| Outdoor Fan                      | Type      | Propeller Direct Drive  |         |         |         |         |         |       |
|                                  | Code/Qty. | 630 / 1   | 630 / 1 | 710 / 1 | 710 / 1 | 710 / 1 | 710 / 1 |       |
| Motor                            | Type      | Totally Enclosed Air Over, Class F insulation, 6-pole, IP-54/55 Protected |         |         |         |         |         |       |
| Connections (2)                  | Liquid    | in.   | 1/2     | 1/2     | 1/2     | 1/2     | 5/8     |       |
|                                  | Suction   | in.   | 7/8     | 7/8     | 7/8     | 1 1/8   | 1 1/8   |       |
| Refrigerant Operating Charge (3) | lbs       | 17.53   | 17.77   | 18.79   | 18.94   | 20.95   | 30.80   |       |
|                                  | kg        | 7.95  | 8.06    | 8.52    | 8.59    | 9.50    | 13.97   |       |
| Number of Refrigerant Circuits   |           | 1   | 1       | 1       | 1       | 1       | 1       |       |
| Approximate Operating Weight     | lbs       | 378   | 386     | 489     | 531     | 576     | 633     |       |
|                                  | kg        | 172   | 175     | 222     | 241     | 261     | 287     |       |

| Condensing Unit                  | AUMR      | 130G1   | 150G1     | 180G1     | 200G1     | 230G1     | 260G1     |    |
|----------------------------------|-----------|---|-----------|-----------|-----------|-----------|-----------|----|
| Matched Air Handling Unit        | CADX      | 130AG1  | 150AG1    | 180AG1    | 200AG1    | 230AG1    | 260AG1    |    |
| Cooling Capacity (1)             | MBh       | 105.96  | 121.13    | 142.13    | 164.24    | 189.75    | 218.84    |    |
|                                  | kW        | 31.05   | 35.49     | 41.64     | 48.12     | 55.60     | 64.12     |    |
|                                  | EER       | 8.32  | 8.36      | 8.20      | 8.13      | 8.30      | 8.10      |    |
| Refrigerant Type                 |           | R410A   |           |           |           |           |           |    |
| Compressor                       | Type      | Hermetic Scroll   |           |           |           |           |           |    |
|                                  | Quantity  | 2   | 2         | 2         | 2         | 2         | 2         |    |
| Outdoor Coil                     | Type      | Hi-X tubes  |           |           |           |           |           |    |
|                                  | Quantity  | 2   | 2         | 2         | 2         | 2         | 2         |    |
|                                  | Face Area | ft <sup>2</sup>   | 26.25     | 40        | 40        | 48        | 48        | 48 |
|                                  |           | m <sup>2</sup>  |           |           |           |           |           |    |
| Outdoor Fan                      | Type      | Propeller Direct Drive  |           |           |           |           |           |    |
|                                  | Code/Qty. | 630 / 2   | 710 / 2   | 710 / 2   | 710 / 2   | 710 / 2   | 800 / 2   |    |
| Motor                            | Type      | Totally Enclosed Air Over, Class F insulation, 6-pole, IP-54/55 Protected |           |           |           |           |           |    |
| Connections (2)                  | Liquid    | in.   | 1/2 x 2   | 1/2 x 2   | 1/2 x 2   | 1/2 x 2   | 5/8 x 2   |    |
|                                  | Suction   | in.   | 7/8 x 2   | 7/8 x 2   | 1 1/8 x 2 | 1 1/8 x 2 | 1 1/8 x 2 |    |
| Refrigerant Operating Charge (3) | lbs       | 17.18 x 2   | 17.58 x 2 | 18.43 x 2 | 20.5 x 2  | 29.35 x 2 | 29.35 x 2 |    |
|                                  | kg        | 7.79 x 2  | 7.97 x 2  | 8.36 x 2  | 9.3 x 2   | 13.31 x 2 | 13.31 x 2 |    |
| Number of Refrigerant Circuits   |           | 2   | 2         | 2         | 2         | 2         | 2         |    |
| Approximate Operating Weight     | lbs       | 716   | 904       | 988       | 1064      | 1174      | 1226      |    |
|                                  | kg        | 324   | 410       | 448       | 482       | 532       | 554       |    |

### Notes:

Table 2

- (1) Evaporator entering air conditions of 84.2°/66.2°F (29°/19°C) dry bulb/wet bulb and condenser entering air temperature of 114.8°F (46°C) dry bulb.(Net Capacity)
- (2) Connections are based on 25 ft maximum linear distance between the outdoor & indoor unit and 66 ft maximum lift.
- (3) Refrigerant operating charge is for combined condensing unit with the matching air handling unit and 25 ft (7.6m) of interconnecting refrigerant lines.

**AIR HANDLING UNIT SPECIFICATIONS**

| Air Handling Unit            | CADX        | 055AG1             | 070AG1   | 080AG1   | 090AG1   | 100AG1   | 120AG1  |         |
|------------------------------|-------------|--------------------|--|----------|----------|----------|---------|---------|
| Matched Condensing Unit      | AUMR        | 055G1              | 070G1  | 080G1    | 090G1    | 100G1    | 120G1   |         |
| Cooling Capacity (1)         | MBh         | 46.66              | 58.81  | 67.26    | 72.39    | 82.32    | 96.31   |         |
|                              | kW          | 13.67              | 17.23  | 19.71    | 21.21    | 24.12    | 28.22   |         |
|                              | EER         | 8.50               | 8.33   | 8.50     | 8.35     | 8.31     | 8.50    |         |
| Indoor Coil                  | Type        |                    | Hi-X tubes   |          |          |          |         |         |
|                              | Face Area   | ft <sup>2</sup>    | 5.80   | 6.30     | 8.00     | 8.00     | 8.00    | 10.40   |
|                              |             | m <sup>2</sup>     | 0.54   | 0.59     | 0.74     | 0.74     | 0.74    | 0.97    |
| Refrigerant Controls         |             | Expansion Valve(s) |  |          |          |          |         |         |
| Connections (2)              | Liquid      | in.                | 1/2  | 1/2      | 1/2      | 1/2      | 5/8     |         |
|                              | Suction     | in.                | 7/8  | 7/8      | 7/8      | 1 1/8    | 1 1/8   |         |
| Indoor Fan                   | Type        |                    | Centrifugal double inlet double width belt drive                       |          |          |          |         |         |
|                              | Code        |                    | 10/10  | 12/12    | 12/12    | 12/12    | 12/12   | 15/15   |
|                              | Airflow     | cfm                | 1700   | 1900     | 2400     | 2500     | 2900    | 3500    |
| l/s                          |             | 802                | 897  | 1133     | 1180     | 1369     | 1652    |         |
| Motor                        | Type        | -                  | Totally Enclosed Fan Cooled, Class F insulation, 4-pole IP55 Protected |          |          |          |         |         |
|                              | Size / Qty. | kW                 | 0.55 / 1   | 0.55 / 1 | 0.55 / 1 | 0.75 / 1 | 1.1 / 1 | 1.1 / 1 |
| Operating Weight Approximate | lbs         | 236                | 313  | 324      | 324      | 324      | 446     |         |
|                              | kg          | 107                | 142  | 147      | 147      | 147      | 202     |         |

| Air Handling Unit            | CADX        | 130AG1             | 150AG1   | 180AG1  | 200AG1    | 230AG1    | 260AG1    |         |
|------------------------------|-------------|--------------------|--|---------|-----------|-----------|-----------|---------|
| Matched Condensing Unit      | AUMR        | 130G1              | 150G1  | 180G1   | 200G1     | 230G1     | 260G1     |         |
| Cooling Capacity (1)         | MBh         | 105.96             | 121.13   | 142.13  | 164.24    | 189.75    | 218.84    |         |
|                              | kW          | 31.05              | 35.49  | 41.64   | 48.12     | 55.60     | 64.12     |         |
|                              | EER         | 8.32               | 8.36   | 8.20    | 8.13      | 8.30      | 8.10      |         |
| Indoor Coil                  | Type        |                    | Hi-X tubes   |         |           |           |           |         |
|                              | Face Area   | ft <sup>2</sup>    | 12.50  | 14.20   | 16.50     | 16.50     | 19.40     | 19.40   |
|                              |             | m <sup>2</sup>     | 1.16   | 1.32    | 1.53      | 1.53      | 1.80      | 1.80    |
| Refrigerant Controls         |             | Expansion Valve(s) |  |         |           |           |           |         |
| Connections (2)              | Liquid      | in.                | 1/2 x 2  | 1/2 x 2 | 1/2 x 2   | 1/2 x 2   | 5/8 x 2   |         |
|                              | Suction     | in.                | 7/8 x 2  | 7/8 x 2 | 1 1/8 x 2 | 1 1/8 x 2 | 1 1/8 x 2 |         |
| Indoor Fan                   | Type        |                    | Centrifugal double inlet double width belt drive                       |         |           |           |           |         |
|                              | Code        |                    | 15/15  | 12/12R2 | 12/12R2   | 12/12R2   | 15/15R2   | 15/15R2 |
|                              | Airflow     | cfm                | 4000   | 4500    | 5200      | 6200      | 7200      | 8000    |
| l/s                          |             | 1888               | 2124   | 2454    | 2926      | 3398      | 3775      |         |
| Motor                        | Type        | -                  | Totally Enclosed Fan Cooled, Class F insulation, 4-pole IP55 Protected |         |           |           |           |         |
|                              | Size / Qty. | kW                 | 1.1 / 1  | 1.1 / 1 | 1.5 / 1   | 2.2 / 1   | 2.2 / 1   | 3 / 1   |
| Operating Weight Approximate | lbs         | 476                | 502  | 572     | 572       | 659       | 659       |         |
|                              | kg          | 216                | 227  | 259     | 259       | 299       | 299       |         |

Table 3

**Notes:**

- (1) Evaporator entering air conditions of 84.2°/66.2°F (29°/19°C) dry bulb/wet bulb and condenser entering air temperature of 114.8°F (46°C) dry bulb.(Net Capacity)
- (2) Connections are based on 25 ft maximum linear distance between the outdoor & indoor unit and 66 ft maximum lift.









## Fan Performance

| Model<br>AUMR + CADX | 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   |
| 055G1 + 055G1        | 1600        | 755  | 0.28                     | 70  | 653                                   | 0.19 | 756      | 0.24 | 805      | 0.26 | 852      | 0.29 | 945      | 0.34 | 1035   | 0.4  | 1125     | 0.47 |
|                      | 1700        | 802  | 0.31                     | 78  | 678                                   | 0.22 | 777      | 0.27 | 823      | 0.3  | 868      | 0.32 | 957      | 0.38 | 1043   | 0.44 | 1128     | 0.51 |
|                      | 2600        | 1227 | 0.73                     | 183 | 944                                   | 0.68 | 1015     | 0.76 | 1049     | 0.8  | 1083     | 0.84 | 1147     | 0.92 | 1209   | 1    | 1270     | 1.08 |
| 070G1 + 070G1        | 1800        | 849  | 0.3                      | 75  | -                                     | -    | 673      | 0.26 | 718      | 0.29 | 763      | 0.32 | 849      | 0.39 | 932    | 0.47 | -        | -    |
|                      | 1900        | 897  | 0.33                     | 83  | -                                     | -    | 688      | 0.28 | 732      | 0.32 | 775      | 0.35 | 857      | 0.42 | 937    | 0.5  | -        | -    |
|                      | 2800        | 1321 | 0.73                     | 183 | 800                                   | 0.62 | 869      | 0.7  | 902      | 0.75 | 934      | 0.79 | 997      | 0.88 | 1057   | 0.98 | 1115     | 1.07 |
| 080G1 + 080G1        | 2200        | 1038 | 0.28                     | 70  | -                                     | -    | 674      | 0.33 | 716      | 0.37 | 757      | 0.4  | 834      | 0.48 | 908    | 0.56 | 979      | 0.64 |
|                      | 2400        | 1133 | 0.33                     | 81  | 616                                   | 0.33 | 702      | 0.4  | 742      | 0.44 | 780      | 0.48 | 854      | 0.56 | 924    | 0.64 | 991      | 0.72 |
|                      | 3600        | 1699 | 0.74                     | 186 | 851                                   | 0.97 | 913      | 1.09 | 942      | 1.14 | 972      | 1.2  | 1028     | 1.31 | 1082   | 1.42 | 1135     | 1.54 |
| 090G1 + 090G1        | 2200        | 1038 | 0.28                     | 70  | -                                     | -    | 674      | 0.33 | 716      | 0.37 | 757      | 0.4  | 834      | 0.48 | 908    | 0.56 | 979      | 0.64 |
|                      | 2500        | 1180 | 0.35                     | 88  | 634                                   | 0.36 | 717      | 0.44 | 756      | 0.48 | 793      | 0.52 | 865      | 0.6  | 933    | 0.68 | 999      | 0.77 |
|                      | 3600        | 1699 | 0.74                     | 186 | 851                                   | 0.97 | 913      | 1.09 | 942      | 1.14 | 972      | 1.2  | 1028     | 1.31 | 1082   | 1.42 | 1135     | 1.54 |
| 100G1 + 100G1        | 2200        | 1038 | 0.28                     | 70  | -                                     | -    | 674      | 0.33 | 716      | 0.37 | 757      | 0.4  | 834      | 0.48 | 908    | 0.56 | 979      | 0.64 |
|                      | 2900        | 1369 | 0.47                     | 118 | 708                                   | 0.54 | 782      | 0.63 | 818      | 0.67 | 852      | 0.72 | 917      | 0.81 | 980    | 0.9  | 1040     | 0.99 |
|                      | 3600        | 1699 | 0.74                     | 186 | 851                                   | 0.97 | 913      | 1.09 | 942      | 1.14 | 972      | 1.2  | 1028     | 1.31 | 1082   | 1.42 | 1135     | 1.54 |
| 120G1 + 120G1        | 2900        | 1369 | 0.29                     | 71  | 482                                   | 0.31 | 559      | 0.4  | 595      | 0.45 | 630      | 0.5  | 696      | 0.6  | 760    | 0.72 | 822      | 0.84 |
|                      | 3500        | 1652 | 0.4                      | 100 | 545                                   | 0.5  | 613      | 0.6  | 645      | 0.66 | 676      | 0.71 | 736      | 0.83 | 792    | 0.95 | 846      | 1.08 |
|                      | 4600        | 2171 | 0.71                     | 178 | 680                                   | 1.04 | 735      | 1.18 | 762      | 1.24 | 787      | 1.31 | 837      | 1.45 | 884    | 1.6  | 930      | 1.75 |
| 130G1 + 130G1        | 3500        | 1652 | 0.29                     | 72  | 502                                   | 0.44 | 575      | 0.54 | 608      | 0.59 | 641      | 0.65 | 702      | 0.76 | 760    | 0.88 | 815      | 1    |
|                      | 4000        | 1888 | 0.37                     | 91  | 550                                   | 0.62 | 616      | 0.73 | 647      | 0.79 | 677      | 0.85 | 734      | 0.97 | 788    | 1.1  | 839      | 1.23 |
|                      | 5300        | 2501 | 0.65                     | 163 | 691                                   | 1.33 | 744      | 1.48 | 769      | 1.55 | 794      | 1.63 | 842      | 1.78 | 887    | 1.94 | 931      | 2.1  |
| 150G1 + 150G1        | 4000        | 1888 | 0.29                     | 73  | 608                                   | 0.49 | 706      | 0.63 | 752      | 0.7  | 796      | 0.77 | 881      | 0.92 | 962    | 1.09 | 1042     | 1.28 |
|                      | 4500        | 2124 | 0.36                     | 90  | 655                                   | 0.66 | 746      | 0.81 | 788      | 0.88 | 829      | 0.96 | 908      | 1.12 | 983    | 1.3  | 1056     | 1.48 |
|                      | 6300        | 2973 | 0.72                     | 180 | 855                                   | 1.61 | 925      | 1.83 | 958      | 1.93 | 991      | 2.04 | 1053     | 2.25 | 1113   | 2.46 | 1172     | 2.68 |
| 180G1 + 180G1        | 4600        | 2171 | 0.29                     | 71  | 621                                   | 0.62 | 714      | 0.78 | 758      | 0.85 | 799      | 0.93 | 879      | 1.09 | 954    | 1.26 | 1027     | 1.44 |
|                      | 5200        | 2454 | 0.36                     | 88  | 673                                   | 0.84 | 759      | 1.02 | 799      | 1.1  | 838      | 1.19 | 912      | 1.37 | 983    | 1.55 | 1050     | 1.74 |
|                      | 7400        | 3492 | 0.73                     | 183 | 897                                   | 2.19 | 961      | 2.44 | 993      | 2.57 | 1023     | 2.69 | 1082     | 2.94 | 1138   | 3.19 | 1193     | 3.43 |
| 200G1 + 200G1        | 4600        | 2171 | 0.29                     | 71  | 621                                   | 0.62 | 714      | 0.78 | 758      | 0.85 | 799      | 0.93 | 879      | 1.09 | 954    | 1.26 | 1027     | 1.44 |
|                      | 6200        | 2926 | 0.5                      | 126 | 771                                   | 1.34 | 846      | 1.55 | 881      | 1.65 | 916      | 1.76 | 982      | 1.97 | 1046   | 2.17 | 1106     | 2.39 |
|                      | 7400        | 3492 | 0.73                     | 183 | 897                                   | 2.19 | 961      | 2.44 | 993      | 2.57 | 1023     | 2.69 | 1082     | 2.94 | 1138   | 3.19 | 1193     | 3.43 |
| 230G1 + 230G1        | 5400        | 2548 | 0.29                     | 71  | 500                                   | 0.6  | 584      | 0.79 | 623      | 0.89 | 661      | 0.99 | 733      | 1.21 | 803    | 1.46 | 872      | 1.74 |
|                      | 7200        | 3398 | 0.5                      | 123 | 609                                   | 1.23 | 678      | 1.46 | 710      | 1.58 | 741      | 1.71 | 801      | 1.96 | 858    | 2.23 | 914      | 2.52 |
|                      | 8700        | 4106 | 0.74                     | 184 | 713                                   | 2.06 | 772      | 2.34 | 800      | 2.48 | 827      | 2.62 | 880      | 2.92 | 931    | 3.22 | 979      | 3.54 |
| 260G1 + 260G1        | 5400        | 2548 | 0.29                     | 71  | 500                                   | 0.6  | 584      | 0.79 | 623      | 0.89 | 661      | 0.99 | 733      | 1.21 | 803    | 1.46 | 872      | 1.74 |
|                      | 8000        | 3775 | 0.62                     | 154 | 664                                   | 1.64 | 727      | 1.89 | 757      | 2.02 | 786      | 2.16 | 841      | 2.43 | 895    | 2.72 | 947      | 3.02 |
|                      | 8700        | 4106 | 0.74                     | 184 | 713                                   | 2.06 | 772      | 2.34 | 800      | 2.48 | 827      | 2.62 | 880      | 2.92 | 931    | 3.22 | 979      | 3.54 |

Table 6

**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" flat filter.

## ELECTRICAL DATA

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

| Model<br>AUMR | Unit Characteristic |     |     | Compressor |     |     | Condenser Fan Motor |     |      | Model<br>CADX | Evaporator Fan Motor |      |
|---------------|---------------------|-----|-----|------------|-----|-----|---------------------|-----|------|---------------|----------------------|------|
|               | MFA                 | MCA | ICF | QTY        | RLA | LRA | QTY                 | FLA | LRA  |               | FLA                  | LRA  |
| 055G1         | 32                  | 17  | 79  | 1          | 11  | 74  | 1                   | 1.2 | 3.6  | 055AG1        | 1.2                  | 7.4  |
| 070G1         | 40                  | 20  | 105 | 1          | 14  | 100 | 1                   | 1.2 | 3.6  | 070AG1        | 1.2                  | 7.4  |
| 080G1         | 40                  | 20  | 106 | 1          | 14  | 101 | 1                   | 1.2 | 3.6  | 080AG1        | 1.2                  | 7.4  |
| 090G1         | 40                  | 23  | 100 | 1          | 16  | 95  | 1                   | 1.2 | 3.6  | 090AG1        | 1.7                  | 10.2 |
| 100G1         | 50                  | 28  | 117 | 1          | 19  | 111 | 1                   | 1.2 | 3.6  | 100AG1        | 2.4                  | 16.2 |
| 120G1         | 50                  | 29  | 124 | 1          | 20  | 118 | 1                   | 1.2 | 3.6  | 120AG1        | 2.4                  | 16.2 |
| 130G1         | 50                  | 32  | 93  | 2          | 12  | 74  | 2                   | 1.2 | 3.6  | 130AG1        | 2.4                  | 16.2 |
| 150G1         | 50                  | 37  | 121 | 2          | 14  | 100 | 2                   | 1.2 | 3.6  | 150AG1        | 2.4                  | 16.2 |
| 180G1         | 63                  | 42  | 119 | 2          | 16  | 95  | 2                   | 1.2 | 3.6  | 180AG1        | 3.3                  | 25.0 |
| 200G1         | 80                  | 50  | 139 | 2          | 19  | 111 | 2                   | 1.2 | 3.6  | 200AG1        | 4.5                  | 32.4 |
| 230G1         | 80                  | 52  | 147 | 2          | 20  | 118 | 2                   | 1.2 | 3.6  | 230AG1        | 4.5                  | 32.4 |
| 260G1         | 100                 | 61  | 160 | 2          | 21  | 118 | 2                   | 3.3 | 11.0 | 260AG1        | 6.2                  | 44.6 |

Table 7

## Legend

**MFA** Maximum Fuse Amps (for fuse 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

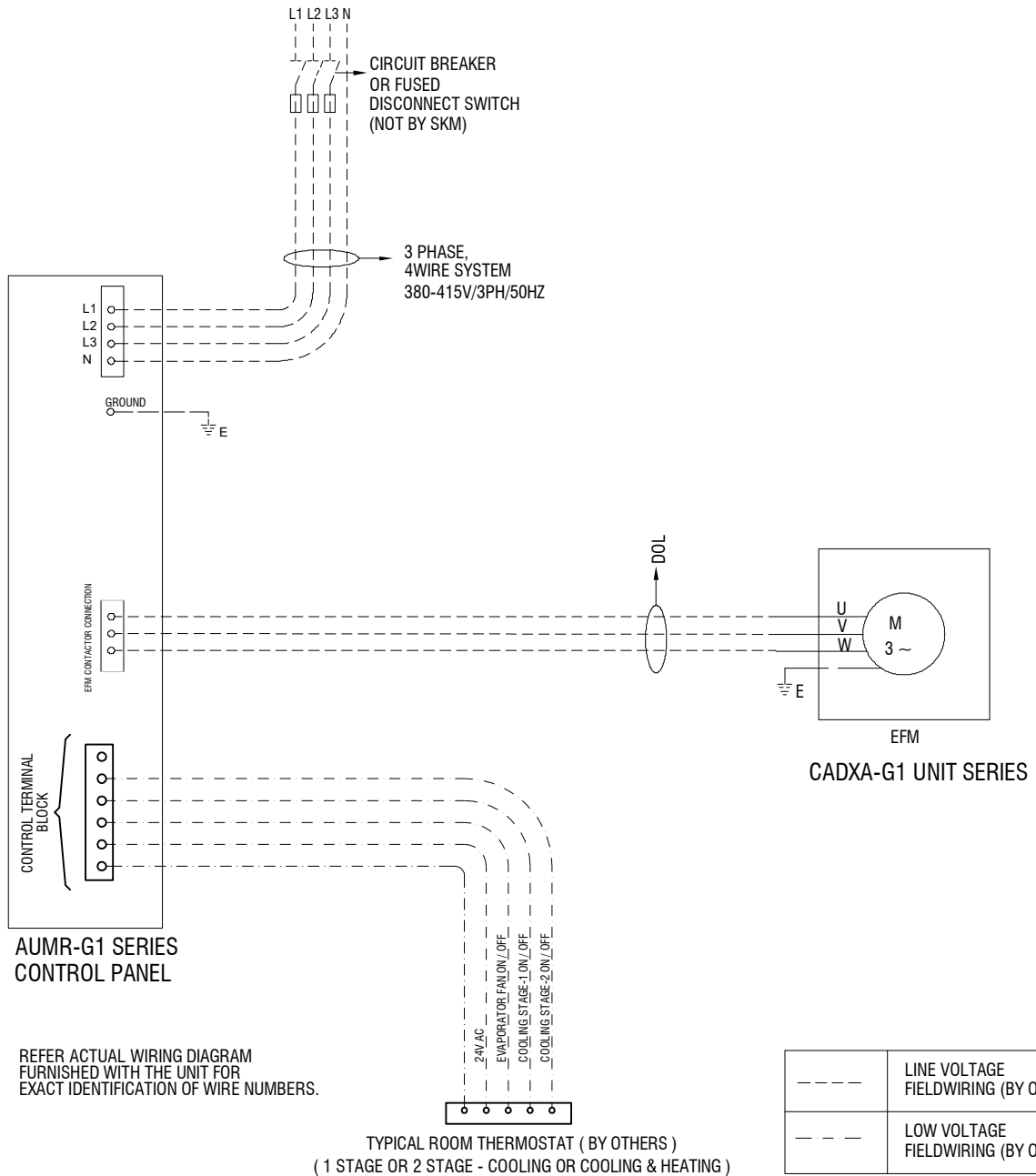


## Field Connections

SKM **AUMR-G1 + CADX-AG1** series split units require at most field supplied and field installed fused disconnect switches or circuit breakers for power & control and a low/voltage temperature controller (room thermostat) as shown in field wiring diagram.

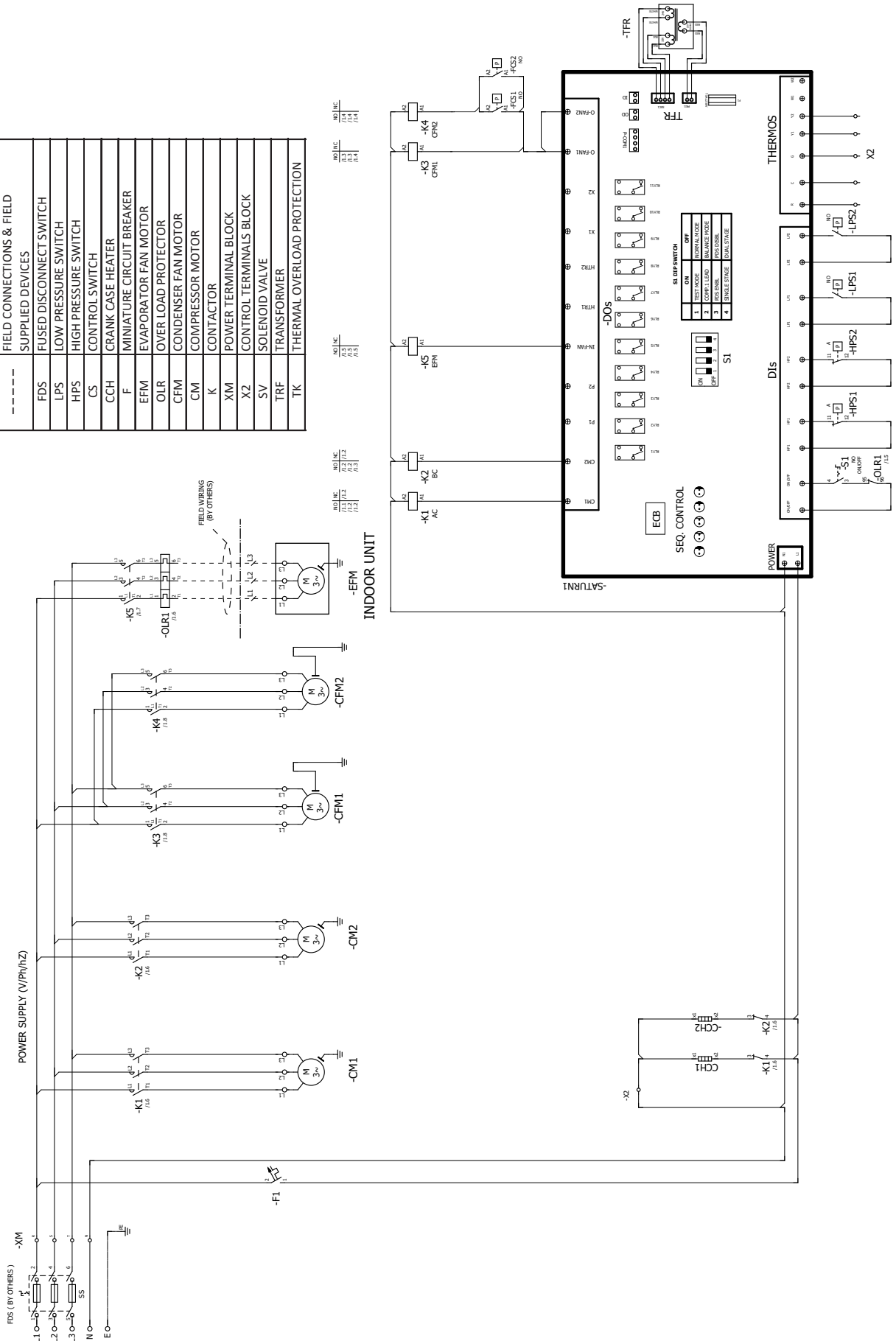
Each Split unit is supplied with electrical wiring diagrams placed inside the control panel of the unit.

## Field Wiring Requirement Schematic



## Typical Wiring Diagram (Outdoor Unit)

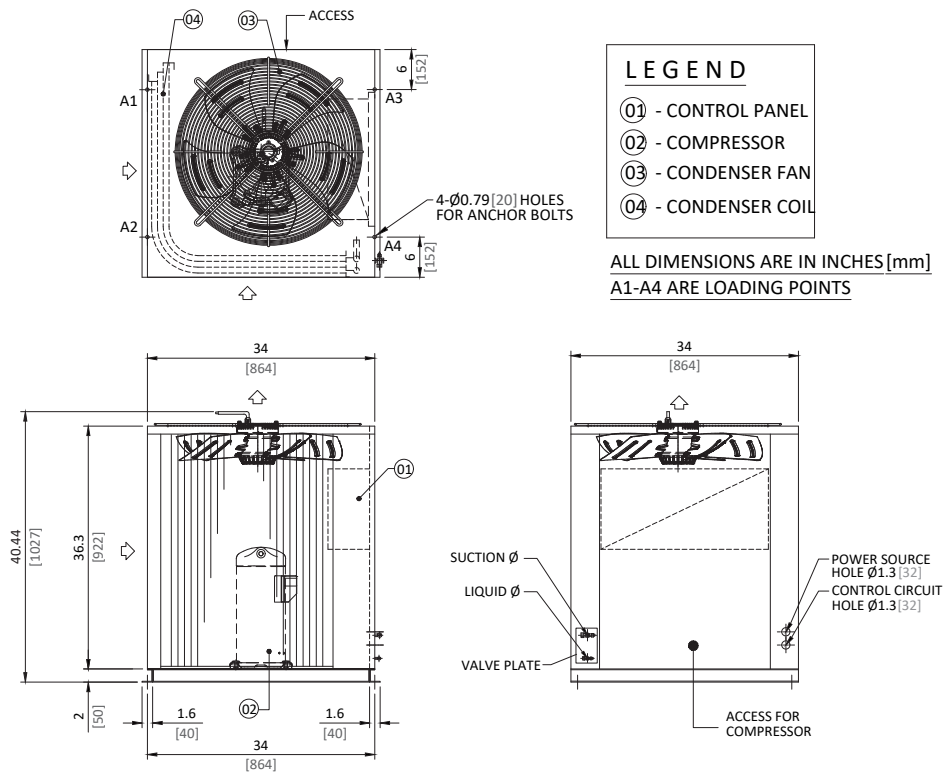
| LEGEND |  |
|--------|--|
| ---    | FIELD CONNECTIONS & FIELD SUPPLIED DEVICES |
| FDS    | FUSED DISCONNECT SWITCH                    |
| LPS    | LOW PRESSURE SWITCH                        |
| HPS    | HIGH PRESSURE SWITCH                       |
| CS     | CONTROL SWITCH                             |
| CCH    | CRANK CASE HEATER                          |
| F      | MINIATURE CIRCUIT BREAKER                  |
| EFM    | EVAPORATOR FAN MOTOR                       |
| OLR    | OVER LOAD PROTECTOR                        |
| CFM    | CONDENSER FAN MOTOR                        |
| CM     | COMPRESSOR MOTOR                           |
| K      | CONTACTOR                                  |
| XM     | POWER TERMINAL BLOCK                       |
| X2     | CONTROL TERMINALS BLOCK                    |
| SV     | SOLENOID VALVE                             |
| TRF    | TRANSFORMER                                |
| TK     | THERMAL OVERLOAD PROTECTION                |



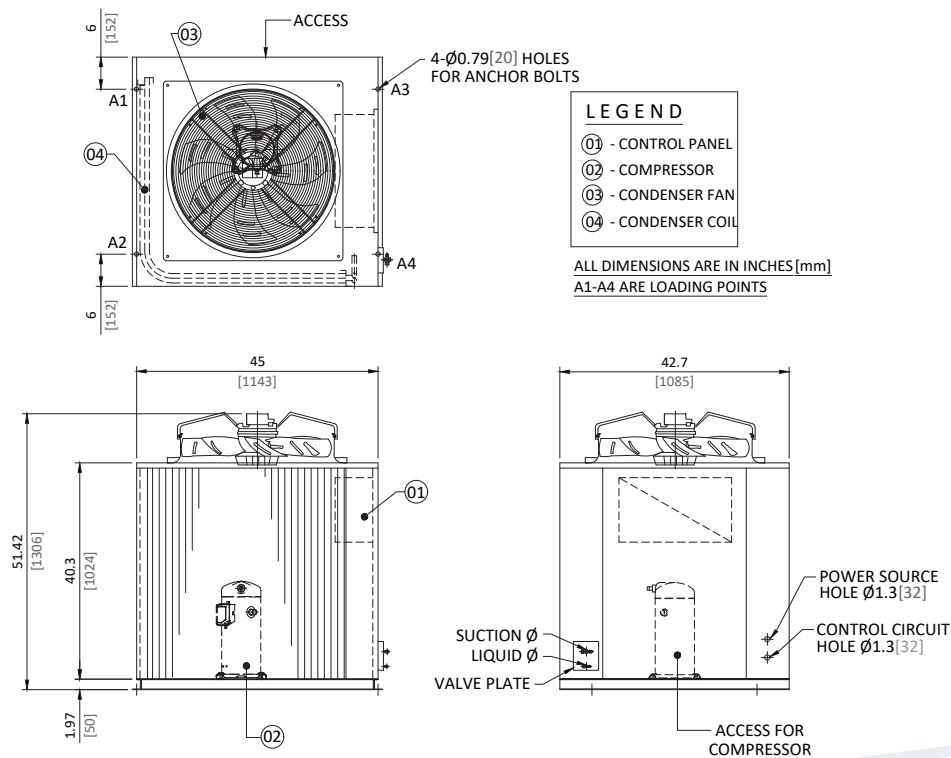


## Condensing Unit Dimensional Data

Models: AUMR- 055G1 & 070G1

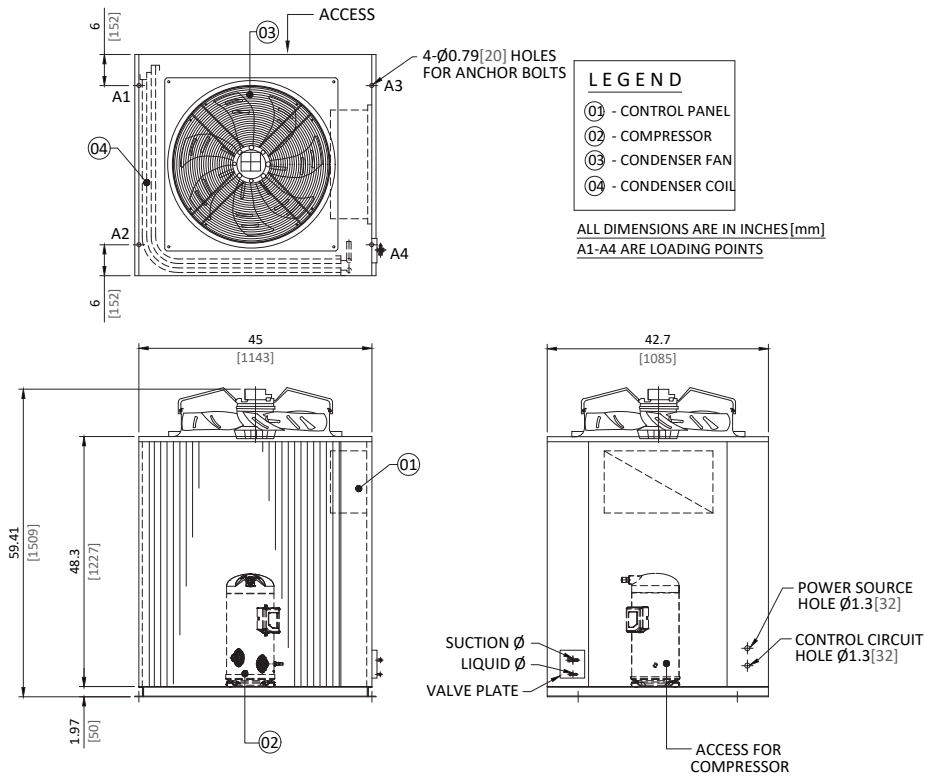


Models: AUMR- 080G1 & 090G1

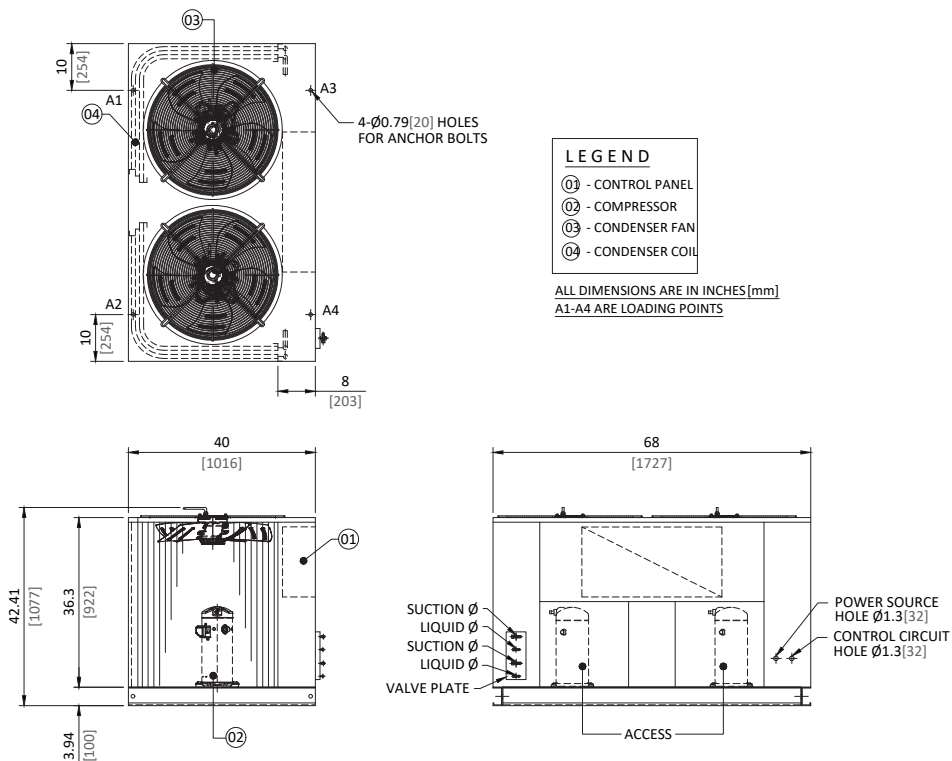


## Condensing Unit Dimensional Data

Models: AUMR- 100G1 & 120G1



Models: AUMR- 130G1

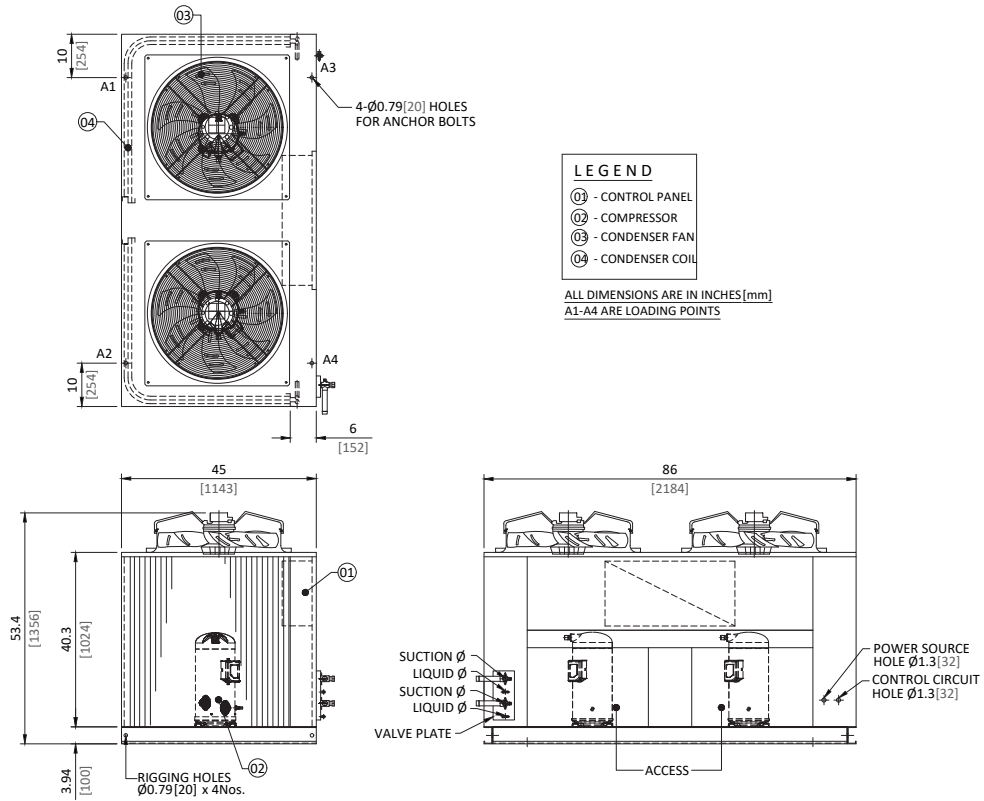




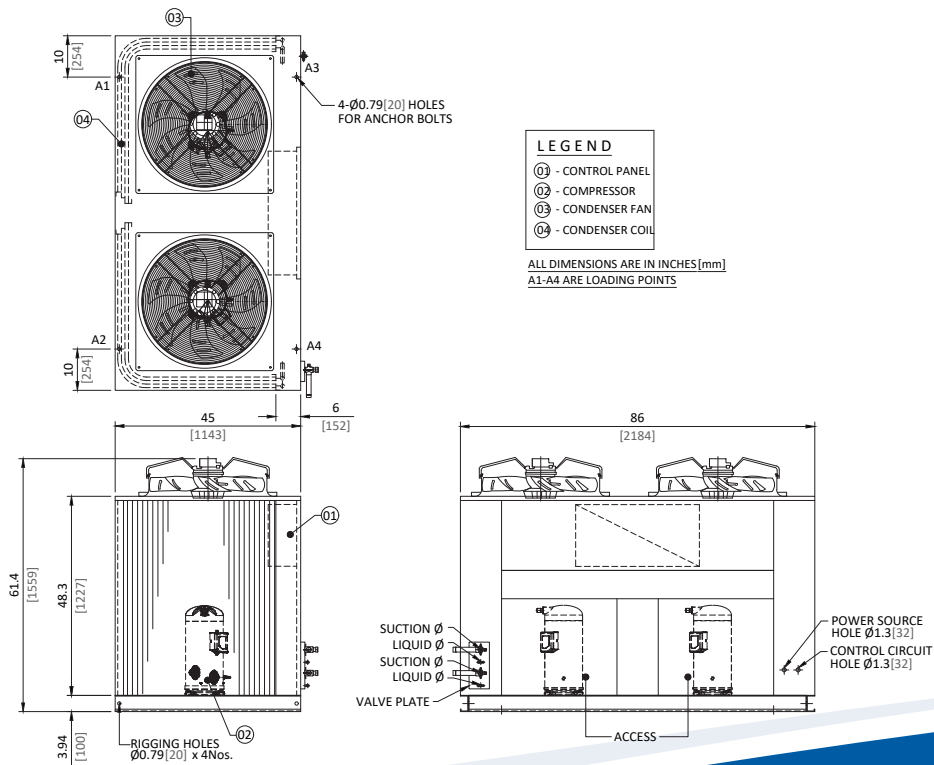


## Condensing Unit Dimensional Data

Models: AUMR- 150G1 & 180G1

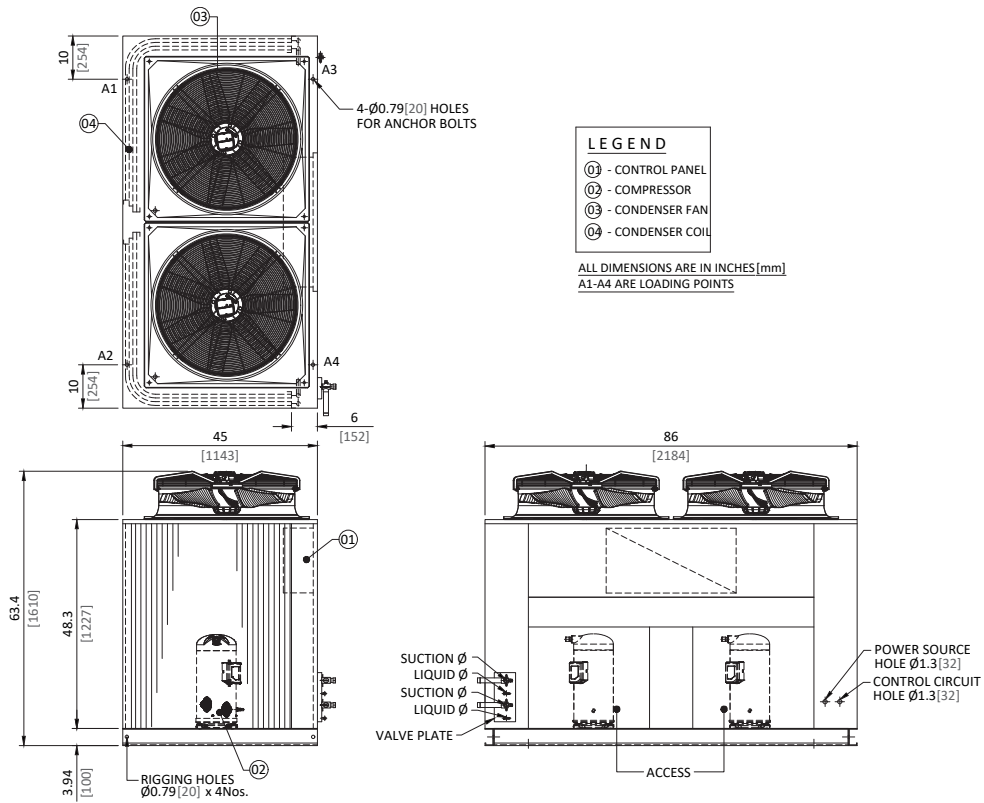


Models: AUMR- 200G1 & 230G1



## Condensing Unit Dimensional Data

Models: AUMR- 260G1





# Air Handling Unit Dimensional Data

Models: CADX-055AG1 to 120AG1

**LEGEND**  
 (01)- EVAPORATOR FAN  
 (02)- EVAPORATOR FAN MOTOR  
 (03)- EVAPORATOR COIL  
 (04)- 1"THK. FLAT FILTER

| Model CADX | DIMENSIONS   |              |               |             |                |               |                |                |             |                |                |
|------------|--------------|--------------|---------------|-------------|----------------|---------------|----------------|----------------|-------------|----------------|----------------|
|            | L            | W            | H             | A           | B              | C             | D              | E              | F           | J              | G              |
| 055AG1     | 45<br>[1143] | 48<br>[1219] | 26.2<br>[665] | 25<br>[635] | 39.2<br>[995]  | 21.4<br>[544] | 17.48<br>[444] | 17.48<br>[444] | 2.7<br>[69] | 11.38<br>[289] | 13.03<br>[331] |
| 070AG1     | 45<br>[1143] | 55<br>[1381] | 25.2<br>[640] | 24<br>[610] | 47<br>[1194]   | 21.4<br>[544] | 19.72<br>[501] | 19.72<br>[501] | 2.2<br>[57] | 13.43<br>[341] | 15.55<br>[395] |
| 080AG1     |              |              |               |             |                |               |                |                |             |                |                |
| 090AG1     | 50<br>[1270] | 56<br>[1422] | 29.2<br>[741] | 27<br>[686] | 47<br>[1194]   | 23.3<br>[592] | 20.2<br>[514]  | 20.2<br>[514]  | 3.5<br>[89] | 13.43<br>[341] | 15.55<br>[395] |
| 100AG1     |              |              |               |             |                |               |                |                |             |                |                |
| *120AG1    | 60<br>[1524] | 60<br>[1524] | 31.2<br>[792] | 30<br>[762] | 50.5<br>[1283] | 26.8<br>[681] | 20.7<br>[526]  | 20.7<br>[526]  | 2.5<br>[63] | 15.91<br>[404] | 18.54<br>[471] |

\*USE DRAIN SIZE Ø1[25] FOR MODEL 120AG1

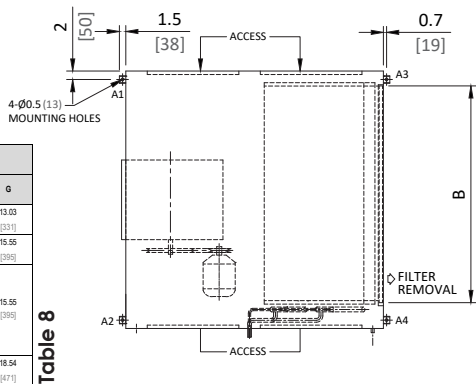
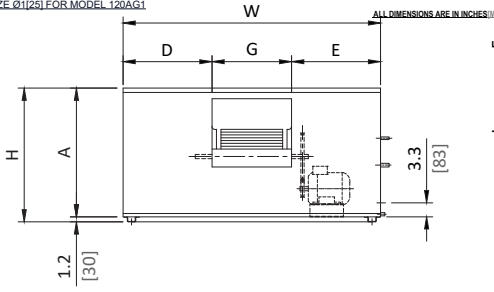
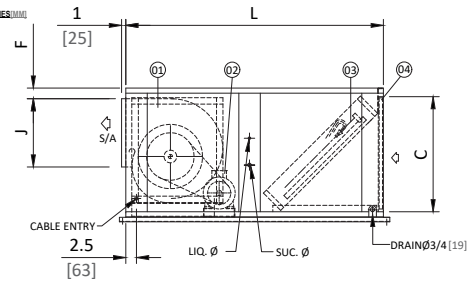


Table 8



# Models: CADX-130AG1 to 260AG1

| Model CADX | DIMENSIONS     |              |               |               |                |               |                |                |             |                |                |             |
|------------|----------------|--------------|---------------|---------------|----------------|---------------|----------------|----------------|-------------|----------------|----------------|-------------|
|            | L              | W            | H             | A             | B              | C             | D              | E              | F           | J              | G              | H1          |
| *130AG1    | 60<br>[1524]   | 70<br>[1778] | 31.2<br>[792] | 30<br>[762]   | 62.6<br>[1589] | 26.8<br>[681] | 25.7<br>[653]  | 25.7<br>[653]  | 2.5<br>[63] | 15.91<br>[404] | 18.54<br>[471] | 1.2<br>[30] |
| 150AG1     | 60<br>[1524]   | 70<br>[1778] | 33.2<br>[843] | 32<br>[813]   | 62.6<br>[1589] | 28.8<br>[732] | 13.2<br>[334]  | 28.8<br>[732]  | 9<br>[229]  | 13.43<br>[341] | 43.7<br>[1109] | 1.2<br>[30] |
| 180AG1     |                |              |               |               |                |               |                |                |             |                |                |             |
| 200AG1     | 60<br>[1524]   | 80<br>[2032] | 33.2<br>[843] | 32<br>[813]   | 69.9<br>[1775] | 28.8<br>[732] | 18.2<br>[461]  | 18.2<br>[461]  | 9<br>[229]  | 13.43<br>[341] | 43.7<br>[1109] | 1.2<br>[30] |
| 230AG1     |                |              |               |               |                |               |                |                |             |                |                |             |
| 260AG1     | 61.4<br>[1560] | 92<br>[2337] | 35.2<br>[895] | 33.5<br>[850] | 81.7<br>[2074] | 28.8<br>[732] | 19.86<br>[504] | 19.86<br>[504] | 6<br>[152]  | 15.91<br>[404] | 52.3<br>[1328] | 1.8<br>[45] |

ALL DIMENSIONS ARE IN INCHES [mm]

**LEGEND**  
 (01)- EVAPORATOR FAN  
 (02)- EVAPORATOR FAN MOTOR  
 (03)- EVAPORATOR COIL  
 (04)- 1"THK. FLAT FILTER

ALL DIMENSIONS ARE IN INCHES [mm]  
 A1-A4 ARE LOADING POINTS  
 \* MODEL 130AG1 WITH SINGLE BLOWER FAN

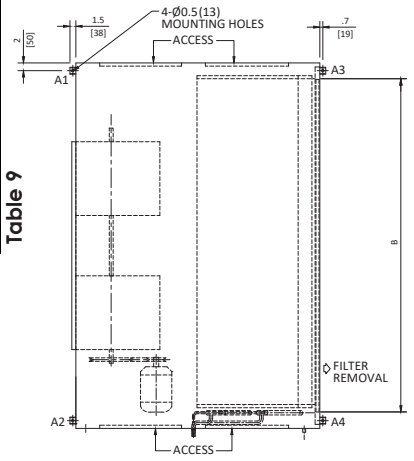
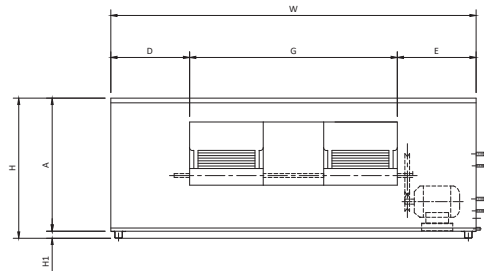
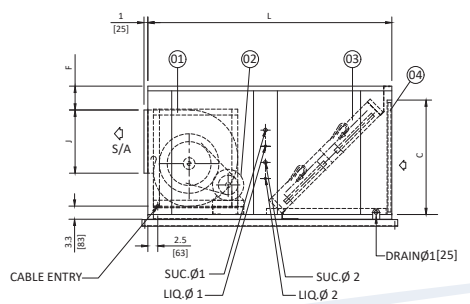


Table 9



**WEIGHTS & LOADING POINTS**

| MODEL<br>AUMR | LOAD AT EACH POINT Lbs (Kgs) |              |              |              | TOTAL<br>WEIGHT |
|---------------|------------------------------|--------------|--------------|--------------|-----------------|
|               | A1                           | A2           | A3           | A4           |                 |
| 055G1         | 83<br>[38]                   | 103<br>[47]  | 86<br>[39]   | 106<br>[48]  | 378<br>[172]    |
| 070G1         | 85<br>[38]                   | 105<br>[48]  | 88<br>[40]   | 108<br>[49]  | 386<br>[175]    |
| 080G1         | 111<br>[50]                  | 130<br>[59]  | 114<br>[52]  | 134<br>[61]  | 489<br>[222]    |
| 090G1         | 121<br>[55]                  | 141<br>[64]  | 125<br>[57]  | 144<br>[65]  | 531<br>[241]    |
| 100G1         | 133<br>[60]                  | 156<br>[71]  | 132<br>[60]  | 155<br>[70]  | 576<br>[261]    |
| 120G1         | 147<br>[67]                  | 183<br>[83]  | 133<br>[60]  | 170<br>[77]  | 633<br>[287]    |
| 130G1         | 173<br>[78]                  | 173<br>[78]  | 185<br>[84]  | 185<br>[84]  | 716<br>[324]    |
| 150G1         | 219<br>[99]                  | 219<br>[99]  | 233<br>[106] | 233<br>[106] | 904<br>[410]    |
| 180G1         | 236<br>[107]                 | 236<br>[107] | 258<br>[117] | 258<br>[117] | 988<br>[448]    |
| 200G1         | 258<br>[117]                 | 258<br>[117] | 274<br>[124] | 274<br>[124] | 1064<br>[482]   |
| 230G1         | 297<br>[135]                 | 297<br>[135] | 290<br>[131] | 290<br>[131] | 1174<br>[532]   |
| 260G1         | 310<br>[140]                 | 310<br>[140] | 303<br>[137] | 303<br>[137] | 1226<br>[554]   |

Table 10

| MODEL<br>CADX | LOAD AT EACH POINT Lbs (Kgs) |             |             |             | TOTAL<br>WEIGHT |
|---------------|------------------------------|-------------|-------------|-------------|-----------------|
|               | A1                           | A2          | A3          | A4          |                 |
| 055AG1        | 66<br>[30]                   | 62<br>[28]  | 57<br>[26]  | 51<br>[23]  | 236<br>[107]    |
| 070AG1        | 75<br>[34]                   | 85<br>[38]  | 74<br>[34]  | 79<br>[36]  | 313<br>[142]    |
| 080AG1        | 83<br>[38]                   | 86<br>[39]  | 78<br>[35]  | 77<br>[35]  | 324<br>[147]    |
| 090AG1        | 83<br>[38]                   | 86<br>[39]  | 78<br>[35]  | 77<br>[35]  | 324<br>[147]    |
| 100AG1        | 83<br>[38]                   | 86<br>[39]  | 78<br>[35]  | 77<br>[35]  | 324<br>[147]    |
| 120AG1        | 107<br>[48]                  | 116<br>[53] | 109<br>[49] | 114<br>[52] | 446<br>[202]    |
| 130AG1        | 122<br>[55]                  | 139<br>[63] | 108<br>[49] | 107<br>[49] | 476<br>[216]    |
| 150AG1        | 128<br>[58]                  | 135<br>[61] | 124<br>[56] | 115<br>[52] | 502<br>[227]    |
| 180AG1        | 140<br>[63]                  | 146<br>[66] | 148<br>[67] | 138<br>[63] | 572<br>[259]    |
| 200AG1        | 140<br>[63]                  | 146<br>[66] | 148<br>[67] | 138<br>[63] | 572<br>[259]    |
| 230AG1        | 163<br>[74]                  | 198<br>[90] | 143<br>[65] | 155<br>[70] | 659<br>[299]    |
| 260AG1        | 163<br>[74]                  | 198<br>[90] | 143<br>[65] | 155<br>[70] | 659<br>[299]    |

Table 11



## Recommended Suction and Liquid Line Sizes:

| Models |        | PIPE LENGTH - FEET (m) |         |           |         |           |         |           |         |           |         |           |         |           |         |           |         |
|--------|--------|------------------------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|
|        |        | 25                     |         | 7.6)      |         | 50 (15.2) |         |           |         | 75 (22.9) |         |           |         | 100       |         | 30.5)     |         |
|        |        | Circuit 1              |         | Circuit 2 |         | Circuit 1 |         | Circuit 2 |         | Circuit 1 |         | Circuit 2 |         | Circuit 1 |         | Circuit 2 |         |
| AUMR   | CADX   | Liquid                 | Suction | Liquid    | Suction | Liquid    | Suction | Liquid    | Suction | Liquid    | Suction | Liquid    | Suction | Liquid    | Suction | Liquid    | Suction |
| 055G1  | 055AG1 | 1/2                    | 7/8     | -         | -       | 1/2       | 7/8     | -         | -       | 1/2       | 7/8     | -         | -       | 1/2       | 1 1/8   | -         | -       |
| 070G1  | 070AG1 | 1/2                    | 7/8     | -         | -       | 1/2       | 1 1/8   | -         | -       | 1/2       | 1 1/8   | -         | -       | 1/2       | 1 1/8   | -         | -       |
| 080G1  | 080AG1 | 1/2                    | 7/8     | -         | -       | 1/2       | 1 1/8   | -         | -       | 1/2       | 1 1/8   | -         | -       | 5/8       | 1 1/8   | -         | -       |
| 090G1  | 090AG1 | 1/2                    | 1 1/8   | -         | -       | 1/2       | 1 1/8   | -         | -       | 5/8       | 1 1/8   | -         | -       | 5/8       | 1 3/8   | -         | -       |
| 100G1  | 100AG1 | 1/2                    | 1 1/8   | -         | -       | 5/8       | 1 1/8   | -         | -       | 5/8       | 1 1/8   | -         | -       | 5/8       | 1 3/8   | -         | -       |
| 120G1  | 120AG1 | 5/8                    | 1 1/8   | -         | -       | 5/8       | 1 1/8   | -         | -       | 5/8       | 1 3/8   | -         | -       | 5/8       | 1 3/8   | -         | -       |
| 130G1  | 130AG1 | 1/2                    | 7/8     | 1/2       | 7/8     | 1/2       | 1 1/8   | 1/2       | 1 1/8   | 1/2       | 1 1/8   | 1/2       | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 1/8   |
| 150G1  | 150AG1 | 1/2                    | 7/8     | 1/2       | 7/8     | 1/2       | 1 1/8   | 1/2       | 1 1/8   | 1/2       | 1 1/8   | 1/2       | 1 1/8   | 1/2       | 1 1/8   | 1/2       | 1 1/8   |
| 180G1  | 180AG1 | 1/2                    | 1 1/8   | 1/2       | 1 1/8   | 1/2       | 1 1/8   | 1/2       | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 3/8   | 5/8       | 1 3/8   |
| 200G1  | 200AG1 | 1/2                    | 1 1/8   | 1/2       | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 3/8   | 5/8       | 1 3/8   |
| 230G1  | 230AG1 | 5/8                    | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 3/8   | 5/8       | 1 3/8   | 5/8       | 1 3/8   | 5/8       | 1 3/8   |
| 260G1  | 260AG1 | 5/8                    | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 1/8   | 5/8       | 1 3/8   | 5/8       | 1 3/8   | 3/4       | 1 3/8   | 3/4       | 1 3/8   |



Table 12

### Notes :

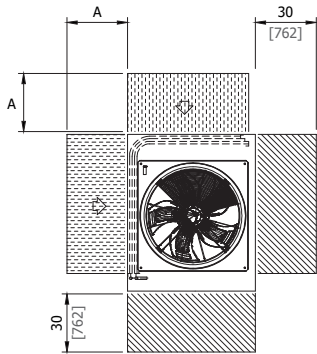
1. Pipe diameters are based on equivalent length of copper tubing sizes.
2. Pipe sizes are based on 2°F (1.1°C) or less temperature losses for liquid and suction line in equivalent pipe length.
3. If the condensing unit is below the evaporating unit, the maximum lift should not exceed to 66 feet.
4. Do not exceed 100 feet piping length without checking with SKM.
5. These sizes are for guidance only. For detailed proper piping, refer to recognized piping references like ASHRAE Guide and Data Book.

**The recommended or required suction and liquid line sizes do not necessarily correspond with the refrigerant connections available on the outdoor or indoor unit. Necessary transformation may be required and it's field performed.**

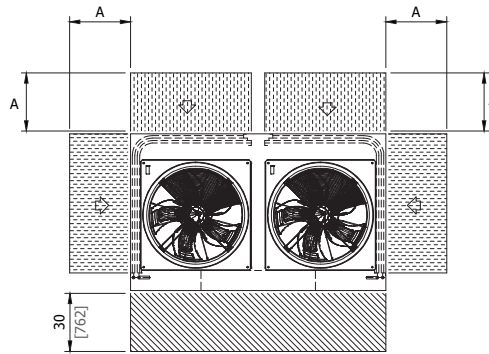
## Recommended Clearances

-  SPACING FOR SERVICE
-  SPACING FOR AIR FLOW

ALL DIMENSIONS ARE IN INCHES [mm]

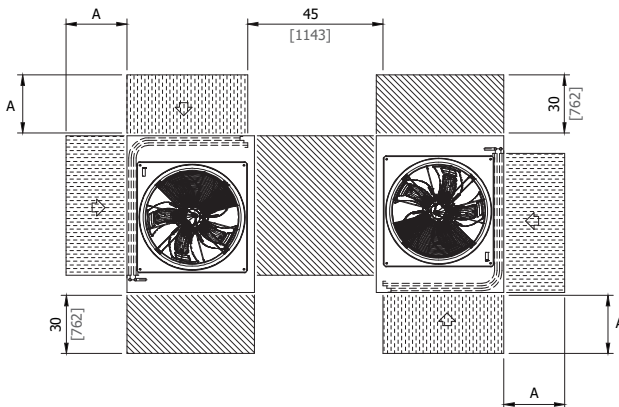


AUMR - 055G1 to 120G1



AUMR - 130G1 to 260G1

### Single Unit

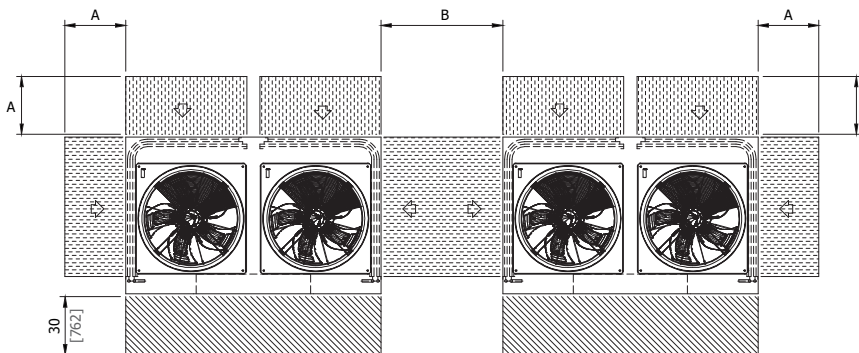


AUMR - 055G1 to 120G1

| MODEL AUMR    | A            | B            |
|---------------|--------------|--------------|
| 055G1 / 070G1 | 40<br>[1016] | -            |
| 080G1 / 090G1 | 44<br>[1118] |              |
| 100G1 & 120G1 | 52<br>[1321] |              |
| 130G1         | 40<br>[1016] | 64<br>[1626] |
| 150G1 & 180G1 | 44<br>[1118] | 72<br>[1829] |
| 200G1 - 260G1 | 52<br>[1321] | 88<br>[2235] |

Table 13

ALL DIMENSIONS ARE IN INCHES [MM]



AUMR - 130G1 to 260G1  
Multiple Unit

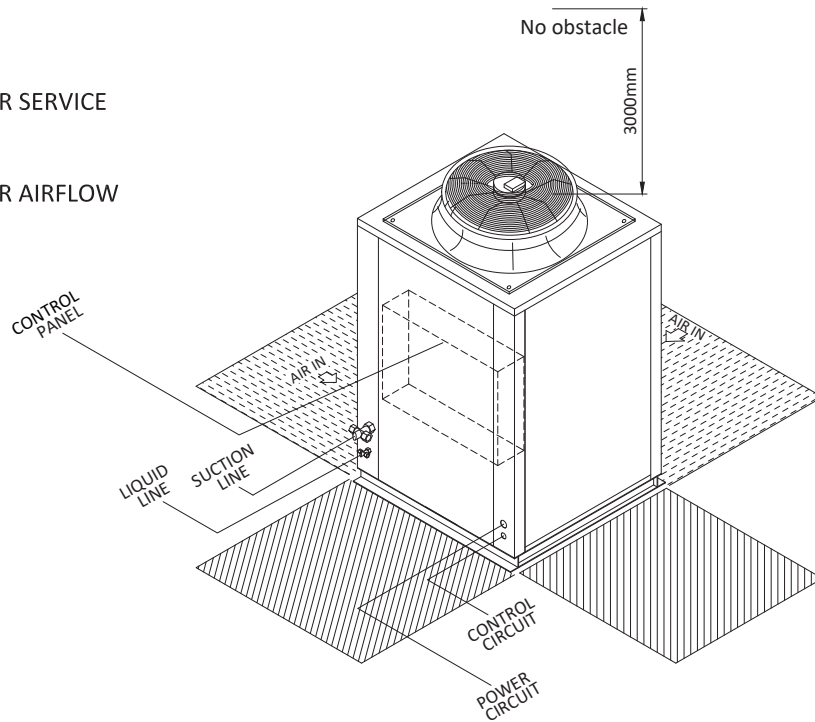


## Installation and Commissioning

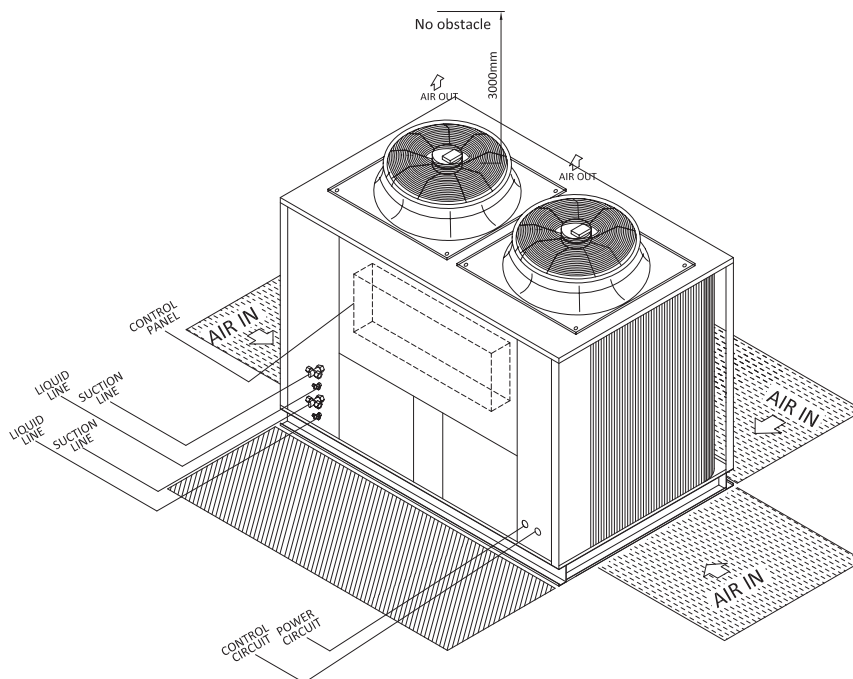
- Install the unit in such a location which is flat and strong enough to support its weight.
- All field wiring must comply with applicable local and national codes.
- Service spacing should be provided as shown in the figure. If any obstacles are around the unit, distributed air is short-circuited so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

 SPACING FOR SERVICE

 SPACING FOR AIRFLOW

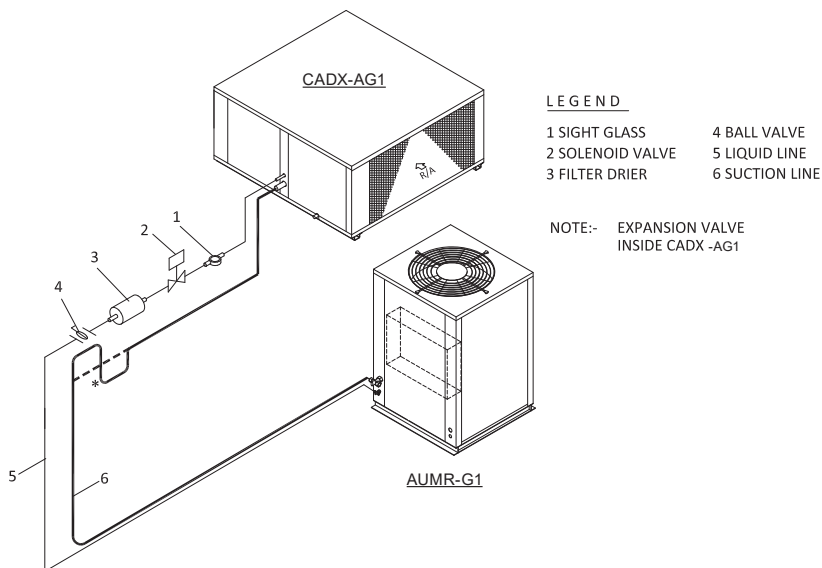
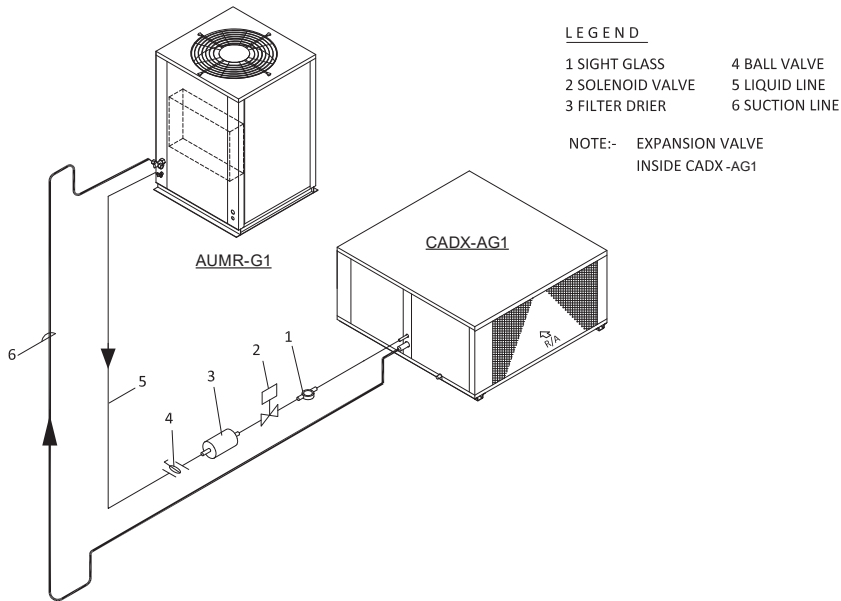


**AUMR - 055G1 to 120G1**



**AUMR - 130G1 to 260G1**

## Typical Refrigeration Piping



\* INVERTED TRAP WITHOUT PUMP DOWN CONTROL.  
DOTTED WITH PUMP DOWN CONTROL.

### Refrigerant Piping:

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

- To ensure proper refrigerant feed to the evaporator.
- To provide practical refrigerant line sizes without excessive pressure drop.
- To maintain uniform return of lubricating oil to the compressor.
- To prevent refrigerant from entering the compressor and causing compressor damage due to "slugging".





# GUIDE SPECIFICATIONS

## GENERAL

Split air conditioner shall be composed of a ceiling suspended air handling unit & floor mounted air cooled condensing unit.

## CONDENSING UNIT

The condensing unit shall be composed of compressor(s), coil(s) and condenser fan(s) and motor(s).

## COMPRESSOR

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

## CONDENSER COIL(S)

Condenser coils shall be air cooled with integral sub cooler, constructed of special inner grooved seamless copper tubes 3/8" OD mechanically expanded into corrugated aluminum fins. These coils shall be tested against leakage by air pressure of 715psig (4930 kPa) under water, cleaned & dehydrated at the factory.

## CONDENSER FAN(S) & MOTOR(S)

Condenser fans are propeller type with aluminum alloy blades and are directly driven by electric motors. Motors are Totally Enclosed Air Over (TEAO), six pole or four pole with Class F insulation and IP54/55 protection depending on models. Complete fan assembly is provided with fan guard.

## CONTROL PANEL

The outdoor unit panel shall be factory wired and confirm to IP-54 requirements. Control panel shall contain compressor and motor starting contactors, electronic control board for unit operation, compressor anti-recycle time delay, control on/off switch, control circuit breaker and power & control terminal blocks. High and Low pressure switches protection.

For Indoor unit, junction box shall be provided for evaporator fan motor starter; comprising with contactor, overload relay, power and control terminal blocks.

## CONDENSING UNIT CASING

Units casing shall be made of hot dip galvanized steel sheets (zinc coated) conforming to JIS-G3302 and ASTM A653 that 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 hours in 5% salt spray testing at 95°F relative humidity as per ASTM B117.

## AIR HANDLING UNIT CASING

The unit casing for **CADX-AG1** shall be made of zinc coated galvanized steel sheets conforming to JIS-G3302 and ASTM A653 which is phosphatized and baked after an electrostatic powder coat of approximately 60 microns. This finish and coating can pass a 1000 hour in 5% salt spray testing at 95°F (35°C) and 95% relative humidity as per ASTM B117. Panels and casing are insulated with 1" thick fiberglass (with BGT coating) thermal and acoustic insulation having density of 2 lb/ft<sup>3</sup>. (32 kg/m<sup>3</sup>) and thermal conductivity of 0.23 BTU.in/ft<sup>2</sup>Fh (0.033 W/m<sup>2</sup>K). Insulation meets the requirements of NFPA 90A and 90B for fire resistance.

## EVAPORATOR COIL

Evaporator coil shall be constructed of inner grooved copper tubes 3/8" OD mechanically bonded to corrugated aluminium fins. 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 450 psig (3102Kpa) under water, cleaned & dehydrated at the factory. Coil shall conform to AHRI-410.

## EVAPORATOR FAN AND MOTOR

Fans of evaporators shall be forward curved, double inlet double width (DIDW), centrifugal type, Statically & dynamically balanced, mounted on a single heavy duty statically & 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.

## FILTERS

Air handling units shall be provided with air filter. Filter should be 1" (25mm) standard or 2" (50mm) thick optional washable aluminum media with average dust arrestance 54% based on ASHRAE standards 52.1.

