

**HIGH EFFICIENCY SERIES**  
**MINI-SPLIT**  
**DUAL / TRIPLE / QUAD ZONE / FIVE PORT**  
**INSTALLATION MANUAL**



<b>SMZ18H422ZOGB</b>	<b>Condenser</b>
<b>SMZ24H421ZOGB</b>	<b>Condenser</b>
<b>SMZ30H421ZOGB</b>	<b>Condenser</b>
<b>SMZ42H421ZOGB</b>	<b>Condenser</b>
<b>SHE9H4ZIGB</b>	<b>Evaporator</b>
<b>SHE12H4ZIGB</b>	<b>Evaporator</b>
<b>SHE18H4ZIGB</b>	<b>Evaporator</b>
<b>SHE24H4ZIGB</b>	<b>Evaporator</b>

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Do not dispose this product as unsorted municipal waste. Collection of such waste for special treatment is necessary.

## **INSTALLATION STEPS**

- **Select the location for the indoor and outdoor unit. (page 7)**
- **Mount the indoor wall brackets. (page 9)**
- **Drill wall penetration holes. (page 9)**
- **Hang the indoor units. (page 10)**
- **Locate and mount the outdoor unit. (page 13)**
- **Connect and route line set. (page 14–15)**
- **Connect the wiring from the indoor unit to the outdoor unit. (Page 16–18)**
- **Leak test & Evacuate unit. (page 21-22)**
- **Operational Test of system. (page 23)**

## **NOTES TO INSTALLER**

This manual is to aid the qualified HVAC contractor in the installation of this Mini Split system.

Report all shipping damage to the carrier IMMEDIATELY. Check units and box exterior for damage.

Please read and understand these instructions prior to installing the unit, failure to comply with these instructions may result in improper installation, operation and maintenance, possibly resulting in fire, electrical shock, property damage, personal injury or death.

### **CAUTION! Do not use old refrigerant lines with new installation:**

For connecting pipes use new and clean piping materials with high pressure fittings made for R410A only. This air conditioner adopts the new HFC refrigerant (R410A) which does not destroy ozone layer. R410A refrigerant operates at approximately 1.6 times the pressure of refrigerant R22. Accompanied with the adoption of the new refrigerant, the refrigeration lubricating oil has also been changed. During installation be sure that water, dust or foreign material does not enter into the new system. The system must not be left open to the atmosphere for any reason for any period of time as the systems oil quickly absorbs moisture and will contaminate and damage the system. To prevent mixing of refrigerant or refrigeration lubricating oil, the sizes of connecting sections of charging port on main unit and installation tools are different from those used for the conventional refrigerant units. Accordingly, special tools are required for the new refrigerant (R410A) units. The best and recommended solution is - do not use the existing line sets because there may be some problems with pressure fittings and possible impurities in the existing piping.

### **When installing this unit, an electrical surge suppressor is recommended.**

Installers please pass this manual and warranty registration to end user. If technical assistance is required during installation or start up, please call 704-504-8590 (M-F 8:00 am to 4:30 pm ET) to speak to a Technical Service Engineer. Before calling please have the Model and Serial numbers available.

### **Safety Instructions:**

1. Carefully read all instructions prior to installation.
2. Check Rating Plate for correct system voltage before installing the unit. Installing and operating a unit with the incorrect voltage may result in malfunction or other issues and will void the warranty.
3. Units must be connected to a correctly grounded electrical supply.
4. Do not use the units if they have been dropped or otherwise damaged or installed incorrectly.

The manufacturer of the unit will not be liable for any damages caused by failure to comply with the installation and operating instructions in this manual.

The unit rating plate contains pertinent information for unit operation; please refer to it as required.

Inspect all parts for damage prior to installation and start up. Units must be installed by a qualified HVAC contractor.

## **PARTS INCLUDED WITH UNIT**

Wall-mounted Indoor unit	Outdoor Unit
● Wall Bracket	● Drain Fitting
● Remote Control	● Installation Manual
● Batteries for Remote Control (2 AAA)	● Terminal Label
● Remote Control Holder	
● Adapter: 1/2"F to 3/8"M (9510198) with 9K indoor and 12K unit. 3/8"F to 1/2"M (9510197) with 18K indoor unit.	● Adapter (for 42K unit only): 1/4"F to 3/8"M (951-0517) – 2 pcs, 3/8"F to 5/8"M (951-0516) – 3 pcs, 3/8"F to 1/2"M (951-0515) – 4 pcs
● Operation Manual	
● Drain Tubing 6 ft.	

**Note:** The outdoor unit can also be connected to different types of indoor units as followings:

**Console:** 9K - SMZC9H4ZIGX; 12K - SMZC12H4ZIGX, 18K - SMZC18H4ZIGX.

**Cassette:** 12K - SMZCA12H4ZIGX, 18K - SMZCA18H4ZIGX, 24K – SMZCA24H4ZIGX

**Floor / Ceiling:** 9K - SMZFC9H4ZIGX; 12K - SMZFC12H4ZIGX, 18K - SMZFC18H4ZIGX,  
24K - SMZFC24H4ZIGX.

**Ducted:** 9K - SMZD9H4ZIGX; 12K - SMZD12H4ZIGX, 18K - SMZD18H4ZIG, 21K – SMZD21H4ZIG,  
24K – SMZD24H4ZIG.

For the detail information about the included parts and connecting for above indoor units, please refer to the manual to be included with each indoor unit.

## **INSTALLER SUPPLIED PARTS**

The following additional Items are required for proper installation.

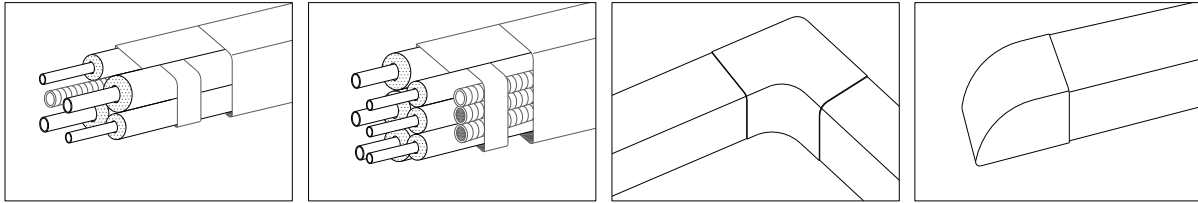
- Refrigerant line set: Insulated copper tubing:
  - 9K Indoor – 1/4" (liquid line) and 3/8" (suction line).
  - 12K Indoor – 1/4" (liquid line) and 3/8" (suction line)
  - 18K Indoor – 1/4" (liquid line) and 1/2" (suction line).
  - 24K Indoor – 1/4" (liquid line) and 5/8" (suction line).
- Flare nuts 2 ea. required per line, see above (line set) for size.
- Vinyl UV resistant tape.
- Supply Power:
  - Dual Zone** SMZ18H422ZOGB
    - 25 amp circuit breaker
  - Triple Zone** SMZ24H421ZOGB
    - 30 amp circuit breaker
  - Quad Zone** SMZ30H421ZOGB
    - 30 amp circuit breaker
  - Five Port** SMZ42H421ZOGB
    - 40 amp circuit breaker
- Interconnect wire cable for all units
  - 4C 14 AWG stranded (Recommended) 16 AWG stranded 4C (min) per indoor unit.
- Refrigerant - R410A required for additional line set charge.
- Sealing putty.
- 1/4" to 5/16" access fitting adaptor (PN: QC-S5)
- Mounting hardware - Wall anchors, condenser pad etc.
- Surge protector (highly recommended)

Note: Condensate pump **cannot** be powered from the indoor unit. Power connections must be made at outdoor unit supply power.

Main system breaker or disconnect sized per unit requirements should be mounted adjacent to outdoor unit.

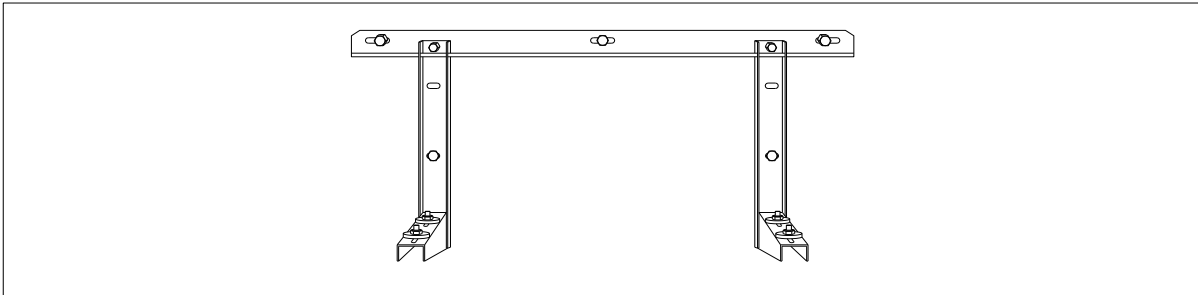
### **Decorative Channel**

Route the bundled piping and wiring to the outdoor unit and connect per the OUTDOOR UNIT installation instructions. Our **Plastic-Duct** piping and wiring duct work provides a convenient and professional looking system to route and protect the pipes and wires. Please see the illustrations below:



### **Wall Bracket**

The outdoor unit may be mounted using a wall bracket (optional) (Our Catalog # BR-440L for up to 440 lbs), or located in a freestanding position on the floor or pad (preferably slightly elevated).



## **INSTALLATION CONSIDERATIONS**

### **General Information**

#### **Application**

Check the application of the unit prior to installation. Certain applications require additional components or installation parameters.

#### **Computer or Data Server Rooms**

These require approximately 12,000 BTU/H capacities per 250 ft<sup>2</sup> of room size (Based on 8' ceiling height). Low ambient controller included.

#### **Offices and Commercial Spaces, Churches etc.**

These require approximately 12,000 BTU/H capacity per 400 ft<sup>2</sup> of room size (Based on 8' ceiling height).

#### **Residential, Bedrooms, Family Rooms etc.**

These require approximately 12,000 BTU/H capacity per 600 ft<sup>2</sup> of room size (Based on 8' ceiling height).

**Note: This system does not contain a back-up heat source and is NOT recommended as a primary source of heat.**

## System Configuration Options

### Dual Zone

#### SMZ18H422ZOGX (2 indoor units)

**Note:** Do not mismatch or connect to an outdoor unit other than the designed matched system.

ONE INDOOR UNIT	TWO INDOOR UNITS
9K 12K	9K + 9K 9K + 12K

### Triple Zone

#### SMZ24H421ZOGB (2 to 3 indoor units)

**Note:** 1. Do not mismatch or connect to an outdoor unit other than the designed matched system.

2. This system **must** be used with a minimum of **two indoor units** (evaporators).

2 INDOOR UNITS	3 INDOOR UNITS
9K + 9K / 9K + 12K / 9K + 18K 12K + 12K / 12K + 18K	9K + 9K + 9K / 9K + 9K + 12K 9K + 12K + 12K

### Quad Zone

#### SMZ30H421ZOGB (2 to 4 indoor units)

**Note:** 1. Do not mismatch or connect to an outdoor unit other than the designed matched system.

2. This system **must** be used with a minimum of **two indoor units** (evaporators).

2 INDOOR UNITS	3 INDOOR UNITS	4 INDOOR UNITS
9K + 9K / 9K + 12K 9K + 18K / 12K + 12K 12K + 18K / 18K + 18K	9K + 9K + 9K / 9K + 9K + 12K 9K + 9K + 18K / 9K + 12K + 12K 12K + 12K + 12K	9K + 9K + 9K + 9K
The system matches below are not recommended if all indoor units may require simultaneous continuous duty at full efficiency.		
18K + 18K	9K + 12K + 18K 12K + 12K + 18K	9K + 9K + 9K + 12K 9K + 9K + 12K + 12K






#### SMZ42H421ZOGB (2 to 5 indoor units)

**Note:** 1. Do not mismatch or connect to an outdoor unit other than the designed matched system.

2. This system **must** be used with a minimum of **two indoor units** (evaporators).

2 INDOOR UNITS	3 INDOOR UNITS	4 INDOOR UNITS	5 INDOOR UNITS
9K + 9K 9K + 12K 9K + 18K 12K + 12K 12K + 18K 18K + 18K 12K + 21K 12K + 24K 18K + 21K 18K + 24K 21K + 21K 21K + 24K	9K + 9K + 9K 9K + 9K + 12K 9K + 9K + 18K 9K + 12K + 12K 9K + 12K + 18K 9K + 18K + 18K 12K + 12K + 12K 12K + 12K + 18K 12K + 18K + 18K 9K + 9K + 21K 9K + 9K + 24K 9K + 18K + 21K 9K + 12K + 21K 9K + 12K + 24K 12K + 12K + 21K	9K + 9K + 9K + 9K 9K + 9K + 9K + 12K 9K + 9K + 9K + 18K 9K + 9K + 12K + 12K 9K + 9K + 12K + 18K 9K + 12K + 12K + 12K	9K + 9K + 9K + 9K + 9K
The system matches below are not recommended if all indoor units may require simultaneous continuous duty at full efficiency.			
24K + 24K	18K + 18K + 18K 9K + 18K + 24K 9K + 21K + 21K 9K + 21K + 24K 12K + 18K + 21K 12K + 18K + 24K 12K + 21K + 21K 12K + 12K + 24K	9K + 9K + 18K + 18K 9K + 12K + 12K + 18K 9K + 12K + 12K + 21K 12K + 12K + 12K + 18K 9K + 9K + 9K + 24K 9K + 9K + 12K + 21K 9K + 9K + 12K + 24K 12K + 12K + 12K + 12K 9K + 9K + 9K + 21K	9K + 9K + 9K + 9K + 18K 9K + 9K + 9K + 12K + 12K 9K + 9K + 12K + 12K + 12K 9K + 9K + 9K + 9K + 12K

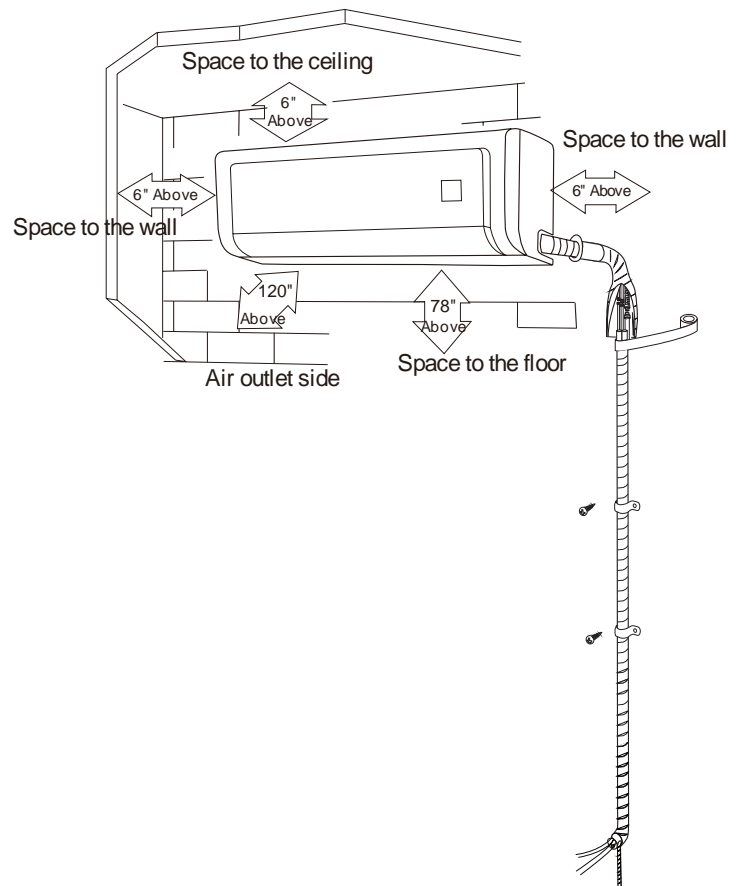
**Indoor Models Available:**

Indoor Unit Type	Catalog Number	Outline	Remark
Wall-mounted Indoor Unit	SHE9H4ZIGB SHE12H4ZIGB SHE18H4ZIGB SHE24H4ZIGB		For the detail information about connecting, please refer to the specific manual included with each indoor unit.
Console Indoor Unit	SMZC9H4ZIGX SMZC12H4ZIGX SMZC18H4ZIGX		
Cassette Indoor Unit	SMZCA12H4ZIGX SMZCA18H4ZIGX SMZCA24H4ZIGX		
Floor / Ceiling Indoor Unit	SMZFC9H4ZIGX SMZFC12H4ZIGX SMZFC18H4ZIGX SMZFC24H4ZIGX		
Ducted Indoor Unit	SMZD9H4ZIGX SMZD12H4ZIGX SMZD18H4ZIGX SMZD21H4ZIGX SMZD24H4ZIGX		

**Selecting locations for the Indoor unit (Wall-mounted)**

1. Determine the best location for mounting the Indoor unit. Ensure the dimensions requirement indicated by the arrows are followed.
2. Paying close attention to the air circulation in the room, these units throw air approximately 15ft. Ensure that no obstacles impede airflow.
3. Do not mount this unit close to a heat source or a doorway.

**Note:** For the detailed information about other types of indoor units, please refer to the manual to be included with each indoor unit.

**Selecting location for Outdoor unit**

1. Determine the best location for mounting the outdoor unit. Ensure the dimension requirements indicated by the arrows are followed.
2. Do not mount this unit close to combustibles or heat sources.
3. Although this unit is fairly quiet when in operation, do not mount where noise issues could be a problem.

### **Line set length**

Locate the Indoor and Outdoor units as close together as possible. Line set height and length cannot exceed specifications.

#### **Installation Notes:**

##### **DUAL ZONE – SMZ18H422ZOGB**

1. The maximum total line set length must not exceed 65.6 feet for all units attached to the 18K condenser.
2. Dual Zone model SMZ18H422ZOGB is designed to operate with 1 or 2 indoor units.
3. The Dual Zone design length is 32.8 ft. for each indoor unit. The maximum total line set length for all units is 65.6 ft. Refrigerant must be added (0.215 oz./ft.) when line set total length exceeds 32.8 ft.

##### **TRIPLE ZONE – SMZ24H421ZOGB**

1. The maximum total line set length must not exceed 196.85 feet for all units using the 24K condenser.
2. TRIPLE ZONE model SMZ24H421ZOGB is designed to operate two to three indoor units. DO NOT use this system with one indoor unit.
3. The TRIPLE Zone design length is 65.6 ft. for each indoor unit. The maximum total line set length for all units is 196.85 ft. Refrigerant must be added (0.215 oz./ft.) when line set length exceeds 98.4 ft. total.

##### **QUAD ZONE – SMZ30H421ZOGB**

1. The maximum total line set length must not exceed 229.7 feet for all units using the 30K condenser.
2. Quad Zone model SMZ30H421ZOGB is designed to operate two to four indoor units. DO NOT use this system with one indoor unit.
3. The Quad Zone design length is 82 ft. for each indoor unit. The maximum total line set length for all units is 229.7 ft. Refrigerant must be added (0.215 oz./ft.) when line set length exceeds 131.2 ft. total.

##### **FIVE PORT – SMZ42H421ZOGB**

1. The maximum total line set length must not exceed 246.1 feet for all units using the 42K condenser.
2. Five Port model SMZ42H421ZOGB is designed to operate two to five indoor units. DO NOT use this system with one indoor unit.
3. The Five Port design length is 82 ft. for each indoor unit. The maximum total line set length for all units is 246.1 ft. Refrigerant must be added (0.215 oz./ft.) when line set length exceeds 131.2 ft. total.

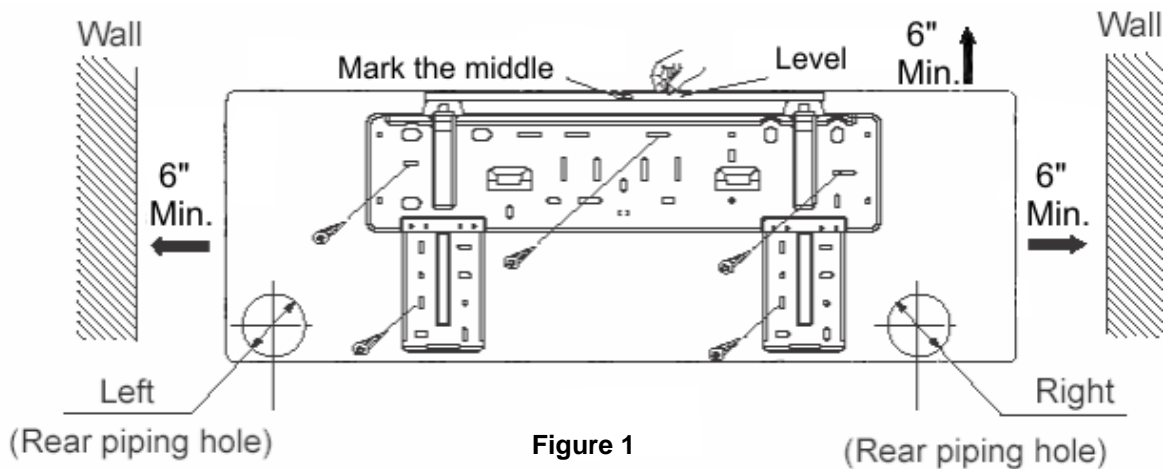
**NOTE: An oil trap is recommended if the indoor unit is over 15 feet in height from the outdoor unit.**



## **INDOOR UNIT (EVAPORATOR) INSTALLATION**

### **1. Clearances and Mounting requirements (Wall-mounted Indoor Unit)**

Enough space should be left around the unit to facilitate maintenance. Please view Figure. 1 for recommended dimensions:



Minimum clearances as noted above. Mount indoor unit with a minimum 6" to ceiling. Indoor unit should have approximately 16 feet of unobstructed area directly in front for proper air flow for the 9K and 12K indoor units. The 18K should have approximately 25 feet of unobstructed area directly in front. Line set can exit at the right or left rear or ends of the indoor unit.

Be sure that the indoor unit is mounted firmly to the wall, and that the wall structure will support the weight of the unit.

Be sure that the air inlet and outlets are unobstructed.

Be sure that all clearances are as noted in the above Figure 1.

This unit is not designed to be connected to a plug-in outlet.

Do not install this unit near a heat source, direct sunlight, near hazardous chemicals or combustible gases.

### **2. Mounting the Wall Plate**

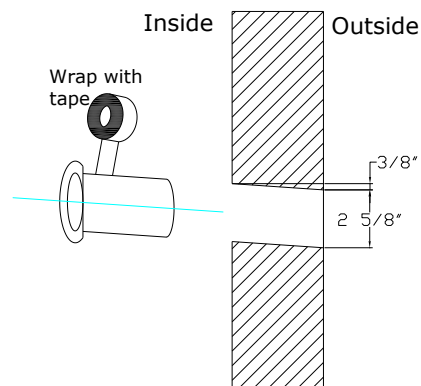
After determining an acceptable location for the indoor unit, fasten the wall bracket securely to the wall using the proper anchors (installer supplied). Be sure the wall bracket is level and firm to the wall using a minimum of 4 screws or wall anchors. Failure to mount the wall bracket level can result in improper condensation drainage.

### **3. Wall Penetration**

Using the measurements in Figure 1, determine the exit point of the line set. For best results, the right rear is preferred. Left rear exit of the line set requires that the line set be connected to the indoor unit prior to mounting it to the wall plate. If desired the line set may run along the inside wall by removing the cutouts along the back edge of the case. Line sets mounted along the inside wall may be covered with Plastic-Duct line set covering (See page 5).

Cut a 2-5/8" hole slanted downward towards the outside.

Hole diameter is based on wall sleeve made from 2-1/2" PVC pipe. Wall penetration should be slanted slightly downward to the outside a minimum of 3/8" to provide proper condensation drainage.



**Figure 2**

Wall sleeve can now be inserted into the hole. Insert sleeve from the inside to the outside. The sleeve should be approximately 3/16" longer than the wall thickness.

#### 4. Identify Line Sets

Mark the line sets as necessary to prevent crossed connections. Crossed line sets will prevent proper operation.

#### 5. Identify Interconnect cables

Connect interconnect cable and identify cable at both ends using labels supplied with outdoor units. Cable routed to terminal from rear of indoor unit.

#### 6. Mounting the Indoor Unit

If right rear exit of line set is used the indoor unit can now be mounted. Remove retaining clips from back of unit to allow access to the line set stubs. Gently form the line set stubs straight outward. Use caution when forming the line set; being careful not to kink the copper lines. See Figure 3.

#### 7. Connecting Line Set

If installer determines the line set should be connected at this time, see page 12 for torque standards.

#### 8. Hang the Indoor Units

Once lines are straight, carefully slide the ends of line set out through the wall sleeve. Hook the indoor unit onto the top clips of the wall plate. Carefully lower the bottom portion of the indoor unit towards the wall, snapping it into the clips at the bottom of the unit. See Figure 4.

If using the left rear exit run lines from outside to indoor unit. Form line set to mate to indoor unit stubs and connect prior to mounting to indoor unit. If necessary run lines along inside wall and carefully remove the proper cut out from the indoor unit housing. Line sets may be covered with Plastic-Duct for a more professional job (see page 5).

#### 9. Inspect the Installation

Ensure that the hooks at the top and bottom of the inside unit are firmly locked in place.

#### 10. Verify the Indoor Unit is Properly Leveled.

Accurate leveling is critical to prevent water damage during operation.

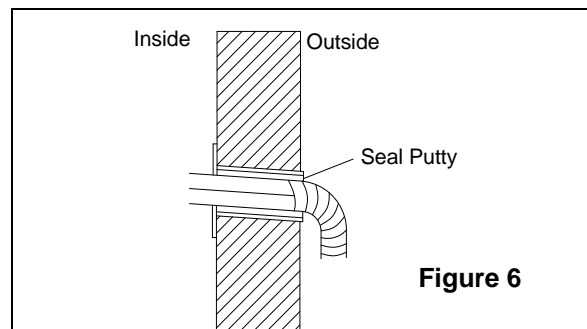
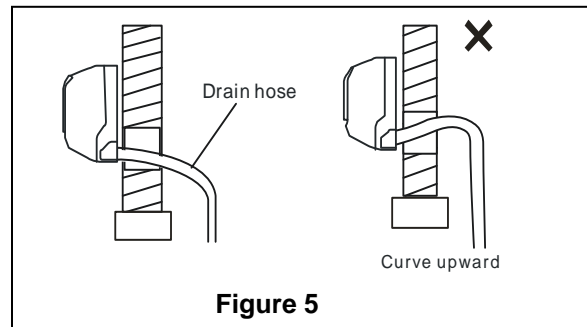
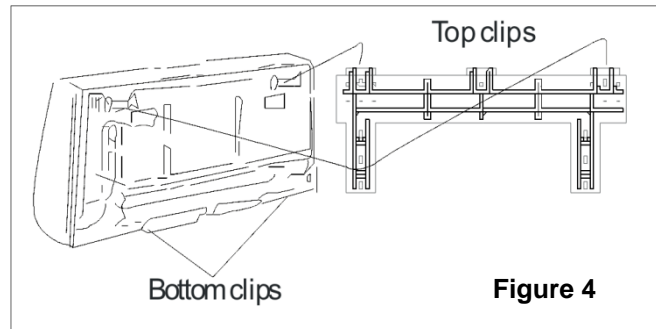
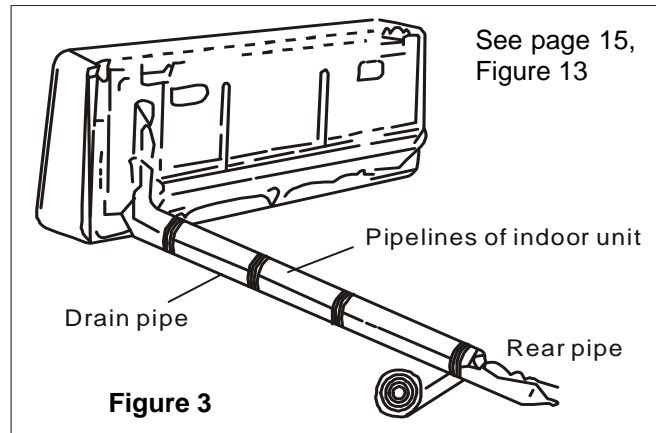
#### 11. Check the Drain Hose

Observe that the condensate drain pipe does not curve upward and is in the lower part of the pipe bundle. See Figure 5.

#### 12. Seal the Hole

Fill the gap between the wall sleeve and the line set with sealing putty (installer provided) to prevent outside air and moisture from entering room (see Figure 6).

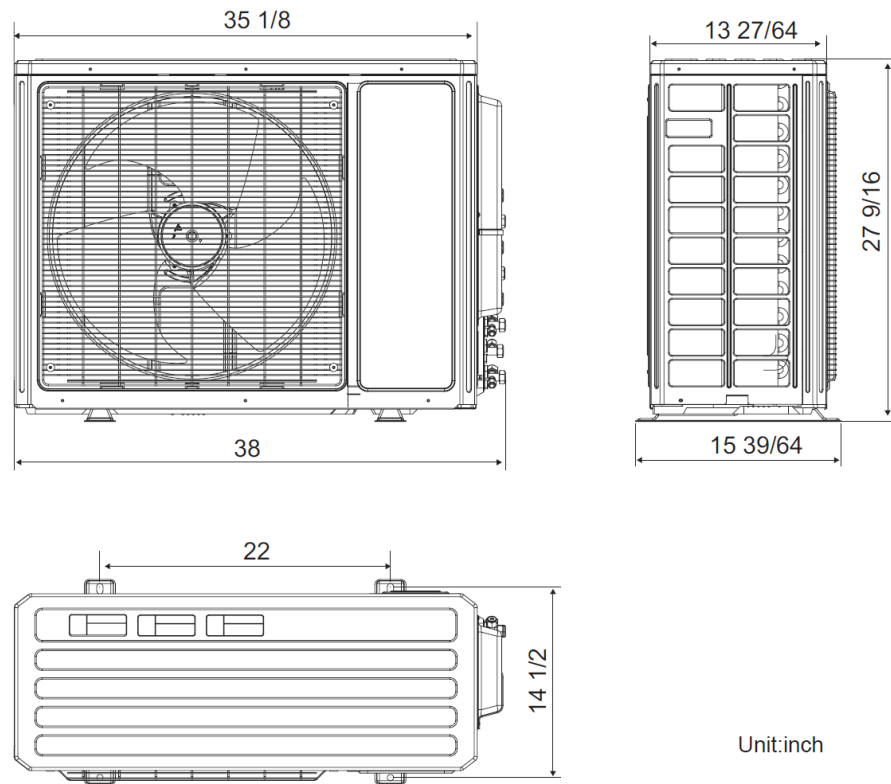
**Note:** For the detail information about other types of indoor unit, please refer to the manual to be included with each Indoor unit.



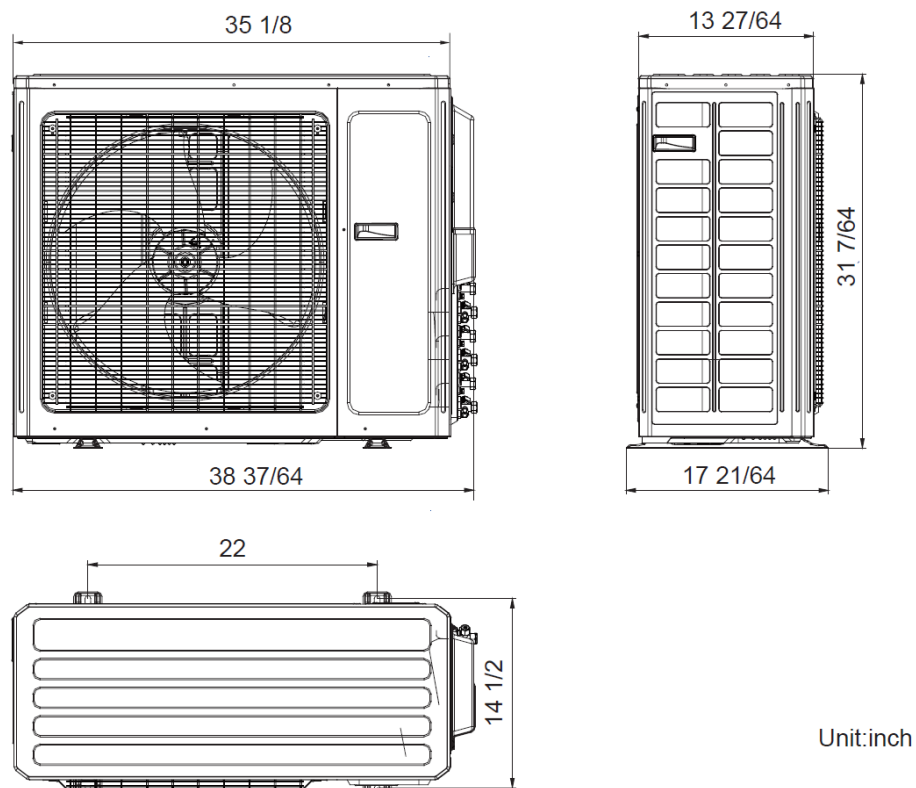
## OUTDOOR UNIT (CONDENSER) INSTALLATION

### Outdoor unit dimension

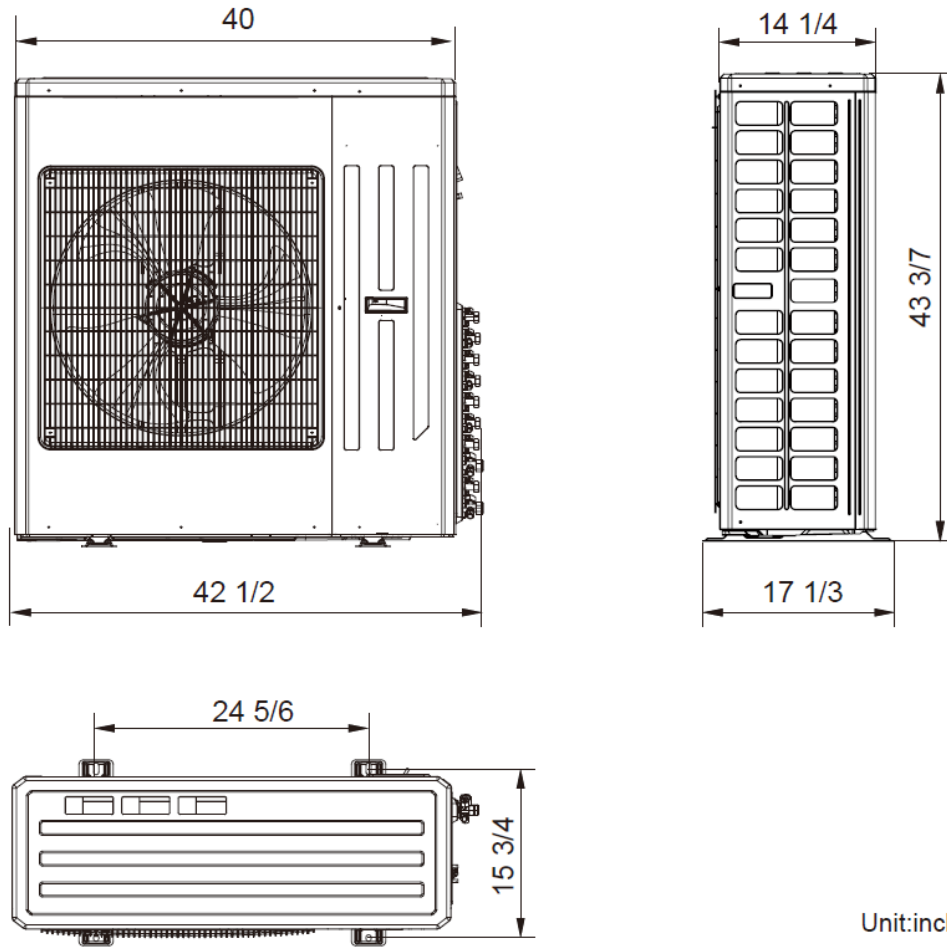
#### SMZ18H422ZOGB – Dual Zone



#### SMZ24H421ZOGB – Triple Zone / SMZ30H421ZOGB – Quad Zone



## SMZ42H421ZOGB – Five Port



### Outdoor unit location

The location must allow easy servicing and provide good air circulation as shown in the illustration below:

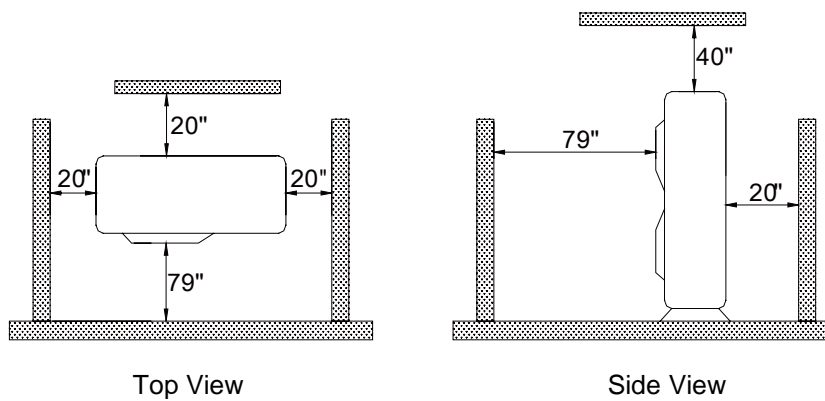


Figure 7

## Mounting the Outdoor (condenser) Unit

Follow the clearance guidelines in the diagram above. Clearance distances are minimums. Minimum clearance above unit is 12" to allow for servicing.

Install drain plug as in Figure 8 (included). Drain hose not included.

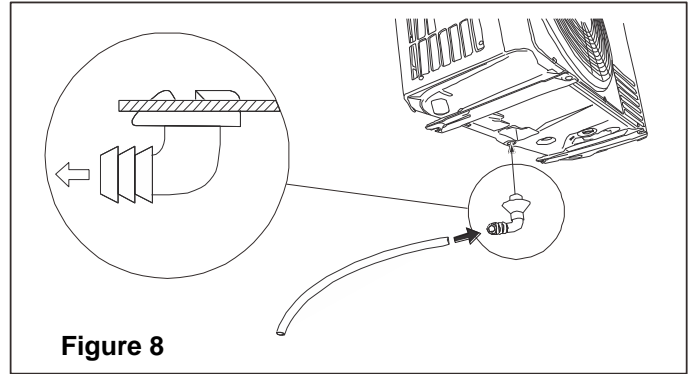
Do not mount this unit close to combustibles or heat sources.

Although this unit is fairly quiet when in operation, do not mount this unit where noise issues could be a problem.

Mount unit on an equipment pad or solid surface, install drain plug and tube as necessary. If wall mounting is necessary a wall mount bracket may be purchased (BR-440L) for this purpose. Follow mounting instructions for bracket to ensure safe installation.

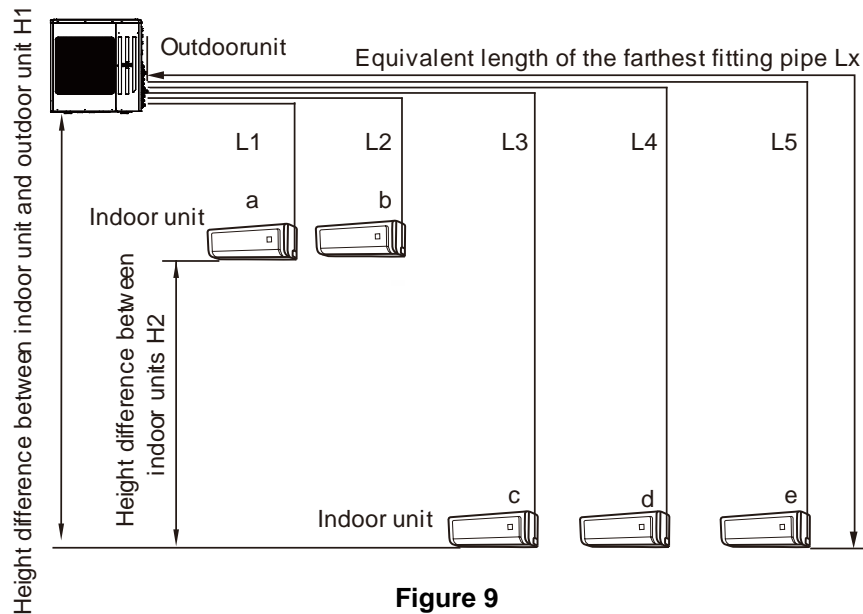
Anchor bolts of the proper size and type (Installer provided) must be used.

For best results mount this unit as close as possible to the evaporators. Check maximum line length specifications before mounting.



**Figure 8**

## Maximum Line length and height



**Figure 9**

Connection Length	SMZ18H422ZOGB DUAL ZONE	SMZ24H421ZOGB TRIPLE ZONE	SMZ30H421ZOGB QUAD ZONE	SMZ42H421ZOGB FIVE PORT
Total Length	$L1+L2 \leq 65.6 \text{ ft.}$	$L1+L2+L3 \leq 196.85 \text{ ft.}$	$L1+L2+L3+L4 \leq 229.7 \text{ ft.}$	$L1+L2+L3+L4+L5 \leq 246.1 \text{ ft.}$
<b>Lx</b> - Max. Length for any indoor unit	32.8 ft.	65.6 ft.	82 ft.	82 ft.
<b>H1</b> - Max. Height between each indoor and the outdoor unit	32.8 ft.	32.8 ft.	49.2 ft.	49.2 ft.
<b>H2</b> - Max. Height difference between indoor units	32.8 ft.	32.8 ft.	24.6 ft.	24.6 ft.

**MAXIMUM LINE LENGTH AND / OR HEIGHT MUST NOT BE EXCEEDED!**

## CONNECTING LINE SET

**CAUTION! IMPROPER CONNECTION OF THE LINE SETS WILL RESULT IN IMPROPER OPERATION OF THE SYSTEM. MARK EACH LINE SET AND WIRING FOR IDENTIFICATION. IDENTIFICATION LABELS ARE INCLUDED WITH EACH OUTDOOR UNIT. ENSURE THAT THE WIRING AND THE LINE SETS ARE ROUTED TO THE PROPER INDOOR ZONE.**

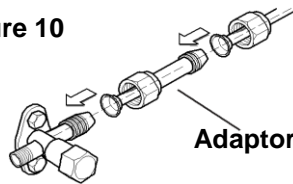
### INDOOR UNITS

Indoor Unit Type	Capacity	Liquid Line	Suction Line	Adapter
Wall Mounted	9K, 12K	1/4"	3/8"	1/2" F to 3/8" M <i>adapter included</i>
	18K	1/4"	1/2"	3/8" F to 1/2" M <i>adapter included</i>
	24K	1/4"	5/8"	N/A
Console, Cassette Floor / Ceiling, Ducted	9K, 12K	1/4"	3/8"	1/2" F to 3/8" M <i>adapter included</i>
	18K	1/4"	1/2"	3/8" F to 1/2" M <i>adapter included</i>
	21K, 24K	3/8"	5/8"	N/A

### OUTDOOR UNITS

Outdoor Unit Type	Port A liquid-suction	Port B liquid-suction	Port C liquid-suction	Port D liquid-suction	Port E Liquid-suction
18K Dual Zone	1/4"-3/8"	1/4"-3/8"	N/A	N/A	N/A
24K Triple Zone	1/4"-3/8"	1/4"-3/8"	1/4"-3/8"	N/A	N/A
30K Quad Zone	1/4"-3/8"	1/4"-3/8"	1/4"-3/8"	1/4"-3/8"	N/A
42K Five Port (adapters included)	1/4"-3/8"	1/4"-3/8"	1/4"-3/8"	1/4"-3/8"	1/4"-3/8"

**Figure 10**



Adapter may be bent up to a 90 degree angle if necessary.

### Refrigerant Tubing

- After the outside unit is secured to the mounting location (Pad, Wall Brackets, etc.), route the line set(s) from the Indoor unit to the outdoor unit, and secure with clamps or Plastic-Duct as required.

### Installation Notes:

- The SMZ18H422ZOGB Dual Zone unit is designed to run one or two indoor units. (See page 6)
- The SMZ24H421ZOGB Quad Zone unit is designed to run two or three units. DO NOT use this system with one indoor unit. (See page 6)
- The SMZ30H421ZOGB Quad Zone unit is designed to run two, three, or four indoor units. DO NOT use this system with one indoor unit. (See page 6)
- The SMZ42H421ZOGB Five Port unit is designed to run two, three, four or five indoor units. DO NOT use this system with one indoor unit. (See page 6)
- The outdoor unit is supplied with a sufficient refrigerant charge of R410A for a maximum Design Length, no extra refrigerant required. Beyond this length additional refrigerant is required and must be weighted in. (see specifications)

Indoor unit contains a small quantity of nitrogen. DO NOT remove the caps until the tubing is ready to be installed.

**NOTE:** An oil trap is recommended to be installed if the indoor unit is over 15 feet in height from the outdoor unit. To prevent kinking, bend tubes using a tubing tool.

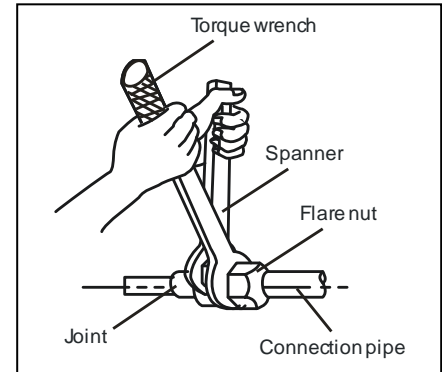
**CAUTION! WHEN REMOVING THE VALVE CAPS, DO NOT STAND IN FRONT OF VALVES, AS THE SYSTEM IS UNDER HIGH PRESSURE.**

**CAUTION! DO NOT BRAZE TUBING OR USE THREAD SEALANT. USE FLARE CONNECTIONS ONLY.**

- Line set can now be cut (if necessary), to the proper length. Cut the tubing a little longer than measured distance. Completely remove all burrs from the cross cut section of tubing. Do not allow debris to fall into copper tube. It is extremely important to clean the copper tubing prior to connecting to system.
- Install flare nuts and follow standard flaring procedures. Use proper flaring tools for a leak proof connection. If a flared section is defective, cut it off and follow standard flaring procedures again.
- After cutting to length, creating the flares and before connecting the line set, clear all foreign materials by blowing nitrogen through copper tubing. Align the center of the tubing flare with its mating connector. Screw on the flare nut by hand and tighten the nut with a spanner and torque wrench. See Figure 11.

**Note:** Exceeding the tightening torque will damage the flare surface.

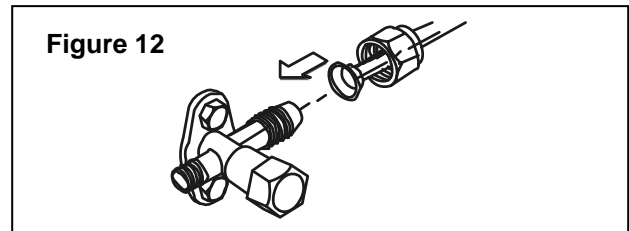
Tightening Torque Table:							
1/4"	11 – 22 lbs ft.	3/8"	23 – 29 lbs ft.	1/2"	33 – 37 lbs ft.	5/8"	44 – 48 lbs ft.



**Figure 11**

- Verify that the proper line set is being connected to the intended port of the outdoor unit. Connect the line sets to their appropriate fittings on the outside unit, and torque the flare fittings per the table above.

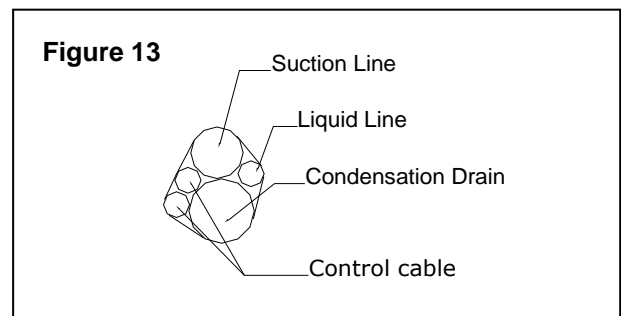
**DO NOT CROSS WIRES OR CROSS CONNECT SYSTEMS TO OUTDOOR UNIT.**



**Figure 12**

- Bundle all lines, control cables and condensation drain together. Be sure to leave ample length on control cable to allow for termination. Bundle can be secured together using vinyl tape.

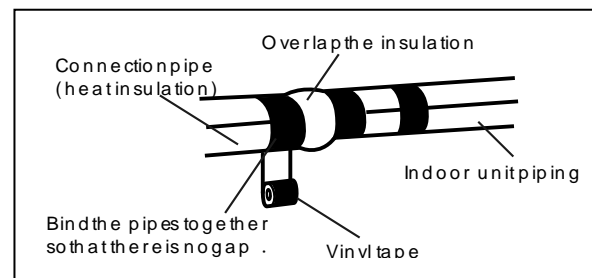
**Note:** Condensation drain **MUST** be placed at the bottom of the bundle as shown in the Figure 13. Failure to do so may cause evaporator to drain improperly.



**Figure 13**

- Line sets must have each tube insulated separately, including their unions with at least 1/4" thick insulation. Wrap the refrigeration tubing, drain hose, and electrical cables with a UV protected vinyl tape. Overlap insulation at all refrigeration joints per Figure 14.

**Note:** Completely wrap line set with insulation. Insulation joints may overlap if desired.



**Figure 14**

**CAUTION!** Failure to completely wrap both lines with insulation may result in damage from condensation forming on lines, and dripping onto walls, ceilings, etc.

## **ELECTRICAL CONNECTION**

**WARNING! Improper wiring between the inside units and the outside unit can cause serious damage to the system, and the risk of personal injury or fire. Use caution when connecting the wiring to ensure that the wires are connected properly.**

**DO NOT USE THERMOSTAT WIRE TO CONNECT OUTDOOR TO INDOOR UNIT!**

### **NOTES:**

- Electrical wiring and connections should be made by qualified electricians in accordance with National and Local electrical codes and regulations.
- Proper grounding is a **must**.
- Voltage should not vary beyond +/- 10% of the rated voltage.
- See the specifications page for proper wire sizes and circuit breaker sizes.
- Connect the control cables according to the diagrams on page 17.
- Make power connections per diagram on page 17.
- Remove the handle on the right side of the outdoor unit.
- Remove panel on the right front.
- Remove the cable clamp and connect the power connection cable to the terminal.
- Wiring should be terminal to terminal and to correct indoor unit. Do not cross wires!
- Reattach the cable clamp.
- Reinstall the handle.

### **Connect the Cable to the Outdoor Unit**

For models: SMZ18H422ZOGB, SMZ24H421ZOGB, SMZ30H421ZOGB and SMZ42H421ZOGB.

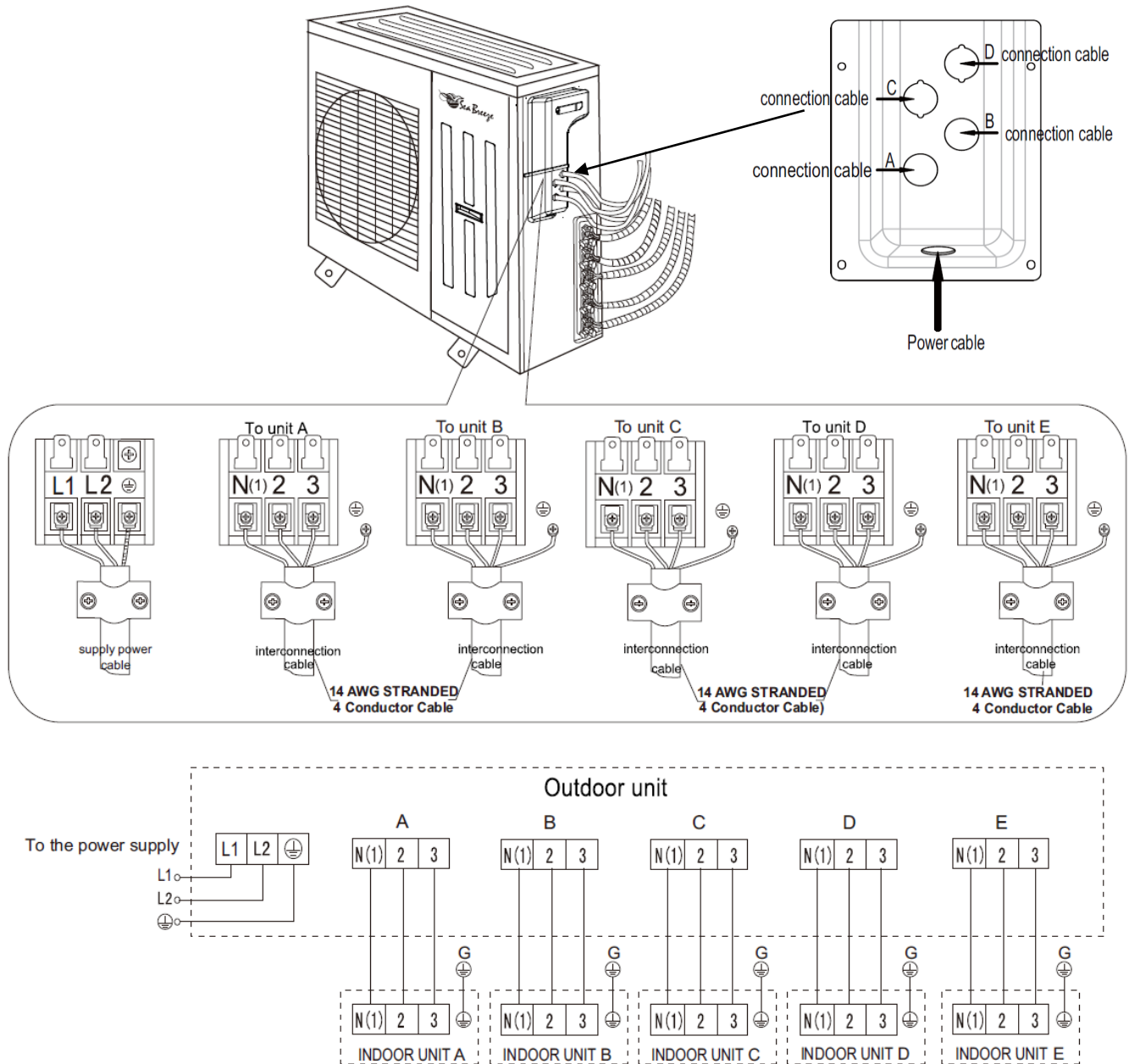
1. Remove cable knock-outs (A water tight cable strain relief or conduit is recommended here).
2. Remove screws to take off side panel.
3. Feed cable wire through knock-out holes.
4. Connect the wires to the terminals. (See wiring diagram Figure 17).
5. Replace side panel with the screws.
6. Secure wire cables.

**If a condensate pump is needed it should be connected to the *supply power* at the Outdoor Unit**



## TYPICAL ELECTRICAL WIRING CONNECTIONS

Typical electrical wiring for the Dual and Quad Zone units. (Dual Zone units use “A” and “B” connections, Triple Zone units use “A”, “B”, “C” connections, Quad Zone unit use “A”, “B”, “C” and “D” connections, Five Port unit use “A”, “B”, “C”, “D” and “E”).



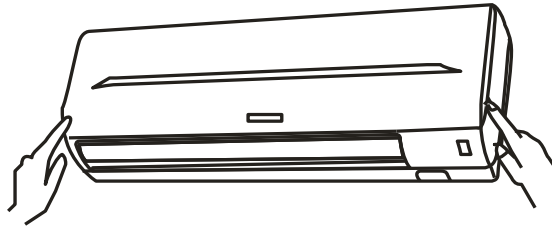
**Figure 15**

Wiring identification labels are supplied with each outdoor unit.

- The SMZ30H421ZOGX Quad Zone unit is designed to run two, three, or four indoor units. DO NOT use this system with one indoor unit. (See page 6)
- The SMZ42H421ZOGX Five Port unit is designed to run two, three, four or five indoor units. DO NOT use this system with one indoor unit. (See page 6)

### **Electrical connection of the indoor unit (Wall-mounted)**

Open the front cover by pressing inward on the sides of the cover near the bottom to release, then pull bottom of cover outwards.

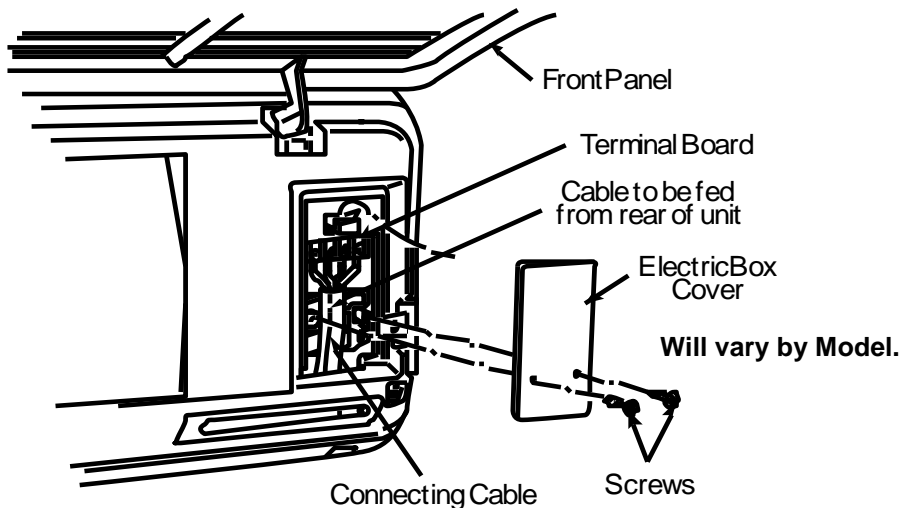


**Figure 16**

Feed the cable wire in from the rear of unit.

Open the electric box cover; connect the wires to the terminal strip individually according to the wiring diagram above. Ensure that the colors of the wires and terminal No. are the same as the wiring diagram. Tighten terminal screws for safe connections.

**DO NOT CROSS WIRES**  
**DO NOT CONNECT CONDENSATE PUMP TO THE INDOOR UNIT**



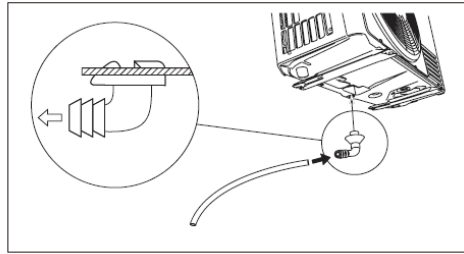
Identify each end of the interconnect cable and each of the conductor using the labels provided. Units A, B, C, D and E.

**Figure 17**

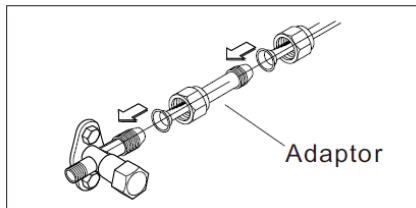
After wiring, replace the electric box cover, and then close the front panel by pressing the corners inward to latch.

**Note:** For detailed information about other types of indoor units, please refer to the manual packed with each indoor unit.

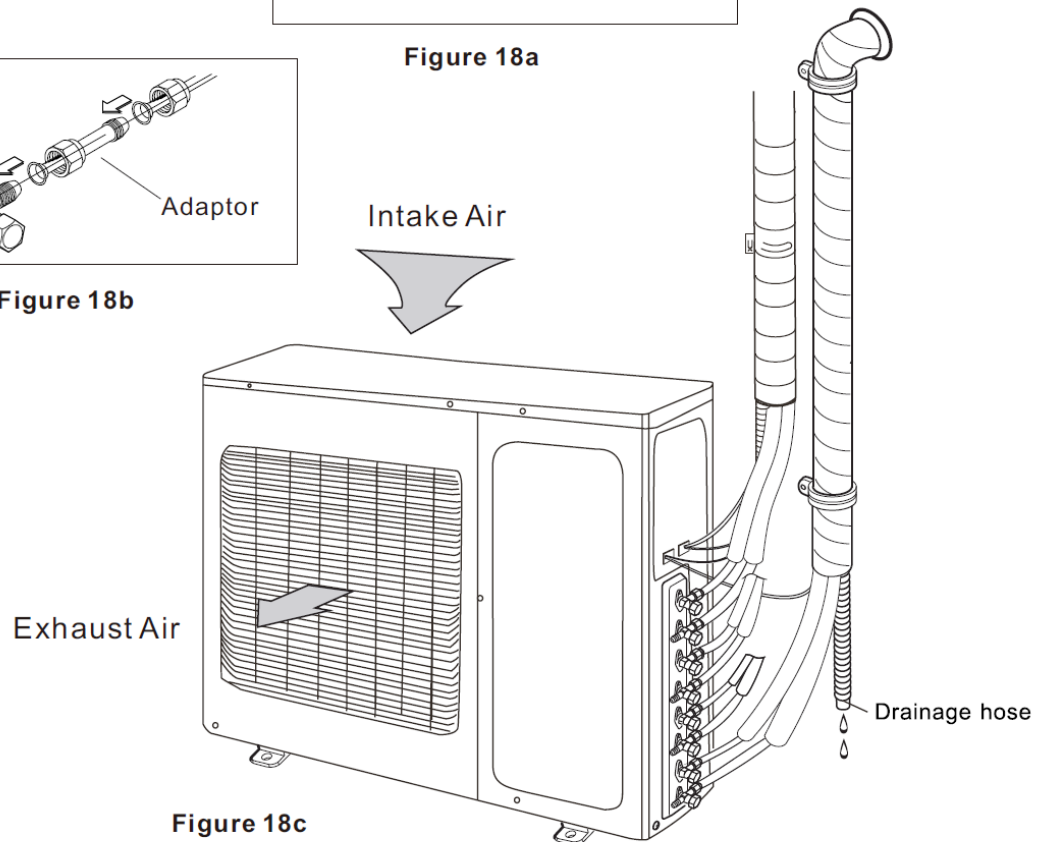
## TYPICAL OUTDOOR INSTALLATION



**Figure 18a**

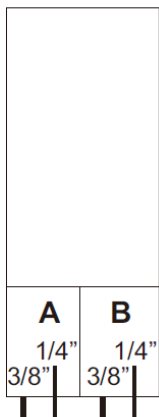


**Figure 18b**



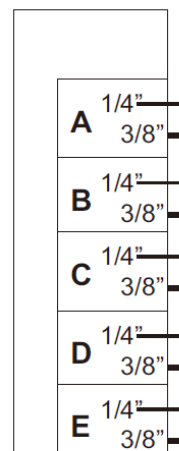
**Figure 18c**

Dual Zone  
Outdoor Unit



When using 9,000 or 12,000  
BTU indoor unit - no adaptor  
required.

Triple Zone (A, B, C ports)  
Quad Zone (A, B, C, D ports)  
Five Port (A, B, C, D, E ports)  
Outdoor Unit



When using 9,000 or 12,000  
BTU indoor unit - no adaptor  
required.

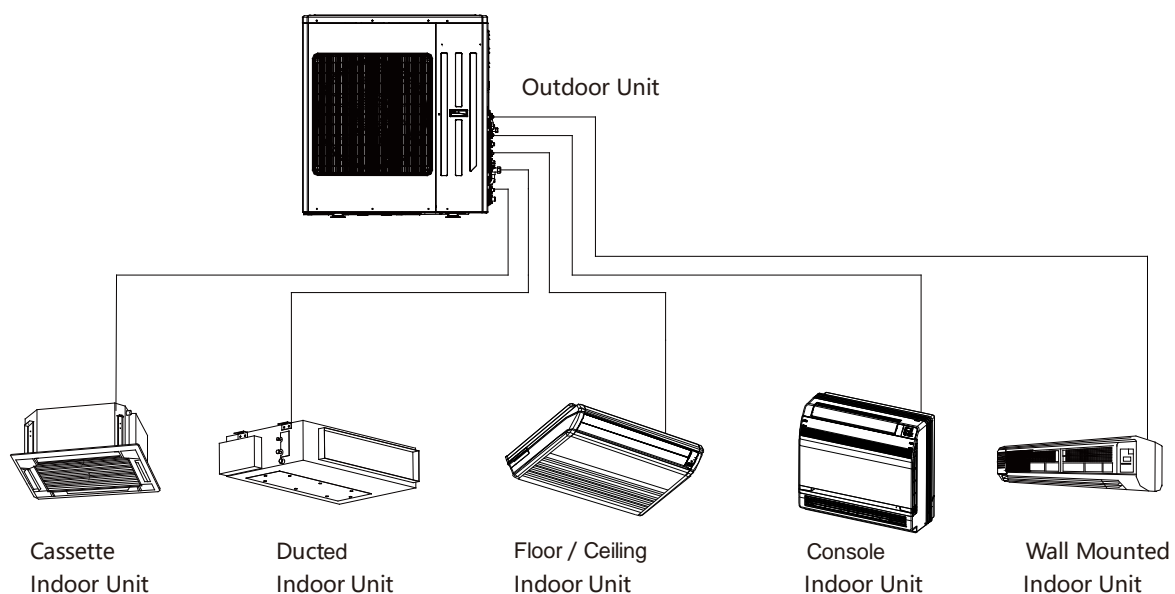
When using 18,000 BTU  
indoor unit - adaptor  
9510197 or 9510515 is required.

When using 21,000 or 24,000  
BTU indoor unit - adaptors  
9510516 and 9510517 is required.

**Figure 18d**

## TUBING CONNECTION

### System structure



**Figure 19**

For these multi-zone air conditioning system, the outdoor units are able to operate up to five indoor units which can be different types as shown above. The console indoor unit can be controlled only by the remote control. The other indoor units can be controlled by either the remote control or the wall control. The outdoor unit will run if any of the indoor units sends a request for heating or cooling. All indoor units will stop once the outdoor unit is turned off.

### Tubing Connection Size

INDOOR unit copper tubing		1/4"	3/8"	1/2"	5/8"	Adapter Included	Adapter Size
Wall-Mounted Indoor Unit	9K / 12K	x	x			Yes	1/2" F to 3/8" M
	18K	x		x		Yes	3/8" F to 1/2" M
	24K	x			x	No	
Cassette, Floor/ceiling, Console, Ducted Indoor Unit	9K	x	x			Yes	1/2" F to 3/8" M
	12K	x	x			Yes	1/2" F to 3/8" M
	18K	x		x		Yes	3/8" F to 1/2" M
	21K		x		x	No	
	24K		x		x	No	

OUTDOOR unit connection sizes		Terminal A	Terminal B	Terminal C	Terminal D	Terminal E	Adapter Included
18K (Dual Zone)	2 - 1/4", 3/8"	x	x				
24K (Triple Zone)	3 - 1/4", 3/8"	x	x	x			
30K (Quad Zone)	4 - 1/4", 3/8"	x	x	x	x		
42K (Five Port)	5 - 1/4", 3/8"	x	x	x	x	x	3/8"F to 1/2"M -4 pcs, 3/8"F to 5/8"M -3 pcs, 1/4"F to 3/8"M -2 pcs,

## **EVACUATION OF THE REFRIGERATION TUBES AND INDOOR UNIT**

After connecting the indoor and outdoor units, evacuate the air from the line set and the indoor unit as follows:

### **Leak Testing**

Indoor units are nitrogen pre-charged, however they should be pressure tested before installation.

1. Connect the charging hoses to the low side of the manifold and the service port of the suction valve (See figure 21b).

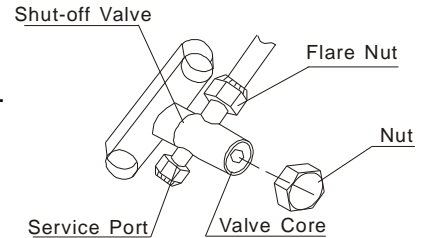
2. Connect the center hose of the manifold valve to a nitrogen source.

**NOTE:** The nitrogen gas cylinder is used in a vertical standing position.

3. Charge system with nitrogen to 400 PSI and check for leaks, using standard industry leak detection methods.

4. Pay attention to possible evaporator leaks that may have occurred during shipping or installation.

5. Remove the nitrogen by opening the manifold valves.



**Figure 20**

Perform previous steps 1 to 4 on all indoor units. (See Figure 21)

### **Vacuum Purge**

#### **DO NOT OPEN SERVICE PORT VALVES**

1. Turn on the vacuum pump. Evacuate system for about 30 minutes and confirm that the vacuum reading to each indoor unit is 500 microns. After reaching 500 microns continue evacuation for approximately 2 hours.

2. Close all manifold valves and turn off the vacuum pump. After waiting for 30 minutes, confirm that the vacuum reading has not changed. If the vacuum reading has changed, there is a leak that must be found and repaired before continuing.

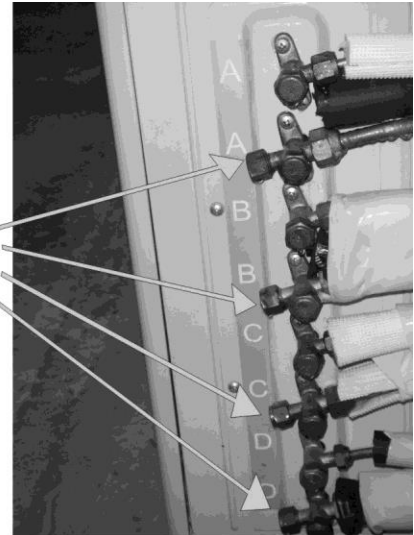
Perform previous steps 1 to 3 on all indoor units. Then proceed with the next step (3).

3. Remove the valve caps from all valves. Slowly open each liquid line fully using a hexagonal Allen wrench. Use the same procedure on the suction valve. Open all valves to the full back seat position.

4. Securely tighten the caps back onto liquid and suction the valves.

5. Check for gas leaks from all connections. Test with an electronic leak detector, or with soapy water and check for bubbles. Be sure to wipe off the soap with a clean cloth after leakage test.

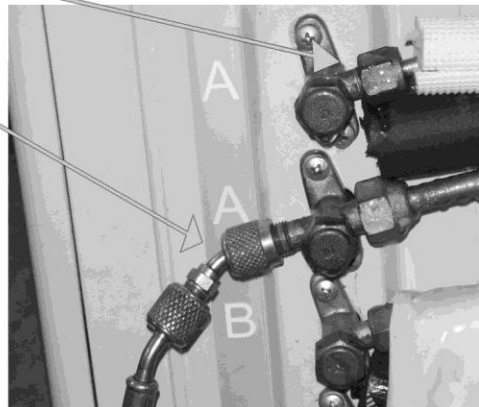
**SUCTION PORT CONNECTIONS**  
Use these ports for connection to each of the linesets.  
Each line set / evaporator assembly must be prepared separately.



**Figure 21a**

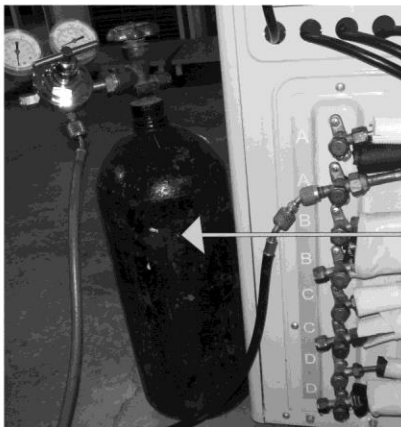
Loosen the liquid side flare fitting slightly to allow nitrogen purge.

Connect the manifold set to each suction port.



**Figure 21b**

**Figure 21c**



Nitrogen bottle connected for purge of unit A.  
Purge @ 150 PSI for 1-2 minutes.

Re-tighten flare fitting. Remove nitrogen tank from manifold and replace with vacuum pump.

Vacuum to 500 microns for 30 minutes. Repeat the above steps for each connected indoor unit.

**Figure 21d**



Once the vacuum operation has been performed on Unit A, open the valves slowly to allow the flow of refrigerant. Once the refrigerant flow cannot be heard, open both valves completely. These valves must be opened completely in order to prevent leaks. Replace caps on service ports and valves as added protection against leaks.

Repeat for each connected indoor unit.

## **START UP TESTING**

### **Preparation**

1. Double check that all wiring has been properly connected.
2. Check that tubing has been properly connected and ensure the suction and liquid side service valves are fully open.
3. Review remote control functions in the Operators manual.

**Note:** A wall control is optional MSWCH (243-7002). For the details of installation and operation, please refer to the manual to be placed with the wall control.

### **Operational Test**

**Note:** The cooling test may be performed if the outdoor temperature is between -0.4 °F to 118 °F.  
The heating test may be performed if the outdoor temperature is between -4 °F to 75 °F.

- 1) With the unit turned on, press the mode button and select "COOL" mode for all indoor units (see **Note** above). Allow 3 minutes for compressor delay timer to expire.
- 2) Press the "–" button until it reads 61 °F on all indoor units.
- 3) Operate indoor units for no less than 15 minutes in the cooling mode.
- 4) Press the "FAN" button to select high fan speed on all units.
- 5) After operating for several minutes, check for cool air flow. Outlet temperature should be 20 to 24 °F lower than ambient temperature. (If outlet temperature is out of range contact technical support).
- 6) If cooling mode is operating properly, check for proper heat operation.
- 7) Press the mode button to select "HEAT" (see **Note** above).
- 8) Press the "+" button until it reads 86 °F.
- 9) Allow approximately 5 minutes for compressor delay timer to expire before unit will operate.
- 10) The indoor fan will turn on and heat should be present.
- 11) If unit(s) does not perform as described, see the troubleshooting section.
- 12) All functions should be tested for operation, see Operation manual. Review remote control functions with owner.
- 13) Emergency operation button – test to confirm proper operation (see Operators manual).

### **Notes:**

1. Indoor fan will not turn off in the cooling mode.
2. Indoor fan will turn off in heating mode shortly after the set point has been satisfied.
3. Unit may require several minutes to confirm the condition of temperature set point and system functions.

**To adjust the differential (temperature between ON and OFF):**

STEP1: Turn the temperature from °F to °C on the remote by press the "mode" and "-" button with the remote in the OFF position.

STEP2: Within 30 seconds after the indoor unit is on the differential can be changed as below:

Alternately press the "+" then "-" button on the remote three times within 5 seconds while in the heating mode with set point set to 17°C. The indoor unit will reset the temperature and deliver 3°C (5.4°F differential) signal to the outdoor unit. At this time, 3°C will display on the indoor unit, LED of heating and operation would flash for three times.

Alternately press the "+" then "-" button on the remote three times within 5 seconds while in the heating mode with set point set to 18°C. The indoor unit will reset the temperature and deliver 2°C (3.6°F differential) signal to the outdoor unit. At this time, 2°C will display on the indoor unit, LED of heating and operation would flash for three times.

Alternately press the "+" then "-" button on the remote three times within 5 seconds while in the heating mode with set point set to 19°C. The indoor unit will reset the temperature and deliver 1°C (1.8°F differential) signal to the outdoor unit. At this time, 1°C will display on the indoor unit, LED of heating and operation would flash for three times.

Alternately press the "+" then "-" button on the remote three times within 5 seconds while in the heating mode with set point 20°C. The indoor unit will reset the temperature and deliver 0°C (0°F differential) signal to the outdoor unit. At this time, 0°C will display on the indoor unit, LED of heating and operation would flash for three times. This selection is not recommended.

The compressor delay will be activated when the set point temperature is satisfied.

To return the temperature to °F press the "mode" and "-" button simultaneously with the remote in the OFF position.

**Note:** The above differential set is only available for the WALL MOUNTED indoor units.

**We recommend having the differential set by professional personnel and setting the temperature at 1°C.**



# Technical Specifications for DUAL ZONE Outdoor Unit



Model Number		243-1008-C SMZ18H422Z0GB
Rated Voltage & Frequency and Phase		208/230V / 60Hz / 1PH
Min./ Max. Operating Voltage		187 / 253 VAC
Circuit Breaker Size (A)		25
Working Temperature Range (°F)		Cooling: -0.4 to 118; Heating: -4 to 75
Refrigerant (R410A) (oz.)		56.45
EER (W/W) / (Btu/h/W)		3.66 / 12.50
COP (W/W) / (Btu/h/W)		3.66 / 12.50
Rated Power Input (W)		2,800
Rated Current (A) / Starting Current (A)		12.42 / 5
Low Ambient Cooling Function		Yes
Sound Power Level dB(A)		63
Insulation / Moisture Protection		I / IPX4
Cooling	Rated Capacity (Btu/h)	18,000
	Capacity Invert Range (Btu/h)	6,998 - 21,001
	Cooling Power Input (W)	1,440
	Cooling Current Input (A)	6.26
	SEER	22
Heating	Rated Capacity (Btu/h)	19,000
	Capacity Invert Range (Btu/h)	7,000 - 22,600
	Heating Power Input (W)	1,520
	Heating Current Input (A)	6.61
	HSPF	10.5
Fan Motor	Fan Type	Axial-flow
	Fan Motor Type / Model	DC Motor / LW60M-ZL
	Motor Insulation Class / Safe Class	E / IPX4
	Output (W)	60
	Fan Speed (RPM)	630
Outdoor Fan	Fan Blade Diameter / Height (in)	20.47 / 2.28
	Air Flow Volume of Outdoor Unit (CFM)	1,883
Compressor	Model	QXA-B141zF030A
	TYPE / Brand	Inverter Rotary / Gree
	RLA	10.82
	Input (W)	1,440
	Crankcase Heater Input (W)	25 ± 7%
	Oil Type / Charge Volume (oz.)	RB68EP / 13.19
	Overload Protector	1NT11L-6233
Condenser	Number of Rows	2
	Fin pitch (in)	0.055
	Fin Type	Aluminum, Louvered
	Tube Outside Dia.(in)	0.276
	Coil Length x Height x Width (in)	33.50 x 25.98 x 1.50
	Number of circuits	2
	Defrosting Method	Automatic Defrosting
Dimensions & Weight	Chassis Electrical Heater Power Input (W)	96
	Unit Dimensions (W x H x D) (in)	37.60 x 27.56 x 15.59
	Packing Dimensions (W x H x D) (in)	40.51 x 29.53 x 18.03
Connection	Net / Gross Weight (lb)	114.64 / 124.56
	Flare Liquid line	1/4"
	Flare Suction line	3/8"
	Service Port Fitting	1/2" - 20 UNF
	Max. drive IDU Number	2
	Highest Pressure (psi)	638
	Lowest Pressure (psi)	377
	Design Length (ft)	32.8 (total) [*1]
	Max Line Set Vertical Height (between outdoor and indoor unit) (ft)	32.8
	Max Line Set Vertical Height (between indoor and indoor unit) (ft)	32.8
	Max Line Set Length (ft)	32.8 (for the farthest indoor unit)
	Max Line Set Length (ft)	65.6 (total)
	Charge over Design Length [*1] (oz. / ft)	0.215
	Wiring (Indoor to Outdoor)	4C- 16 AWG
	Wiring (Outdoor unit to Power Disconnect)	3C- 14 AWG

\*1. When the total length of liquid line is over 32.8 ft, the additional refrigerant charge is required.

# Technical Specifications for TRIPLE ZONE Outdoor Unit



Model Number		243-1009-C SMZ24H421Z0GB
Rated Voltage & Frequency and Phase		208/230V / 60Hz / 1PH
Min./ Max. Operating Voltage		187 / 253 VAC
Circuit Breaker Size (A)		30
Working Temperature Range (°F)		Cooling: -0.4 to 118; Heating: -4 to 75
Refrigerant (R410A) (oz.)		77.60
EER (W/W) / (Btu/h/W)		3.66 / 12.50
COP (W/W) / (Btu/h/W)		3.72 / 12.70
Rated Power Input (W)		3,600
Rated Current (A) / Starting Current (A)		15.97 / 5
Low Ambient Cooling Function		Yes
Sound Power Level dB(A)		69
Insulation / Moisture Protection		I / IPX4
Cooling	Rated Capacity (Btu/h)	24,000
	Capacity Invert Range (Btu/h)	7,500 - 33,000
	Cooling Power Input (W)	1,920
	Cooling Current Input (A)	8.35
	SEER	21
Heating	Rated Capacity (Btu/h)	26,000
	Capacity Invert Range (Btu/h)	7,500 – 27,978
	Heating Power Input (W)	2,050
	Heating Current Input (A)	8.9
	HSPF	10.5
Fan Motor	Fan Type	Axial-flow
	Fan Motor Type / Model	DC Motor / LW92K-ZL
	Motor Insulation Class / Safe Class	B or E / IPX4
	Output (W)	90
	Fan Speed (RPM)	800
Outdoor Fan	Fan Blade Diameter / Height (in)	21.65 / 2.60
	Air Flow Volume of Outdoor Unit (CFM)	2,354
Compressor	Model	QXAS-D23zX090B
	TYPE / Brand	Inverter Rotary / Gree
	RLA	15.82
	Input (W)	2,550
	Crankcase Heater Input (W)	40 ± 7%
	Oil Type / Charge Volume (oz.)	RB68EP / 32.12
	Overload Protector	1NT11L-6233
Condenser	Fin Type	Aluminum, Louvered
	Number of Rows / Fin Pitch (in) / Tube Outside Dia.(in)	2 / 0.055 / 0.276
	Coil Length x Height x Width (in)	38.67 x 29.45 x 1.50
	Number of circuits	3
	Defrosting Method	Automatic Defrosting
Dimensions & Weight	Chassis Electrical Heater Power Input (W)	160
	Unit Dimensions (W x H x D) (in)	38.58 x 31.10 x 16.81
	Packing Dimensions (W x H x D) (in)	42.64 x 33.66 x 19.21
	Net / Gross Weight (lb)	153.2 / 164.2
Connection	Flare Liquid line	1/4"
	Flare Suction line	3/8" [*1]
	Service Port Fitting	1/2" - 20 UNF
	Max. drive IDU Number	3
	Highest Pressure (psi) / Lowest Pressure (psi)	638 / 377
	Design Length (ft)	98.4 (total) [*2]
	Max Line Set Vertical Height (between outdoor and indoor unit) (ft)	32.8
	Max Line Set Vertical Height (between indoor and indoor unit) (ft)	32.8
	Max Line Set Length (ft)	65.6 (for the farthest indoor unit)
	Max Line Set Length (ft)	196.85 (total)
	Charge over Design Length [*2] (oz. / ft)	0.215
	Wiring (Indoor to Outdoor)	4C- 16 AWG
	Wiring (Outdoor unit to Power Disconnect)	3C- 12 AWG

\*1. 18,000 BTU indoor units use a 1/2" to 3/8" adaptor joint that is included with the unit.

\*2. When the total length of liquid line is over 98.4 ft, the additional refrigerant charge is required.

NOTE: Outdoor unit must connect to a minimum of TWO indoor units.

# Technical Specifications for QUAD ZONE Outdoor Unit



Model Number		243-1010-C SMZ30H421Z0GB
Rated Voltage & Frequency and Phase		208/230V / 60Hz / 1PH
Min./ Max. Operating Voltage		187 / 253 VAC
Circuit Breaker Size (A)		30
Working Temperature Range (°F)		Cooling: -0.4 to 118; Heating: -4 to 86
Refrigerant (R410A) (oz.)		98.76
EER (W/W) / (Btu/h/W)		3.66 / 12.50
COP (W/W) / (Btu/h/W)		3.74 / 12.76
Rated Power Input (W)		3,800
Rated Current (A)		16.86
Low Ambient Cooling Function		Yes
Sound Power Level dB(A)		69
Insulation / Moisture Protection		I / IPX4
Overload Protection		Yes
Cooling	Rated Capacity (Btu/h)	28,400
	Capacity Invert Range (Btu/h)	8,189 - 33,438
	Cooling Power Input (W)	2,270
	Cooling Current Input (A)	9.87
	SEER	21
Heating	Rated Capacity (Btu/h)	30,000
	Capacity Invert Range (Btu/h)	8,189 - 32,414
	Heating Power Input (W)	2,350
	Heating Current Input (A)	10.22
	HSPF	10.5
Fan Motor	Fan Type	Axial-flow
	Fan Motor Type / Model	DC Motor / SWZ150A
	Motor Insulation Class / Safe Class	E / IPX4
	Output (W) / Input (W)	100 / 150
	Full Load Amp. (FLA)	0.68
	Fan Speed (RPM)	850
Outdoor Fan	Fan Blade Diameter / Height (in)	21.65 / 4.72
	Air Flow Volume of Outdoor Unit (CFM)	2,354
Compressor	Model	QXAS-D32zX090A
	TYPE / Brand	Inverter Rotary / Gree
	RLA	13.9
	Input (W)	4,150
	Crankcase Heater Input (W)	40
	Oil Type / Charge Volume (oz.)	FV50S / 33.81
	Overload Protector	External 1NT11L-6233
Condenser	Fin Type	Aluminum, Louvered
	Number of Rows / Fin Pitch (in) / Tube Outside Dia.(in)	2 / 0.055 / 0.313
	Coil Length x Height x Width (in)	36.10 x 29.45 x 1.50
	Number of circuits	4
	Defrosting Method	Automatic Defrosting
	Chassis Electrical Heater Power Input (W)	96
Dimensions & Weight	Unit Dimensions (W x H x D) (in)	38.58 x 31.10 x 16.81
	Packing Dimensions (W x H x D) (in)	42.64 x 33.66 x 19.21
	Net / Gross Weight (lb)	154.3 / 169.8
Connection	Flare Liquid line	1/4"
	Flare Suction line	3/8" [*1]
	Service Port Fitting	1/2" - 20 UNF
	Max. drive IDU Number	4
	Highest Pressure (psi) / Lowest Pressure (psi)	624 / 377
	High Pressure Overload Protector (psi)	595
	Design Length (ft)	131.2 (total) [*2]
	Max Line Set Vertical Height (between outdoor and indoor unit) (ft)	49.2
	Max Line Set Vertical Height (between indoor and indoor unit) (ft)	24.6
	Max Line Set Length (ft)	82.0 (for the farthest indoor unit)
	Max Line Set Length (ft)	229.7 (total)
	Charge over Design Length [*2] (oz. / ft)	0.215
	Wiring (Indoor to Outdoor)	4C- 16 AWG
	Wiring (Outdoor unit to Power Disconnect)	3C- 12 AWG

\*1. 18,000 BTU indoor units use a 1/2" to 3/8" adaptor joint that is included with the unit.

\*2. When the total length of liquid line is over 131.2 ft, the additional refrigerant charge is required.

NOTE: Outdoor unit must connect to a minimum of TWO indoor units.

# Technical Specifications for Five Port Outdoor Unit



Model Number		243-1011-C SMZ42H421Z0GB
Rated Voltage & Frequency and Phase		208/230V / 60Hz / 1PH
Min./ Max. Operating Voltage		187 / 253 VAC
Circuit Breaker Size (A)		40
Working Temperature Range (°F)		Cooling: -0.4 to 118; Heating: -4 to 86
Refrigerant (R410A) (oz.)		128.75
EER (W/W) / (Btu/h/W)		3.06 / 10.43
COP (W/W) / (Btu/h/W)		3.61 / 12.33
Rated Power Input (W)		4,000
Low Ambient Cooling Function		Yes
Sound Power Level dB(A) (Max.)		71
Insulation / Moisture Protection		I / IP24
Overload Protection		Yes
Cooling	Rated Capacity (Btu/h)	39,000
	Capacity Invert Range (Btu/h)	8,871 - 40,944
	Cooling Power Input (W)	3,740
	Cooling Current Input (A)	16.5
	SEER	21
Heating	Rated Capacity (Btu/h)	45,000
	Capacity Invert Range (Btu/h)	8,871 - 46,062
	Heating Power Input (W)	3,650
	Heating Current Input (A)	16
	HSPF	10.2
Fan Motor	Fan Type	Axial-flow
	Fan Motor Type / Model	DC Motor / SWZ150B
	Motor Insulation Class / Safe Class	B / IP44
	Output (W) / Input (W)	170 / 240
	Full Load Amp. (FLA)	0.82
	Fan Speed (RPM)	880
Outdoor Fan	Fan Blade Diameter / Height (in)	22.44 / 5.98
	Air Flow Volume of Outdoor Unit (CFM)	4,531
Compressor	Model	QXAS-D32zX090A
	TYPE / Brand	Inverter Rotary / LANDA
	RLA	17.8
	Input (W)	4150
	Crankcase Heater Input (W)	40
	Oil Type / Charge Volume (oz.)	FV50S / 33.81
	Overload Protector	External 1NT11L-6233
Condenser	Fin Type	Aluminum, Louvered
	Number of Rows / Fin Pitch (in) / Tube Outside Dia.(in)	2 / 0.055 / 0.313
	Coil Length x Height x Width (in)	41.57 x 30.55 x 11.26
	Number of circuits	5
	Defrosting Method	Automatic Defrosting
	Chassis Electrical Heater Power Input (W)	96
Dimensions & Weight	Unit Dimensions (W x H x D) (in)	42.80 x 43.43 x 17.32
	Packing Dimensions (W x H x D) (in)	45.59 x 48.62 x 19.41
	Net / Gross Weight (lb)	198.4 / 216.1
Connection	Flare Liquid line	1/4" [*1]
	Flare Suction line	3/8"-9K / 12K BTU; [*2] [*3]
	Service Port Fitting	1/2" - 20 UNF
	Max. drive IDU Number	5
	Highest Pressure (psi) / Lowest Pressure (psi)	624 / 377
	High Pressure Overload Protector (psi)	595
	Design Length (ft)	131.2 (total) [*4]
	Max Line Set Vertical Height (between outdoor and indoor unit) (ft)	49.2
	Max Line Set Vertical Height (between indoor and indoor unit) (ft)	24.6
	Max Line Set Length (ft)	82.0 (for the farthest indoor unit)
	Max Line Set Length (ft)	246.1 (total)
	Charge over Design Length [*4] (oz. / ft)	0.215 (over 131.2')
	Wiring (Indoor to Outdoor)	4C- 16 AWG
	Wiring (Outdoor unit to Power Disconnect)	3C- 8 AWG

\*1. Using a 3/8" to 1/4" adaptor joint when connect this port to a 21K or 24K other type indoor units, like Cassette, Floor/Ceiling or Ducted.

\*2. Using a 1/2" to 3/8" adaptor joint when connect this port to a 12K, 18K indoor unit.

\*3. Using a 5/8" to 3/8" adaptor joint when connect this port to a 21K or 24K indoor unit.

\*4. When the total length of liquid line is over 131.2 ft, the additional refrigerant charge is required.

\*5. When the outdoor unit is above the indoor unit, the maximum vertical height should not exceed 49.2 ft.

NOTE: Outdoor unit must connect to a minimum of TWO indoor units.

## **Technical Specifications for WALL MOUNTED Indoor Units**

<b>Model Number</b>		<b>SHE9H4ZIGB</b>	<b>SHE12H4ZIGB</b>	<b>SHE18H4ZIGB</b>	<b>SHE24H4ZIGB</b>
Product Code		243-2007-E	243-2008-E	243-2009-E	243-2010-E
<b>Performance &amp; Electrical</b>	Rated Voltage	208/230V AC / 1 PH	208/230V AC / 1 PH	208/230V AC / 1 PH	208/230V AC / 1 PH
	Min. / Max. Operating Voltage	187 / 253 VAC	187 / 253 VAC	187 / 253 VAC	187 / 253 VAC
	Cooling Capacity (BTU/H) (Min. ~ Max.)	9000 (3500~9600)	12000 (3100~13000)	18000 (5970~22350)	21400 (9600~25000)
	Heating Capacity (BTU/H) (Min. ~ Max.)	9800 (2200~11000)	13000 (2400~14000)	19800 (4100~22000)	23000 (4300~26000)
	Indoor Air Circulation (CFM) (Turbo / H / M / L)	306/ 277 /253 /218	335/ 277/ 253 /218	500/ 459/ 383/ 324	589/ 471/ 412/ 353
	Dehumidifying Volume (pts/h)	1.69	2.96	3.8	5.28
<b>FAN Motor</b>	Model	FN20X-PG	FN20X-PG	FN20W-PG	FN60B-ZL
	Fan Motor Speed (RPM)-Cooling Fan Motor Speed (RPM)-Heating (Turbo / H / M / L)	1260/1100/950/750 1320/1200/1100/950	1330/1100/950/750 1350/1170/1050/950	1500/1200/1050/900 1500/1250/1150/1050	1500/1200/1050/900 1450/1150/1020/950
	Output of Fan Motor (W)	20	20	20	60
	Fan Motor Capacitor (ufd)	1	1	1.5	N / A
	Fan Motor RLA ( A)	0.2	0.2	0.32	0.24
	Fan Type	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Diameter-Length (in)	3 5/8 – 25 2/5	3 5/8 – 25 2/5	3 6/7 – 28	3 6/7 – 30 1/8
<b>Evaporator</b>	Evaporator	Aluminum fin - copper tube	Aluminum fin - copper tube	Aluminum fin - copper tube	Aluminum fin - copper tube
	Pipe Diameter (in)	0.276	0.276	0.276	0.276
	Row-Fin Gap (in)	2-0.06	2-0.06	2-0.06	2-0.06
	Coil length(L) x height(H) x coil width(L) (in)	27.2 x 10.5 x 1	27.2 x 10.5 x 1	28.1 x 12 x 1	30 1/8 x 13 1/2 x 1
<b>Design Data</b>	Swing Motor Model / Output (W) (for horizontal louver)	MP24AA / 2	MP24AA / 2	MP28VB / 2.5	MP35XX / 3
	Fuse(A)	3.15	3.15	3.15	3.15
	High Pressure (PSI)	550	550	550	550
	Low Pressure (PSI)	240	240	240	240
	Auto Restart	Yes	Yes	Yes	Yes
	*Remote	Yes	Yes	Yes	Yes
	Wall Control (optional)	Yes	Yes	Yes	Yes
	Sound Pressure Level dB(A) (Turbo / H / M / L)	42 / 38 / 35 / 32	44 / 39 / 36 / 33	49 / 44 / 40 / 35	53 / 45 / 41 / 37
	Sound Power Level dB(A) (Turbo / H / M / L)	52 / 48 / 45 / 42	54 / 49 / 46 / 43	59 / 54 / 50 / 45	63 / 55 / 51 / 47
	Flare Liquid line	1/4"	1/4"	1/4"	1/4"
	Flare Suction line	3/8"	3/8"	1/2"	5/8"
<b>Dimensions &amp; Weight</b>	Dimensions of Unit (W / D / H) (approx in)	33.3 / 7.1 / 10.8	33.3 / 7.1 / 10.8	37 / 7.9 / 11.7	39.6 / 8.6 / 12.4
	Dimension of Package (W / D / H) (approx in)	36.1 / 10.2 / 14.6	36.1 / 10.2 / 14.6	39.9 / 15.1 / 11.8	42.4 / 15.7 / 12.9
	Net / Gross Weight (lb)	21 / 25.4	21 / 25.4	24.3 / 30.9	29.8 / 37.5

## Technical Specifications for CONSOLE Indoor Units

Model Number		SMZC9H4ZIGX	SMZC12H4ZIGX	SMZC18H4ZIGX
Product Code		243-6001-E	243-6002-E	243-6003-E
Performance & Electrical	Rated Voltage	208/230V AC / 1 PH	208/230V AC / 1 PH	208/230V AC / 1 PH
	Control	Remote	Remote	Remote
	Setting Range	61°F to 86°F	61°F to 86°F	61°F to 86°F
	Cooling Capacity (BTU/H) (Min. ~ Max.)	9000 (3100~9600)	12000 (3100~13000)	18000 (6210~22000)
	Heating Capacity (BTU/H) (Min. ~ Max.)	9500 (2200~11000)	13000 (2400~14000)	19800 (4100~22000)
	Wire Size / No. of Conductors	14 AWG / 4C (Recommended)	14 AWG / 4C (Recommended)	14 AWG / 4C (Recommended)
	Indoor Air Circulation (CFM) (Turbo / H / MH / M / ML / L / Quiet)	383/ 330/ 312/ 282/ 253/ 218/ 188	441/ 383/ 353/ 324/ 294/ 265/ 206	494/ 471/ 424/ 383/ 341/ 312/ 241
	Dehumidifying Volume(pts/h)	1.69	2.96	3.8
FAN Motor	Fan Motor Speed (RPM)-Cooling Fan Motor Speed (RPM)-Heating (Turbo / H / MH / M / ML / L / Quiet)	650/560/530/480/430/370/320 650/560/530/480/430/370/320	750/650/600/550/500/450/350 750/650/600/550/500/450/350	840/800/720/650/580/530/410 900/840/760/690/620/570/450
	Output of Fan Motor (W)	30	30	30
	Fan Motor Capacitor (ufd)	N/A	N/A	N/A
	Fan Motor RLA ( A)	0.15	0.15	0.15
	Fan Type	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Diameter-Length (in)	3 1/7 – 14 4/7	3 1/7 – 14 4/7	3 1/7 – 14 4/7
Evaporator	Evaporator	Aluminum fin - copper tube	Aluminum fin - copper tube	Aluminum fin - copper tube
	Pipe Diameter (in)	1/4	1/4	1/4
	Row-Fin Gap (in)	2-0.05	2-0.05	2-0.05
	Coil length(L) x height(H) x coil width(W) (in)	20.1 x 15.6 x 0.9	20.1 x 15.6 x 0.9	20.1 x 15.6 x 0.9
Design Data	Swing Motor Model (for horizontal louver)	MP24EB	MP24EB	MP24EB
	Fuse(A)	3.15	3.15	3.15
	High Pressure (PSI)	550	550	550
	Low Pressure (PSI)	240	240	240
	Auto Restart	Yes	Yes	Yes
	Sound Pressure Level dB(A) (Turbo / H / MH / M / ML / L / Quiet)	40 / 38 / 36 / 33 / 30 / 26 / 25	43 / 40 / 38 / 37 / 35 / 32 / 27	48 / 46 / 44 / 41 / 37 / 35 / 33
	Sound Power Level dB(A) (Turbo / H / MH / M / ML / L / Quiet)	50 / 48 / 46 / 43 / 40 / 36 / 35	53 / 50 / 48 / 47 / 45 / 42 / 37	58 / 56 / 54 / 51 / 47 / 45 / 43
	Flare Liquid line	1/4"	1/4"	1/4"
	Flare Suction line	3/8"	3/8"	1/2"
	Drain Connection	1 1/9	1 1/9	1 1/9
Dimensions & Weight	Dimensions of Unit (W / D / H) (approx in)	27.6 / 8.5 / 23.6	27.6 / 8.5 / 23.6	27.6 / 8.5 / 23.6
	Dimension of Package (W / D / H) (approx in)	31 / 11.1 / 27.4	31 / 11.1 / 27.4	31 / 11.1 / 27.4
	Net / Gross Weight (lb)	33.1 / 39.7	33.1 / 39.7	33.1 / 39.7

## **Technical Specifications for CASSETTE Indoor Units**

<b>Model Number</b>		<b>SMZCA12H4ZIGX</b>	<b>SMZCA18H4ZIGX</b>	<b>SMZCA24H4ZIGX</b>
Product Code		243-6004-E	243-6005-E	243-6006-E
Performance & Electrical	Rated Voltage	208/230V AC / 1 PH	208/230V AC / 1 PH	208/230V AC / 1 PH
	Control	Remote (standard) or Wall (optional)	Remote (standard) or Wall (optional)	Remote (standard) or Wall (optional)
	Setting Range	61°F to 86°F	61°F to 86°F	61°F to 86°F
	Cooling Capacity (BTU/H)	12000	14400	22800
	Heating Capacity (BTU/H)	13000	16000	27400
	Wire Size / No. of Conductors	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)
	Indoor Air Circulation (CFM) (High Fan Speed)	353	353	694
	Dehumidifying Volume(pts/h)	2.96	3.8	5.28
FAN Motor	Fan Motor Speed (RPM) (SH / H / M / L / SL )	845 / 700 / 530 / 600 / 515	845 / 700 / 530 / 600 / 515	620 / 570 / 520 / 280
	Output of Fan Motor (W)	11	11	50
	Fan Motor Capacitor (ufd)	1	1	3
	Fan Motor RLA ( A )	0.23	0.23	0.43
	Fan Type	Centrifugal	Centrifugal	Centrifugal
	Diameter-Height (in)	11.14 – 5.83	11.14 – 5.83	17.72 – 4.41
Evaporator	Evaporator	Aluminum fin - Inner Grooved copper tube	Aluminum fin - Inner Grooved copper tube	Aluminum fin - Inner Grooved copper tube
	Pipe Diameter (in)	0.375	0.375	0.28
	Row-Fin Gap (in)	2-0.06	2-0.06	3-0.05
	Coil length(L) x height(H) x coil width(W) (in)	37.64 x 8.0 x 1.5	37.64 x 8.0 x 1.5	80.35 x 6.75 x 1.18
Design Data	Swing Motor Model (for horizontal louver)	MP35EA	MP35EA	MP35EA
	Fuse(A)	3.15	3.15	3.15
	High Pressure (PSI)	550	550	550
	Low Pressure (PSI)	240	240	240
	Auto Restart	Yes	Yes	Yes
	Condensate Pump	Yes	Yes	Yes
	Condensate Pump lift (ft)	2.3	2.3	3.6
	Anti-Mildew Protection	Yes	Yes	Yes
	Sound Pressure Level dB(A) (High Fan Speed)	46	46	39
	Sound Power Level dB(A) (High Fan Speed)	56	56	49
	Flare Liquid line	1/4"	1/4"	3/8"
	Flare Suction line	3/8"	1/2"	5/8"
Dimensions & Weight	Dimensions of Unit (W / D / H) (approx in)	22.4 / 22.4 / 9.1	22.4 / 22.4 / 9.1	33.1 / 33.1 / 9.45
	Dimension of Package (W / D / H) (approx in)	33.5 / 28.8 / 12.8	33.5 / 28.8 / 12.8	37.9 / 37.9 / 12.8
	Net / Gross Weight (lb)	39.7 / 50.7	39.7 / 50.7	61.7 / 77.2
	Dimensions of Panel (W / D / H) (approx in)	25.6 / 25.6 / 2.0	25.6 / 25.6 / 2.0	37.4 / 37.4 / 2.36
	Dimension of Panel Package (W / D / H) (approx in)	28.9 / 26.5 / 4.6	28.9 / 26.5 / 4.6	41.1 / 40.5 / 5.12
	Net / Gross Weight of Panel (lb)	5.5 / 8.1	5.5 / 8.1	14 / 22

## Technical Specifications for FLOOR / CEILING Indoor Units

Model Number		SMZFC9H4ZIGX	SMZFC12H4ZIGX	SMZFC18H4ZIGX	SMZFC24H4ZIGX
Product Code		243-6007-E	243-6008-E	243-6009-E	243-6010-E
Performance & Electrical	Rated Voltage	208/230V AC / 1 PH	208/230V AC / 1 PH	208/230V AC / 1 PH	208/230V AC / 1 PH
	Control	Remote (standard) or Wall (optional)	Remote (standard) or Wall (optional)	Remote (standard) or Wall (optional)	Remote (standard) or Wall (optional)
	Setting Range	61°F to 86°F	61°F to 86°F	61°F to 86°F	61°F to 86°F
	Cooling Capacity (BTU/H)	8500	11900	17000	22800
	Heating Capacity (BTU/H)	9500	13100	18700	27400
	Wire Size / No. of Conductors	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)
	Indoor Air Circulation (CFM) (H / M / L)	383 / 324 / 265	383 / 324 / 265	559 / 412 / 294	736 / 530 / 412
	Dehumidifying Volume(pts/h)	1.69	2.96	3.8	5.28
FAN Motor	Motor Model	FG10A	FG10A	FG20E	FG50A
	Fan Motor Speed (RPM) (H / M / L)	690 / 610 / 480	690 / 610 / 480	985 / 800 / 680	985 / 800 / 680
	Output of Fan Motor (W)	15	15	20	40
	Fan Motor Capacitor (ufd)	1	1	2.5	2
	Fan Motor RLA ( A)	0.28	0.28	0.56	0.63
	Fan Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Diameter-Height (in)	5.49 – 4.13	5.49 – 4.13	5.49 – 4.13	5.49 – 4.13
Evaporator	Evaporator	Aluminum fin - Inner Grooved copper tube	Aluminum fin - Inner Grooved copper tube	Aluminum fin - Inner Grooved copper tube	Aluminum fin - Inner Grooved copper tube
	Pipe Diameter (in)	0.28	0.28	0.28	0.28
	Row-Fin Gap (in)	2-0.06	2-0.06	2-0.06	2-0.06
	Coil length(L) x height(H) x coil width(W) (in)	31.7 x 12.0 x 1.0	31.7 x 12.0 x 1.0	36.2 x 12.0 x 2.0	36.2 x 12.0 x 2.0
Design Data	Swing Motor Model (for horizontal louver)	MP35CG	MP35CG	MP35CG	MP35CG
	Fuse(A)	3.15	3.15	3.15	3.15
	High Pressure (PSI)	550	550	550	550
	Low Pressure (PSI)	240	240	240	240
	Auto Restart	Yes	Yes	Yes	Yes
	Anti-Mildew Protection	Yes	Yes	Yes	Yes
	Sound Pressure Level dB(A) (H / L)	40 / 38 / 36	40 / 38 / 36	45 / 42 / 40	48 / 46 / 44
	Sound Power Level dB(A) (H / L)	50 / 48 / 46	50 / 48 / 46	55 / 52 / 50	58 / 56 / 54
	Flare Liquid line	1/4"	1/4"	1/4"	3/8"
	Flare Suction line	3/8"	3/8"	1/2"	5/8"
Dimensions & Weight	Dimensions of Unit (W / D / H) (approx in)	48.0 / 27.6 / 8.9	48.0 / 27.6 / 8.9	48.0 / 27.6 / 8.9	48.0 / 27.6 / 8.9
	Dimension of Package (W / D / H) (approx in)	52.9 / 32.4 / 12.4	52.9 / 32.4 / 12.4	52.9 / 32.4 / 12.4	52.9 / 32.4 / 12.4
	Net / Gross Weight (lb)	88.2 / 110.2	88.2 / 110.2	88.2 / 110.2	99.2 / 119.1



## Technical Specifications for DUCTED Indoor Units (9K, 12K, 18K)

Model Number		SMZD9H4ZIGX	SMZD12H4ZIGX	SMZD18H4ZIGX
Product Code		243-6011-E	243-6012-E	243-6013-E
Performance & Electrical	Rated Voltage	208/230V AC / 1 PH	208/230V AC / 1 PH	208/230V AC / 1 PH
	Control	Wall (standard) or Remote(optional)	Wall (standard) or Remote(optional)	Wall (standard) or Remote(optional)
	Setting Range	61°F to 86°F	61°F to 86°F	61°F to 86°F
	Cooling Capacity (BTU/H)	8500	11900	15300
	Heating Capacity (BTU/H)	9500	13100	18700
	Wire Size / No. of Conductors	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)
	Indoor Air Circulation (CFM) (High Fan Speed)	265	294	412
	Dehumidifying Volume(pts/h)	1.69	2.96	3.8
FAN Motor	Fan Model	FG30A	FG40A	FG60A
	Fan Motor Speed (SH / H / M / L)	1230 / 970 / 760 / 640	1130 / 960 / 830 / 700	1000 / 920 / 780 / 720
	Output of Fan Motor (W)	40	49	75
	Fan Motor Capacitor (ufd)	1.5	3	3
	Fan Motor RLA ( A )	0.35	0.35	0.43
	Fan Type	Centrifugal	Centrifugal	Centrifugal
	Fan Quantity	2	2	3
	Diameter-Length (in)	5.49 – 5.30	5.49 – 5.30	5.49 – 5.30
Evaporator	Evaporator	Aluminum fin - Inner Grooved copper tube	Aluminum fin - Inner Grooved copper tube	Aluminum fin - Inner Grooved copper tube
	Pipe Diameter (in)	0.28	0.28	0.28
	Row-Fin Gap (in)	2-0.06	3-0.06	3-0.06
	Coil length(L) x height(H) x coil width(W) (in)	20.7 x 8.3 x 1.0	20.7 x 8.3 x 1.0	28.5 x 8.3 x 1.5
Design Data	Fuse(A)	3.15	3.15	3.15
	High Pressure (PSI)	550	550	550
	Low Pressure (PSI)	240	240	240
	Auto Restart	Yes	Yes	Yes
	Condensate Pump	Yes	Yes	Yes
	Condensate Pump lift (ft)	3.6	3.6	3.6
	Sound Pressure Level dB(A) (H / L)	37 / 31	39 / 32	41 / 33
	Sound Power Level dB(A) (H / L)	47 / 41	49 / 42	51 / 43
	Flare Liquid line	1/4"	1/4"	1/4"
	Flare Suction line	3/8"	3/8"	1/2"
Dimensions & Weight	Dimensions of Unit (W / D / H) (approx in)	27.6 / 24.2 / 7.9	27.6 / 24.2 / 7.9	35.4 / 24.2 / 7.9
	Dimension of Package (W / D / H) (approx in)	35.2 / 29.3 / 12.0	35.2 / 29.3 / 12.0	44.2 / 29.3 / 12.0
	Net / Gross Weight (lb)	48.51 / 59.54	50.72 / 63.95	59.54 / 79.38

## Technical Specifications for DUCTED Indoor Units (21K, 24K)

Model Number		SMZD21H4ZIGX	SMZD24H4ZIGX
Product Code		243-6014-E	243-6015-E
Performance & Electrical	Rated Voltage	208/230V AC / 1 PH	208/230V AC / 1 PH
	Control	Wall (standard) or Remote(optional)	Wall (standard) or Remote(optional)
	Setting Range	61°F to 86°F	61°F to 86°F
	Cooling Capacity (BTU/H)	20400	23800
	Heating Capacity (BTU/H)	22600	27400
	Wire Size / No. of Conductors	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)
	Indoor Air Circulation (CFM) (High Fan Speed)	589	589
	Dehumidifying Volume(pts/h)	4.23	5.28
FAN Motor	Fan Model	FG20E	FG20E
	Fan Motor Speed (SH / H / M / L)	1160 / 985 / 800 / 680	1160 / 985 / 800 / 680
	Output of Fan Motor (W)	22.5	22.5
	Fan Motor Capacitor (ufd)	3	3
	Fan Motor RLA ( A)	0.54	0.54
	Fan Type	Centrifugal	Centrifugal
	Fan Quantity	4	4
	Diameter-Length (in)	5.49 – 5.30	5.49 – 5.30
Evaporator	Evaporator	Aluminum fin - Inner Grooved copper tube	Aluminum fin - Inner Grooved copper tube
	Pipe Diameter (in)	0.28	0.28
	Row-Fin Gap (in)	3-0.06	3-0.06
	Coil length(L) x height(H) x coil width(W) (in)	36.4 x 8.3 x 1.5	36.4 x 8.3 x 1.5
Design Data	Fuse(A)	3.15	3.15
	High Pressure (PSI)	550	550
	Low Pressure (PSI)	240	240
	Auto Restart	Yes	Yes
	Condensate Pump	Yes	Yes
	Condensate Pump lift (ft)	3.6	3.6
	Sound Pressure Level dB(A) (H / L)	42 / 34	42 / 34
	Sound Power Level dB(A) (H / L)	52 / 44	52 / 44
	Flare Liquid line	3/8"	3/8 "
	Flare Suction line	5/8"	5/8"
Dimensions & Weight	Dimensions of Unit (W / D / H) (approx in)	43.3 / 24.2 / 7.9	43.3 / 24.2 / 7.9
	Dimension of Package (W / D / H) (approx in)	52.1 / 29.3 / 12.0	52.1 / 29.3 / 12.0
	Net / Gross Weight (lb)	68.36 / 90.41	68.36 / 90.41

## **TROUBLESHOOTING**

**The first step in troubleshooting is to disconnect power for 3 minutes to allow the unit to reset.  
If this does not rectify the problem proceed with the troubleshooting chart below.**

<b>Problem</b>	<b>Troubleshooting</b>
The unit does not run.	<ul style="list-style-type: none"> <li>• Is the power off?</li> <li>• Is the circuit protection device tripped?</li> <li>• Is voltage too high or low? (Tested by a professional)</li> <li>• Is the Timer on?</li> <li>• A 3 minute delay occurs before each compressor start.</li> </ul>
Cooling and or Heating efficiency is not good.	<ul style="list-style-type: none"> <li>• Is temperature setting correct?</li> <li>• Are the inlet or outlet vents obstructed?</li> <li>• Is the filter clean?</li> <li>• Are windows and doors closed?</li> <li>• Is fan set to low speed?</li> <li>• Is there a heat source in the room?</li> </ul>
Wireless remote control is not working. (See Note 2)	<ul style="list-style-type: none"> <li>• Reset unit. Disconnect main power for 30 seconds then reapply.</li> <li>• Is it within receiving range? Is it obstructed?</li> <li>• Replace the batteries.</li> <li>• Is remote control damaged?</li> </ul>
Water leaking into room.	<ul style="list-style-type: none"> <li>• The air humidity is excessively high. Check to see if all windows and doors are closed.</li> <li>• Call service Tech if not corrected by the above action.</li> </ul>
Water leakage in outdoor unit.	<ul style="list-style-type: none"> <li>• When the unit is running in Auto Defrosting mode, ice will thaw and drip into pan.</li> <li>• When the unit is running in HEAT mode, the water adhered to the condenser coil drains into pan.</li> </ul>
Noise from indoor unit emitted.	<ul style="list-style-type: none"> <li>• When defrosting is started or stopped, it will make a sound. This is due to the refrigerant flow reversing directions.</li> <li>• Normal refrigerant flowing in unit.</li> </ul>

**Notes:**

- 1) If E7 error code occurs, see the AUTO mode section in Operators Manual on page 7 (mode conflict).
- 2) An audible beep will be heard, when a button is pressed, if the remote control is communicating with the receiver.

This air conditioning system has been provided with built in self diagnostic error codes. Please refer to the following table for error code definitions:

## INDOOR UNIT ERROR CODES

Malfunction Name	Display	Running LED	Cooling LED	Heating LED
Short/Open Circuit of the Liquid Valve Temp. Sensor	b5		19 Flashes	
Short/Open Circuit of the Suction Valve Temp. Sensor	b7		22 Flashes	
Jumper Failure	C5	15 Flashes		
Trial Operation for communication / Expansion Valve	dd	Flashing	Flashing	Flashing
Incorrect Communication Wiring or Expansion Valve Failure	dn			
High Pressure Protection	E1	1 Flash		
Anti-Freezing Protection	E2	2 Flashes		
Exhaust Protection (Temperature Overheat)	E4	4 Flashes		
Over Current Protection	E5	5 Flashes		
Communication Malfunction	E6	6 Flashes		
Mode Conflict	E7	7 Flashes		
Overload Protection	E8	8 Flashes		
Condensate Water Full of Indoor Unit	E9		Flashing	Flashing
EEPROM malfunction	EE			15 Flashes
Frequency Drop for Module current protection - phase current	En	3 Flashes	3 Flashes	3 Flashes
Frequency Drop for Module temperature protection	EU		6 Flashes	6 Flashes
Indoor Ambient Sensor Failure	F1		1 Flash	
Indoor Tube Sensor Failure	F2		2 Flashes	
Outdoor Ambient Sensor Failure	F3		3 Flashes	
Outdoor Tube Sensor Failure	F4		4 Flashes	
Outdoor Exhaust Sensor Failure	F5		5 Flashes	
Frequency Drop for Overload	F6		6 Flashes	
Oil Return in Cooling Mode	F7		7 Flashes	
Frequency Drop for Over Current Protection	F8		8 Flashes	
Frequency Drop for Exhaust Protection	F9		9 Flashes	
Refrigerant Recovery Mode	Fo	Flashing	Flashing	
Frequency Drop for Anti-Freezing Protection	FH		2 Flashes	2 Flashes
Defrost or Oil Return Heat Mode	H1			1 Flash
Compressor Overload Protection	H3			3 Flashes
IPM Protection	H5			5 Flashes
Indoor Fan Motor Failure	H6	11 Flashes		
Compressor Desynchronizing	H7			7 Flashes
PFC Over-Current Malfunction	HC			6 Flashes
Outdoor Fan Motor Failure	L3			
High Supply Voltage Protection	L9	20 Flashes		
Startup Failure	Lc			11 Flashes
Compressor Phase Failure / Reverse Protection	Ld			
Incorrect Indoor Unit Model	LP			
PFC Sensor Malfunction	oE			
Phase Over-Current Protection	P5			15 Flashes
IPM Temperature Sensor Failure	P7			18 Flashes
IPM Overheat Protection	P8			19 Flashes
Current Sensor Error	Pc	3 Flashes	3 Flashes	3 Flashes
High Voltage Protection of PN	PH		11 Flashes	
Low Voltage Protection of PN	PL			21 Flashes
Capacitor Charging Circuit Error	PU			17 Flashes
Compress Phase Circuit Detection Error	U1			12 Flashes
PN Voltage Drop Protection	U3			20 Flashes
AC Current Detect Circuit Malfunction	U5		13 Flashes	
Indoor fan Motor Zero-cross Detecting Error	U8	17 Flashes		

## Terminal Readings on Indoor Unit

The reading on terminals N(1) and 3 of indoor unit are the same as the outdoor unit which shows the power supply 208V – 230V.  
The terminal 2 is for signal, the reading between N(1) and 2 is fluctuating.

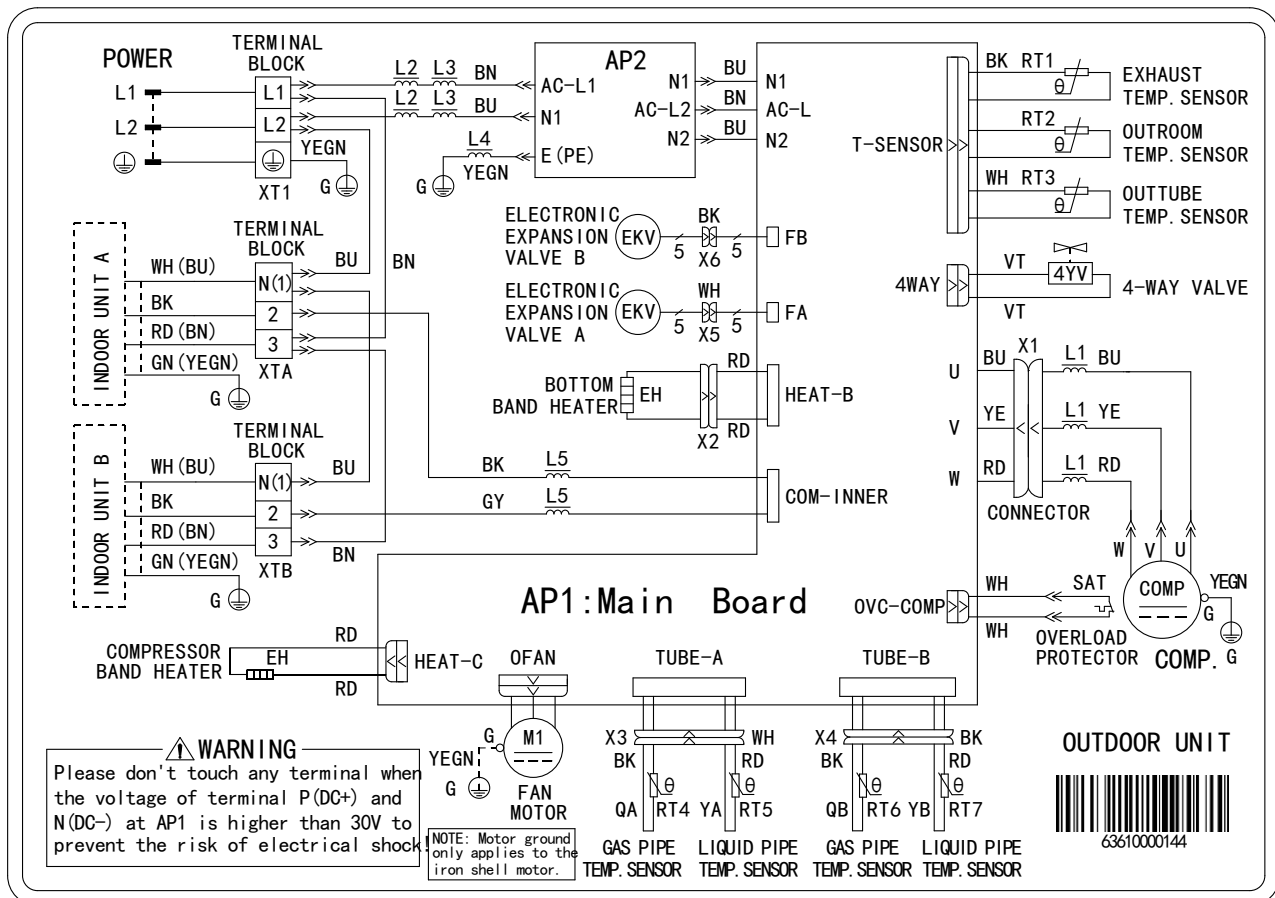
N(1)	2	3	
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## OUTDOOR ELECTRICAL SCHEMATICS

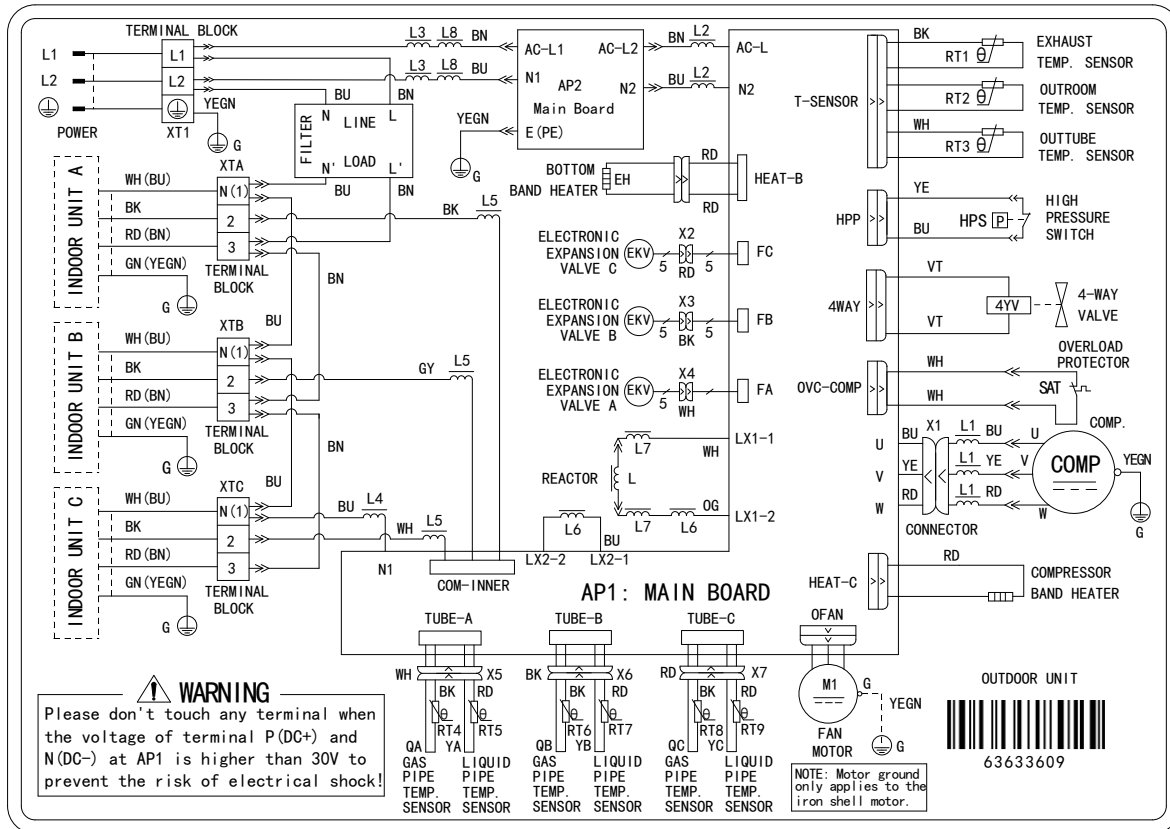
### Symbol Explanation

Symbol	Color	Symbol	Color	Symbol	Parts Name
WH	WHITE	GN	GREEN	SAT	OVERLOAD
YE	YELLOW	BN	BROWN	COMP	COMPRESSOR
RD	RED	BU	BLUE		PROTECTIVE EARTH
YEGN	YELLOW & GREEN	BK	BLACK	/	/
VT	VIOLET	OG	ORANGE	/	/

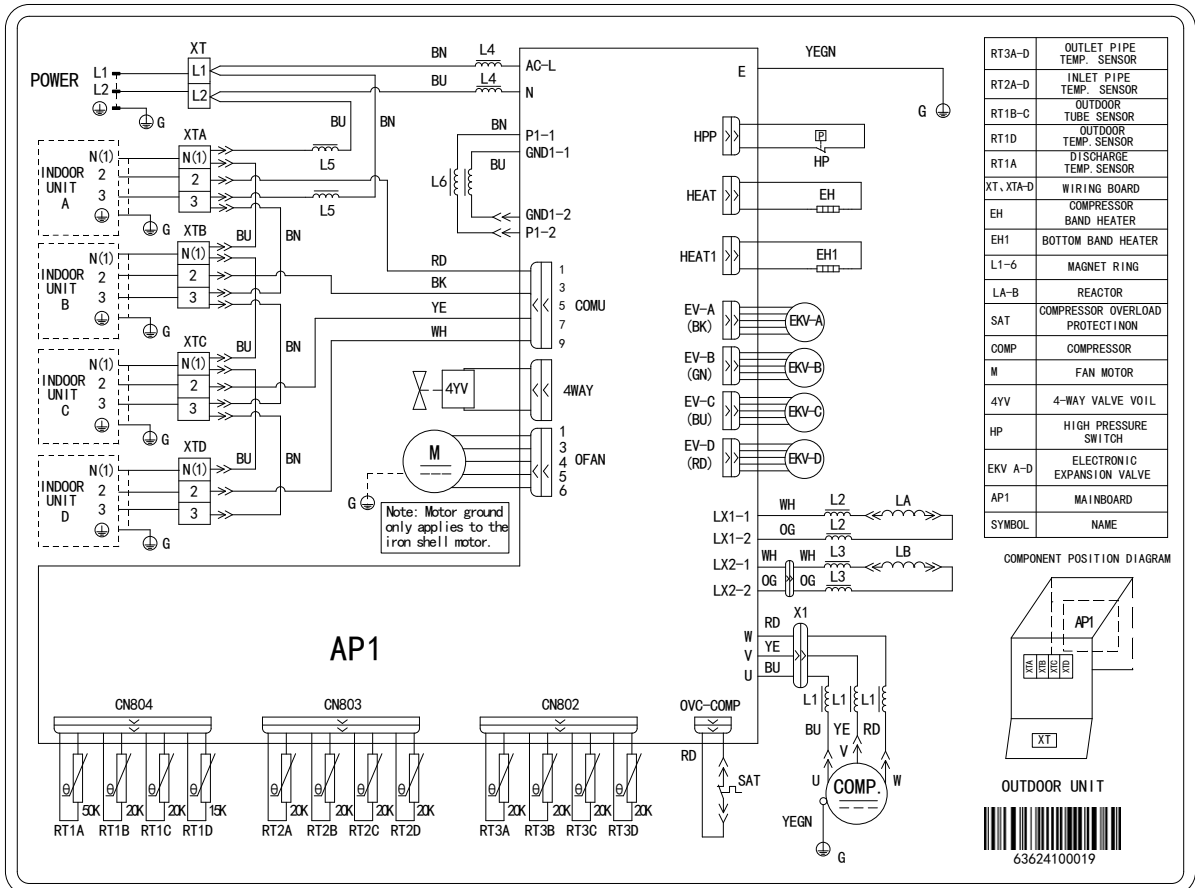
### Wiring Diagram for SMZ18H422ZOGB (Dual Zone)



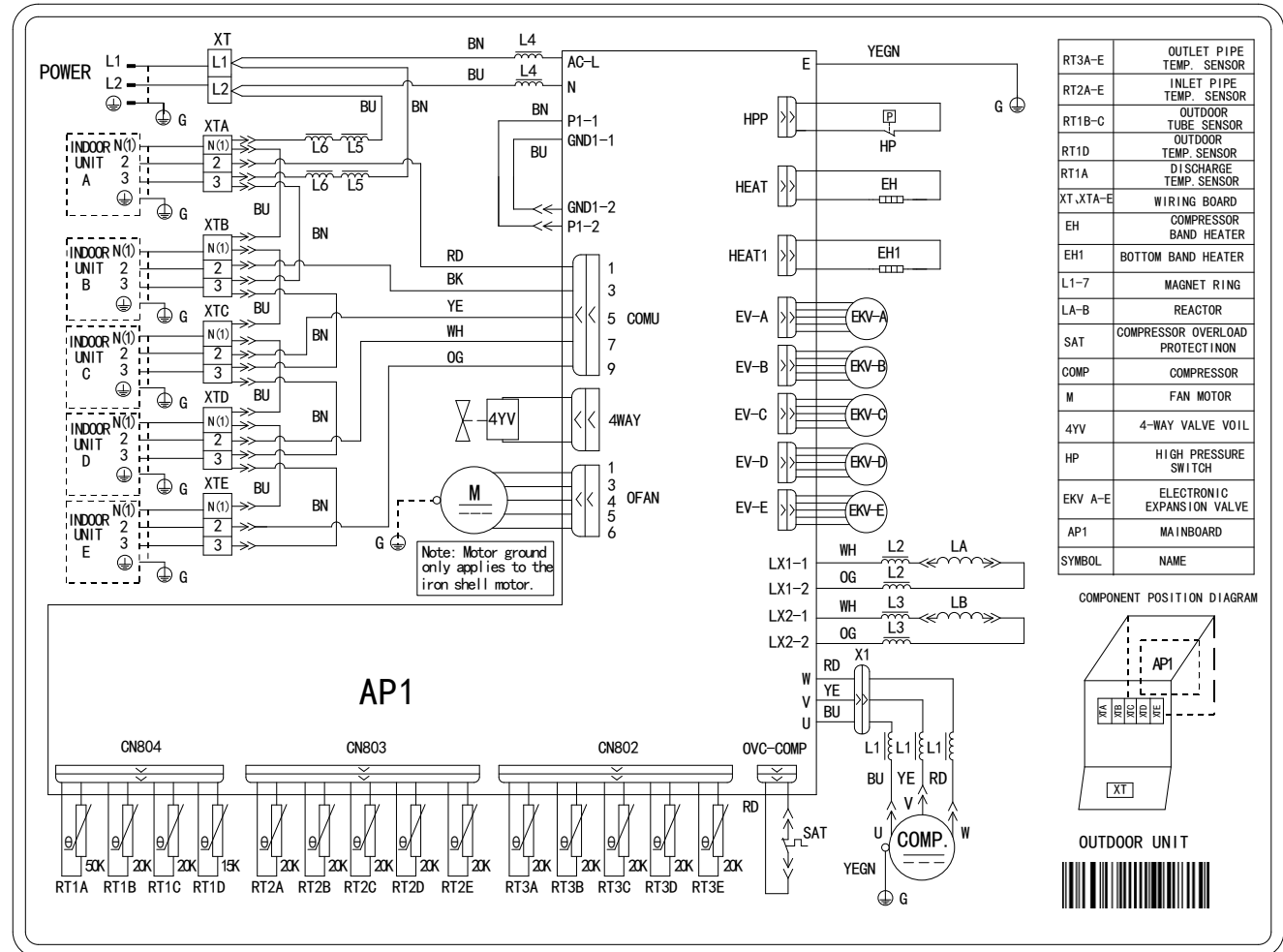
## Wiring Diagram for SMZ24H421ZOGB (Triple Zone)



## Wiring Diagram for SMZ30H421ZOGB (Quad Zone)



## Wiring Diagram for SMZ42H421ZGB (Five Port)



## **FLASH CODES / ERROR CODES ON OUTDOOR PC BOARD**

There is not a flash located on the outdoor main board for 18K and 24K units. Please check the error codes displayed on the indoor units.

### **Error Code Label on SMZ18H422ZOGB (Dual Zone) and SMZ24H421ZOGB (Triple Zone)**

Name of malfunction	Display of double eight code	Display of lamp		
		Running lamp/Power lamp	Cooling lamp	Heating lamp
Fault in input power zero	U8	blink 17 time		
Jumper cap malfunction protection	C5	blink 15 time		
No feedback of indoor fan motor	H6	blink 11 time		
Indoor ambient sensor open or short circuit	F1		blink 1 time	
Indoor tube sensor open or short circuit	F2		blink 2 time	
Inlet tube sensor malfunction	b5		blink 19 time	
Outlet tube sensor malfunction	b7		blink 22 time	
IPM sensor circuit malfunction	P7			blink 18 time
Outdoor ambient sensor open or short circuit	F3		blink 3 time	
Outdoor tube sensor open or short circuit	F4		blink 4 time	
Exhaust sensor open or short circuit	F5		blink 5 time	
Communication failure between indoor unit and outdoor unit	E6	blink 6 time		
Compressor phase current detection circuit malfunction	U1			blink 12 time
Compressor demagnetization protection	HE			blink 14 time
PN voltage drop protection	U3			blink 20 time
IPM high temperature protection	P8			blink 19 time
Capacitor charge malfunction	PU			blink 17 time
Refrigerant system high pressure protection	E1	blink 1 time		
Compressor over load protection	H3			blink 3 time
Loading EEPROM malfunction	EE			blink 15 time
Wrong connection or expansion valve malfunction(result )	dn			
AC current detect circuit malfunction	U5		blink 13 time	
Outdoor DC fan motor malfunction	L3	blink 23 time		
Wrong connection or expansion valve malfunction(checking)	dd			
Recovery refrigerant mode	Fo	blink 1 time	blink 1 time	
Startup failure	Lc			blink 11 time
Compressor exhaust high temperature protection	E4	blink 4 time		
Anti-high temperature protection	E8	blink 8 time		
AC over-current protection	E5	blink 5 time		
Over compressor phase current protection	P5			blink 15 time
Compressor loss step protection	H7			blink 7 time
Compressor loss of phase protection	Ld			
IPM protection	H5			blink 5 time
Low PN voltage protection	PL			blink 21 time
Over voltage protection for PN	PH		blink 11 time	
PFC protection	HC			blink 6 time
4-way valve reversal abnormal	U7		blink 20 time	
Mode conflict	E7	blink 7 time		



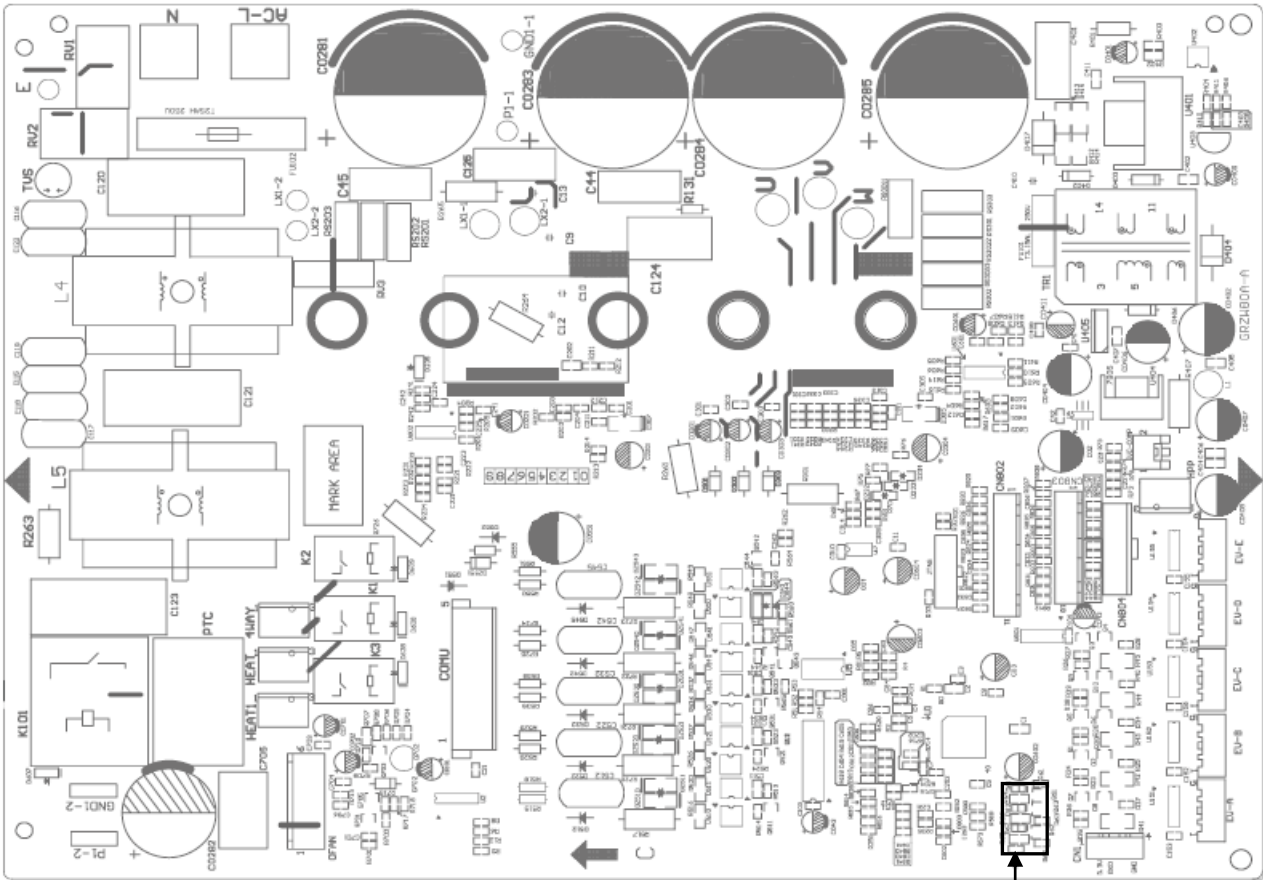
There are three flashes for error codes which are located on the outdoor main board for 30K and 42K units. When several malfunctions occur at the same time, they will be displayed in circulation and every malfunction is displayed for 5 seconds.

#### Error Codes Label on SMZ30H421ZOGB (Quad Zone) and SMZ42H421ZOGB (Five Port)

Name of malfunction	Indoor unit display	Outdoor unit control board LED status		
		Yellow	Green	Red
<b>Compressor runs</b>		flash once		
Defrost	H1	flash twice		
Anti-freezing protection	E2	flash 3 times		
IPM protection	H5	flash 4 times		
AC over-current protection	E5	flash 5 times		
Over-burden protection	E8	flash 6 times		
Compressor exhaust high temperature protection	E4	flash 7 times		
Compressor overload protection	H3	flash 8 times		
Power protection	L9	flash 9 times		
EEPROM reads and write protection		flash 11 times		
Low PN voltage protection	PL	flash 12 times		
Over voltage protection for PN	PH	flash 13 times		
PFC protection	HC	flash 14 times		
PFC module temperature protection	oE	flash 15 times		
Low pressure protection	E3	flash 16 times		
High pressure protection	E1	flash 17 times		
Limit/decline frequency (electric current)				flash once
Frequency limit (exhaust)				flash twice
Frequency limit (Over-burden)				flash 3 times
Outdoor tube sensor malfunction	F4			flash 5 times
Outdoor ambient sensor malfunction	F3			flash 6 times
Exhaust sensor malfunction	F5			flash 7 times
Attain the temperature of switch on				flash 8 times
Frequency limit(power)				flash 13 times
Outdoor fan malfunction	L3			flash 14 times
Frequency limit (PFC module temperature)				flash 15 times
PFC module sensor malfunction	oE			flash 16 times
Liquid pipe temperature sensor malfunction of A				flash 17 times
Gas pipe temperature sensor malfunction of A				flash 18 times
Liquid pipe temperature sensor malfunction of B				flash 19 times
Gas pipe temperature sensor malfunction of B				flash 20 times
Liquid pipe temperature sensor malfunction of C				flash 21 times
Gas pipe temperature sensor malfunction of C				flash 22 times
Liquid pipe temperature sensor malfunction of D				flash 23 times
Gas pipe temperature sensor malfunction of D				flash 24 times
Liquid pipe temperature sensor malfunction of E				flash 25 times
Gas pipe temperature sensor malfunction of E				flash 26 times
Exit of the condenser tube sensor malfunction				flash 27 times
Correspondence is normal			flash n times (n=indoor unit NO.)	
Communication failure	E6		Often bright	
Indoor ambient sensor malfunction	F1			
Indoor evaporate sensor malfunction	F2			
Mode conflict	E7			
Accept fluorine mode	Fo			
Jumper cap malfunction protection	C5			

Remove the top cover of the outdoor unit to gain access to the main board in the control box.

### PCB Top View



Flashes Location

## **WARRANTY**

**INTERNATIONAL REFRIGERATION PRODUCTS** warrants the accompanying split air conditioner or heat pump system to be free of defects in material and workmanship for the applications specified in the operation manual and installation manual for a period of one (1) year on parts and five (5) years on compressor, valid from the date of original retail purchase in the United States or Canada. **Labor is not covered under warranty.**

If the unit exhibits a defect in normal use and is determined to be within the warranty period, **INTERNATIONAL REFRIGERATION PRODUCTS** will, at its discretion, either repair or replace the unit free of charge within a reasonable time after the unit is returned.

This warranty DOES NOT cover:

- Damage, accidental or otherwise, to the unit while in possession of the consumer that is not a result of a defect in material in workmanship.
- Damage caused by consumer misuse, tampering, or failure to follow all care and maintenance instructions in the manuals.
- Damage to the finish of the case or other parts caused by water.
- Damage caused by repairs or alterations to the unit by anyone other than a qualified technician.
- Filter.
- Freight and Insurance cost for the warranty service.

***Warranty Activation Card must be completed and sent in to activate the warranty for the accompanying unit.***

## **TECHNICAL SUPPORT**

**If you need technical support please call 215-750-9876 M-F 8:00am to 4:30pm ET.  
When calling, please have your unit model numbers and serial numbers available.**

**Electronic warranty activation and product information [www.irproducts.biz](http://www.irproducts.biz) .**

**International Refrigeration Products Inc., 1035 Wheeler Way  
Langhorne, PA 19047**