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INSTALLATION INSTRUCTIONS

MLA, MLB and MPB MULTI-ZONE OUTDOOR UNITS

MULTI-ZONE MINI-SPLIT OUTDOOR UNITS
(208/230V)
507549-07
6/2020
Supersedes 507549-06

**THIS MANUAL MUST BE LEFT WITH THE OWNER
FOR FUTURE REFERENCE**

! WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life.

Installation and service must be performed by a licensed professional HVAC installer (or equivalent) or a service agency.

! WARNING

The clean Air Act of 1990 bans the intentional venting of refrigerant (CFCs, HCFCs, and HFCs) as of July, 1992. Approved methods of recovery, recycling or reclaiming must be followed. Fines and/or incarceration may be levied for non-compliance.

! CAUTION

As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

General

Refer to the Product Specifications bulletin (EHB) for more product information.

These instructions are intended as a general guide and do not supersede local or national codes in any way. Authorities having jurisdiction should be consulted before installation.

The MWMA, MWMB, M22A, M33A, M33B, MMDA, MMDB, MCFA, MCFB and MFMA indoor units are matched with a two to five port multi-zone outdoor heat pump unit to create a mini-split system that uses HFC-410A refrigerant.

NOTE: Outdoor units can only be installed in an unenclosed outdoor environment.




Included Parts

Check the components for shipping damage. If you find any damage, immediately contact the last carrier.

Package contains the following:

1 - Assembled Indoor Unit (assembled indoor unit will include accessories specific to the unit. See each indoor unit's section within this manual for accessories included with that unit).

1 - Assembled Outdoor Unit and the following items:

Parts	Figure	Qty	Parts	Figure	Qty	Parts	Figure	Qty
Drain connector		1	Installation Instruction		1 ea.	Seal Ring		1

Line Set Adapters

MPB018S4M-*P MLA018S4M-*P 2 adapt. – 3/8" to 1/2"	MPB030S4M-*P MLA030S4M-*P 3 adapt. – 3/8" to 1/2"	MPB036S4M-*P MLB036S4M-*P 3 adapt. – 3/8" to 1/2" 1 adapt. – 1/2" to 3/8"	MPB048S4M-*P MLB048S4M-*P 3 adapt. – 3/8" to 1/2" 2 adapt. – 1/2" to 3/8"
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Compatible Indoor Units

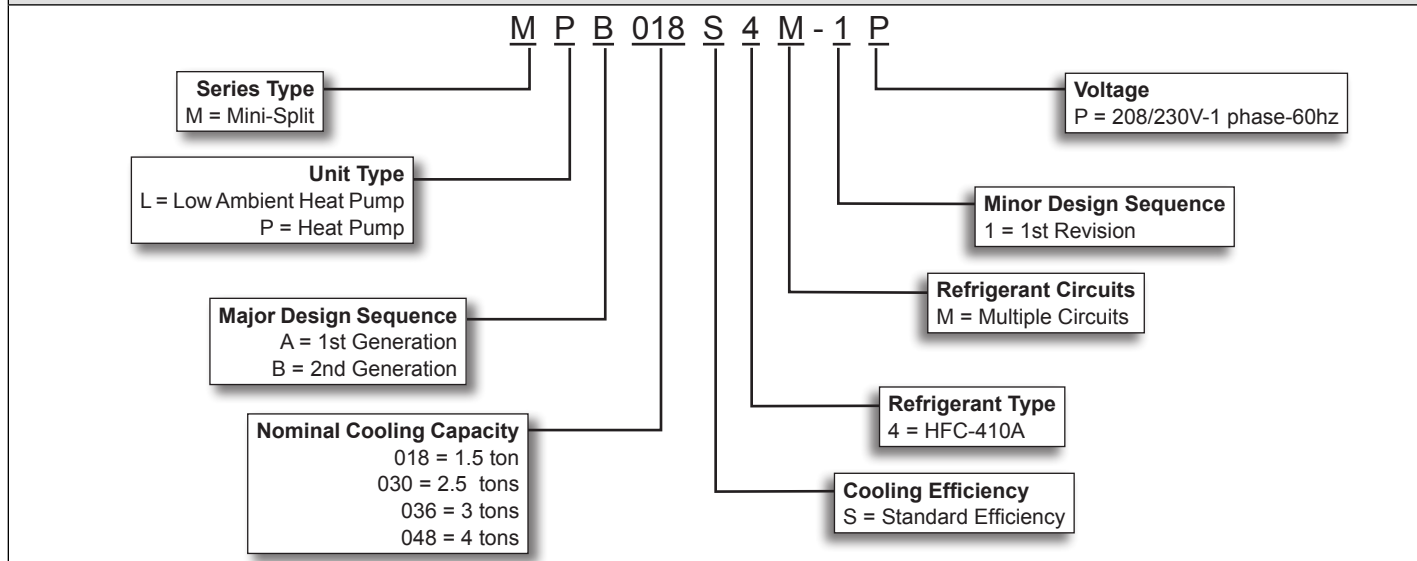
Indoor Unit	Voltage	Indoor Unit	Voltage
MWMA009S4-*P or MWMB009S4-*P	208/230V	M33A024S4-*P ¹ or M33B024S4-*P ¹	208/230V
MWMA012S4-*P or MWMB012S4-*P	208/230V	MMDA009S4-*P and MMDB009S4-*P ²	208/230V
MWMA018S4-*P or MWMB018S4-*P	208/230V	MMDA012S4-*P and MMDB012S4-*P ²	208/230V
MWMA024S4-*P ¹ or MWMB024S4-*P ¹	208/230V	MMDA018S4-*P and MMDB018S4-*P ²	208/230V
M22A009S4-*P	208/230V	MMDA024S4-*P ¹ and MMDB024S4-*P ^{1 2}	208/230V
M22A012S4-*P	208/230V	MCFB018S4-*P	208/230V
M22A018S4-*P	208/230V	MFMA012S4-*P and MCFA024S4-*P ¹	208/230V

¹The 24,000 Btu indoor unit is only allowed to be connected to MPB036S4M, MPB048S4M, MLA036S4M and MLB048S4M multi-zone outdoor units.

²MMDB indoor units are only compatible with MLA, MLB and MPB outdoor units.

Only second generation (-2P) indoor units will work with MLA multi-zone outdoor units.

Model Number Identification



Typical Multi-Zone System Components

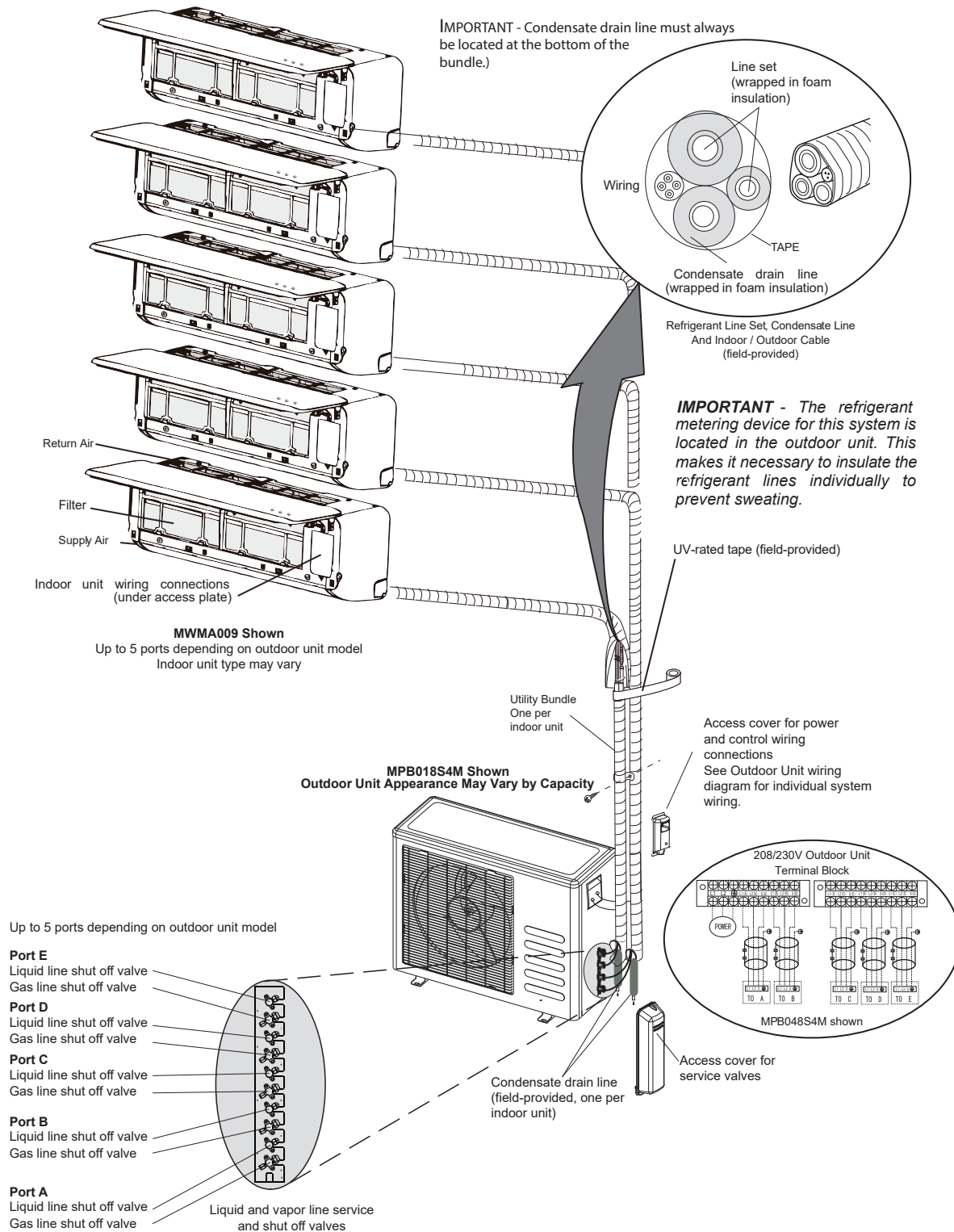
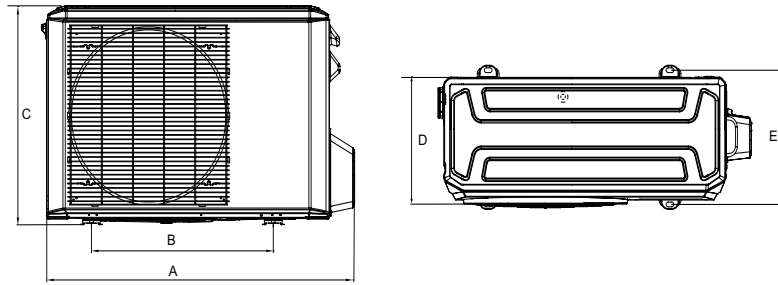


Figure 1. Typical System Shown
(Indoor Unit Appearance is Dependent on Model)

Outdoor Unit Dimensions



TYPICAL APPEARANCE OF UNITS

Model	Unit of Measurement	A	B	C	D	E
MPB018S4M-*P	inches	36	21-1/4	27-5/8	13-1/4	13-3/4
	mm	914	540	702	335	350
MPB030S4M-*P MPB036S4M-*P	inches	40-3/4	26-1/2	31-7/8	15-1/8	15-7/8
	mm	1035	673	810	386	403
MLA018S4M-*P MLA030S4M-*P	inches	40-5/8	26-1/2	31-7/8	16-5/8	15-7/8
	mm	1032	673	810	422	403
MLA036S4M-*P	inches	41-1/8	25	52-1/2	15-3/8	15-7/8
	mm	1045	635	1334	391	403

Figure 2. Outdoor Unit Dimensions - Inches (mm)

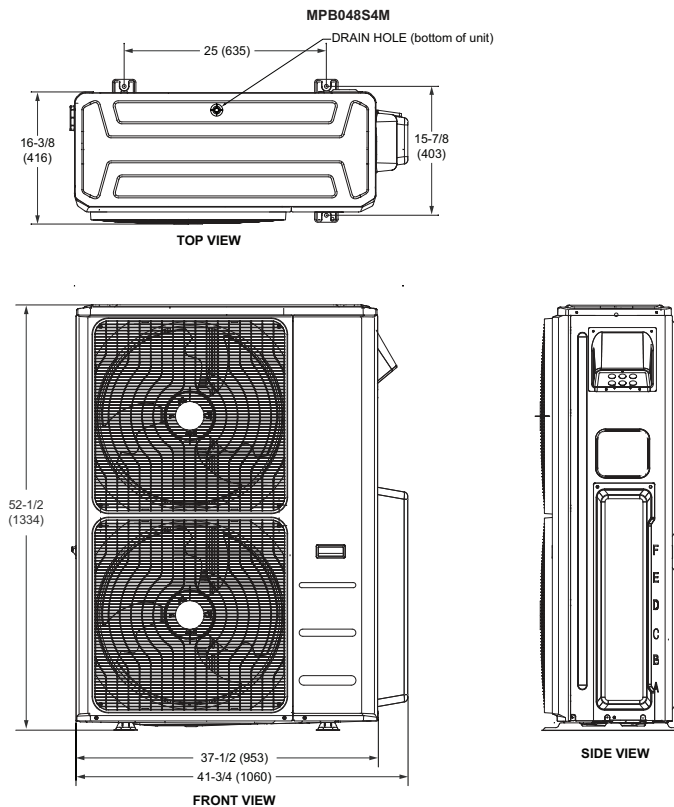
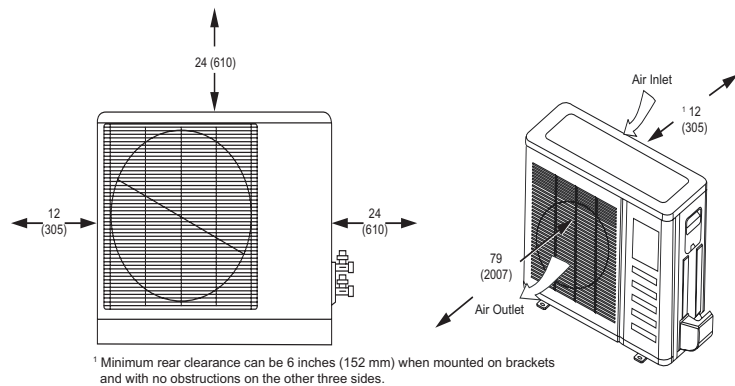


Figure 3. Outdoor Unit Dimensions (MLB048S4M-*P and MPB048S4M-*P - Inches (mm))

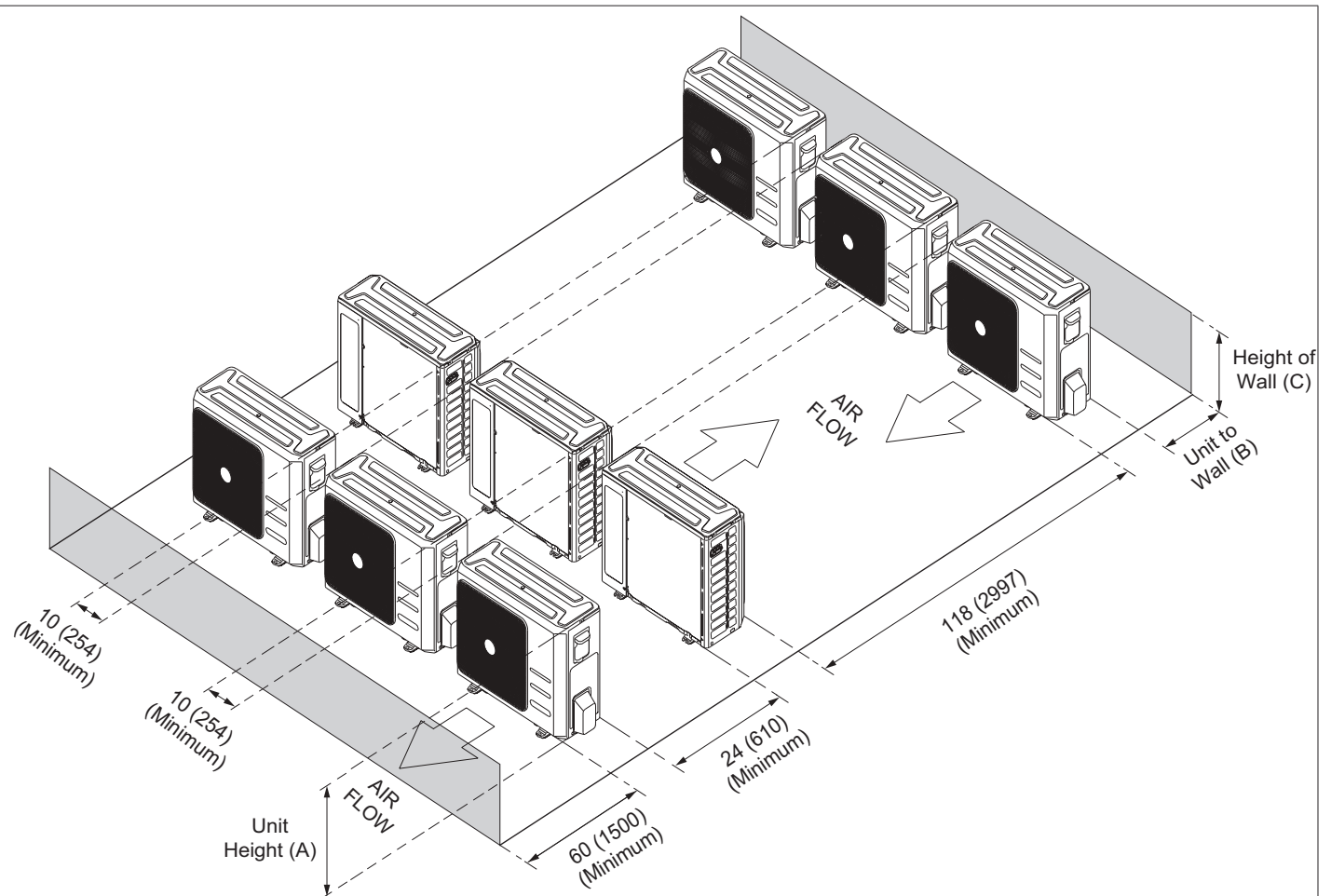
Outdoor Unit Clearances



IMPORTANT

The construction of a canopy or shade is recommended when the outdoor unit is placed in direct sunlight all day with temperatures exceeding 100°F (38°C). This is necessary because of an ambient limit control set to 122°F (50°C) to protect the electronics. If the outdoor unit is placed in direct sunlight it is possible that the limit may activate and shut down the unit. A canopy is recommended.

Figure 4. Outdoor Unit Clearances - Inches (mm)



CLEARANCE NOTES FOR MULTIPLE UNITS:

If the height of the wall (C) is less than or equal to the height of the smallest unit (A), the distance from the unit to the wall (B) must be a minimum of 10 inches (254 mm).

Figure 5. Multiple Outdoor Unit Clearances - Inches (mm)

Torque Requirements for Caps and Fasteners

When servicing or repairing HVAC components, ensure the fasteners are appropriately tightened. "Table 1. Torque Requirements" provides torque values for fasteners.

IMPORTANT

Only use Allen wrenches of sufficient hardness (50Rc - Rockwell scale minimum). Fully insert the wrench into the valve stem recess.

Service valve stems are factory-torqued from 9 ft.-lbs. (12 N*m) for small valves, to 25 ft.-lbs. (34 N*m) for large valves) to prevent refrigerant loss during shipping and handling. Using an Allen wrench rated at less than 50Rc risks rounding or breaking off the wrench, or stripping the valve stem recess.

See the Lennox Service and Application Notes C-08-1 for further details and information.

Table 1. Torque Requirements

Parts	Recommended Torque	
	U.S.	Newton-Meter- N
Service valve cap	8 ft.-lb.	11
Sheet metal screws	16 in.-lb.	2
Machine screws #10	27 in.-lb.	3
Compressor bolts	7 ft.-lb.	10
Gauge port seal cap	8 ft.-lb.	11

Outdoor Unit Installation

Placement Considerations

! CAUTION

In order to avoid injury, take proper precaution when lifting heavy objects.

Consider the following when positioning the unit:

- In coastal areas or other places with salty atmosphere of sulfate gas, corrosion may shorten the life of the unit. In coastal areas, the coil should be cleaned with potable water several times per year to avoid corrosive buildup (salt).
- Some localities are adopting sound ordinances based on the unit's sound level registered from the adjacent property, not from the property where the unit is installed. Install the unit as far as possible from the property line.
- When possible, do not install the unit directly outside a window. Glass has a very high level of sound transmission.
- Install unit level.

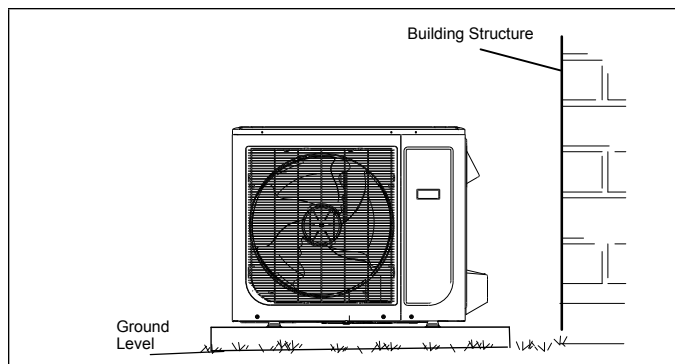


Figure 6. Install Unit Level

- Choose a place solid enough to bear the weight and vibration of the unit, where the operation noise will not be amplified.
- Choose a location where the hot air discharged from the unit or the operation noise will not be a nuisance to neighbors.
- Avoid installing the outdoor unit near a bedroom or other places where noise may cause a problem.
- There must be sufficient space to carry the unit into and out of the site.
- There must be unobstructed air flow around the air inlet and the air outlet.
- The unit must not be installed in areas where a flammable gas leak may occur.
- Install the outdoor unit a minimum of 3 feet (1m) away from any antenna, power cord (line), radio, telephone, security system, or intercom. Electrical interference and radio frequencies from any of these sources may affect operation.
- Since water drains from the outdoor unit during various stages of operation, do not place anything which may be damaged by moisture under the unit.

Direct Sunlight, Rain, Snow and Ice Protection

Indoor Unit

- It is recommended that Medium Static Ducted Indoor Units not be installed in unconditioned spaces with temperatures above 100°F (38°C).

Outdoor Unit:

- The construction of a canopy or shade is suggested when the outdoor unit is placed in direct sunlight all day with temperatures exceeding 100°F (38°C). This is necessary because of an ambient limit control set to 122°F (50°C) to protect the electronics. If the outdoor unit is placed in direct sunlight it is possible that the limit may activate and shut down the unit. A canopy is recommended as illustrated in "Figure 7. Outdoor Unit on Pedestal (Stand) and Protective Canopy" on page 7 or "Figure 12. Dog House-Style Shelter" on page 8.
- Place outdoor unit away from overhanging roof lines which would allow water or ice to drop on, or in front of, coil or into unit. Construct a canopy as illustrated in

“Figure 7. Outdoor Unit on Pedestal (Stand) and Protective Canopy” on page 7.

- The outdoor unit base should be elevated above the depth of average snows as illustrated in “Figure 8. Outdoor Unit on Brackets above Snow Line” on page 7.
- In heavy snow areas, do not place the outdoor unit where drifting will occur as illustrated in “Figure 9. Outdoor Unit Air Flow Obstructed by Snow” on page 7.
- Carefully consider how to manage defrost water disposal to prevent ice from blocking walkways or creating a safety hazard near the outdoor unit as illustrated in “Figure 10. Avoid Defrost Water Ice Hazard” on page 7.

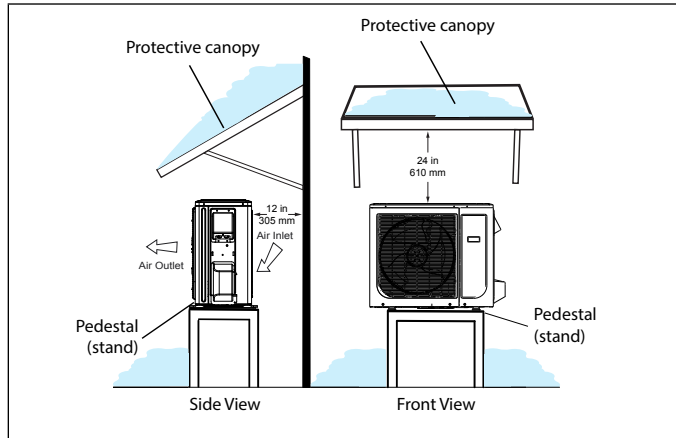


Figure 7. Outdoor Unit on Pedestal (Stand) and Protective Canopy

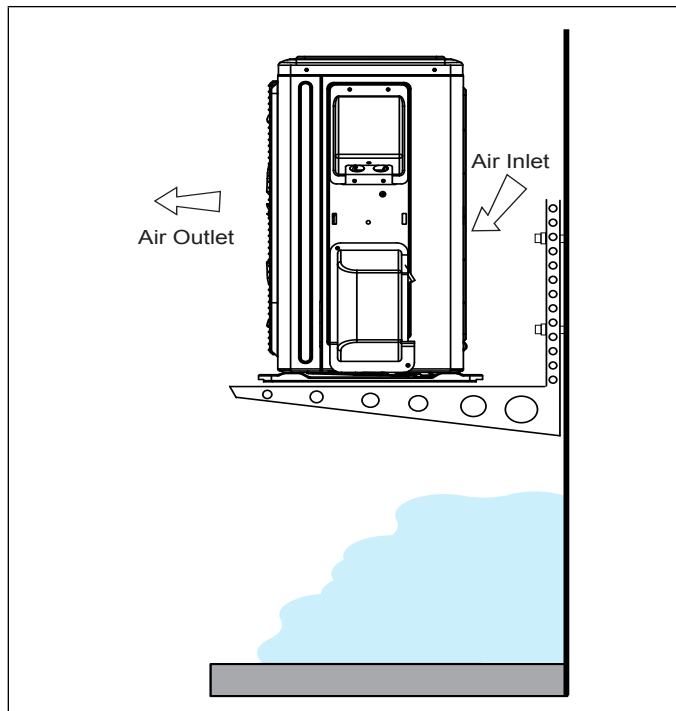


Figure 8. Outdoor Unit on Brackets above Snow Line

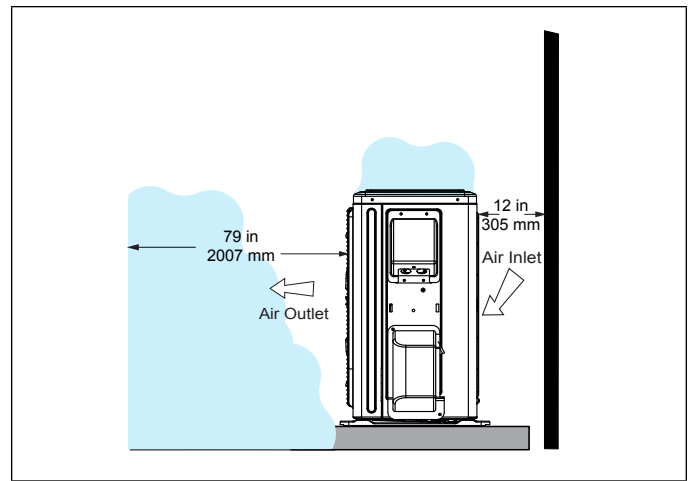


Figure 9. Outdoor Unit Air Flow Obstructed by Snow

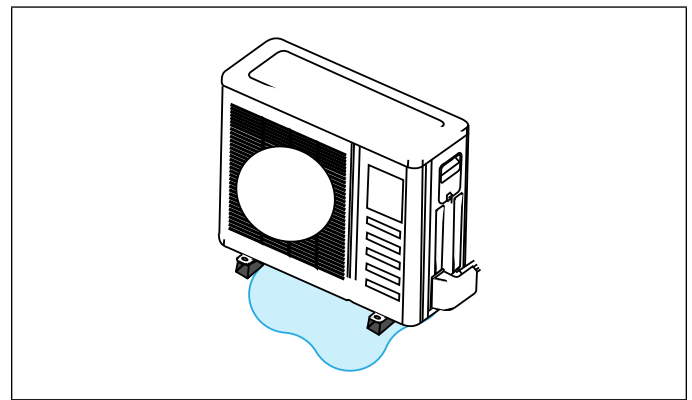


Figure 10. Avoid Defrost Water Ice Hazard

Prevailing Winds

Normally wind baffles are not required for a outdoor unit. However, in order to maximize reliability and performance, the following best practices should be followed.

If unit coil cannot be installed away from prevailing winter winds, some method of protecting the coil is recommended. However, minimum clearances as reference in “Figure 4. Outdoor Unit Clearances - Inches (mm)” on page 5 must be observed at all times.

Common application examples are:

- When prevailing winds are from the air inlet side, then position the wind barrier a minimum of 12 inches (305 mm) from the unit as illustrated in “Figure 4. Outdoor Unit Clearances - Inches (mm)”.
- When prevailing wind is into the discharge side, then position the wind barrier a minimum 79 inches (2007 mm) from the front of the unit as illustrated in “Figure 11. Wind Barrier”.
- Outdoor unit can be installed in a dog house style shelter as illustrated in “Figure 12. Dog House-Style Shelter”.
- Outdoor unit can be installed in a alcove or under a roof overhang as illustrated in “Figure 13. Unit installed in Alcove”.

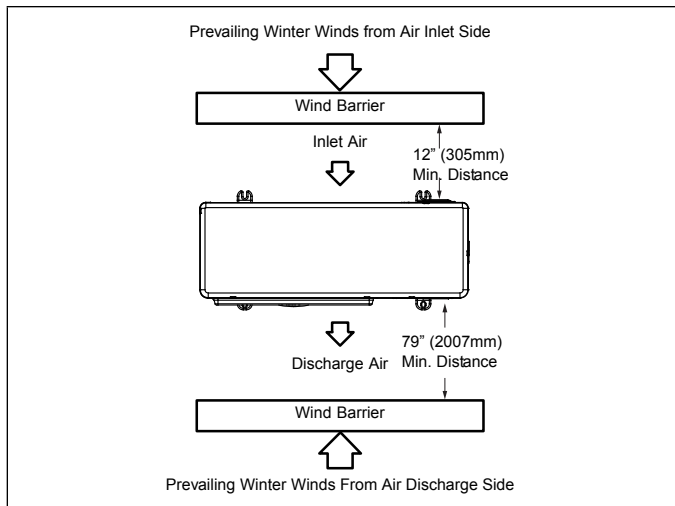


Figure 11. Wind Barrier

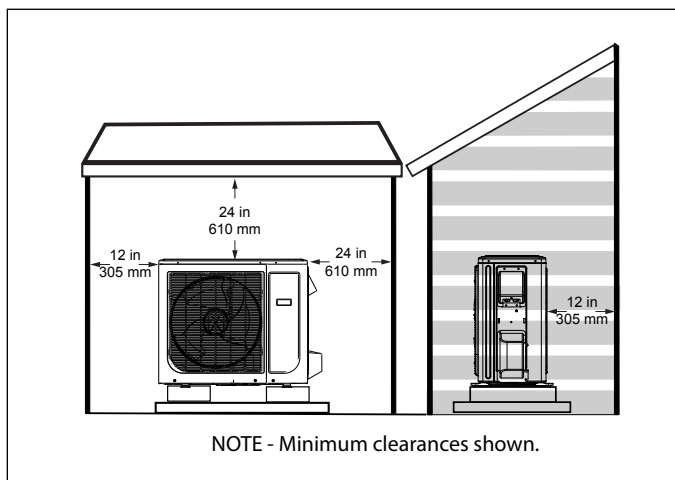


Figure 12. Dog House-Style Shelter

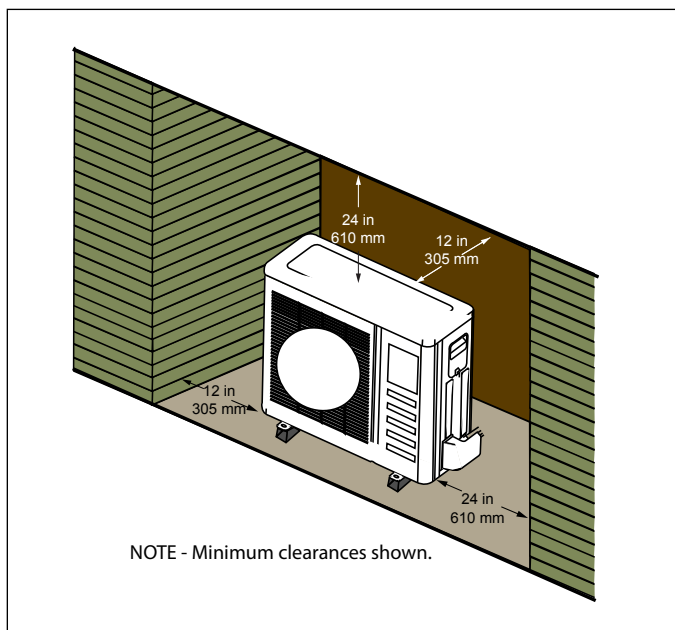


Figure 13. Unit installed in Alcove

Buried Refrigerant Pipe Protection

- **All** refrigerant lines must be insulated regardless of if it is buried
- In addition to insulating each line of piping, buried lines must rest inside a **sealed, watertight** conduit
- The conduit must be designed so it cannot collect and retain water

Outdoor Unit Condensate Piping

Condensate formed during the heating and defrost processes must be drained from heat pump units. Drain holes are provided in the base of the units to ensure proper drainage. Heat pumps must be raised when installed on a concrete pad or the ground to allow drainage to occur. If the heat pump unit is installed on wall mounting bracket, insert the provided drain connector into one of the 1 inch (25 mm) drain holes and attached a field-provided insulated drain hose to the connector. Use field-provided rubber plugs to cover any unused drain holes.

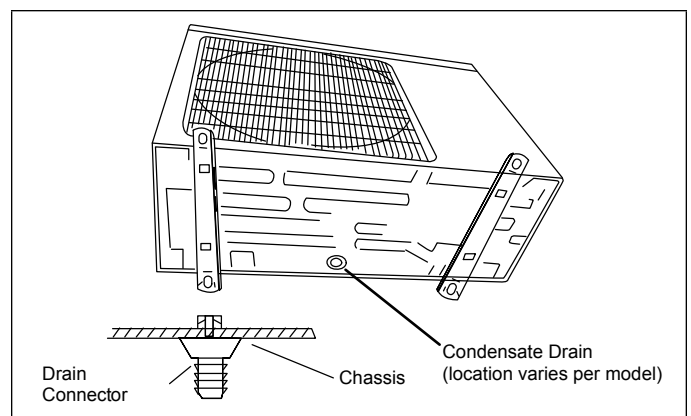


Figure 14. Condensate Drain

Securing the Outdoor Unit

Slab or Roof Mounting

Install the unit a minimum of 4 inches (102 mm) above the roof or ground surface to avoid ice build-up around the unit. Place the unit above a load bearing wall or area of the roof that can adequately support the unit. Consult local codes for rooftop applications.

! CAUTION

Roof Damage!

This system contains both refrigerant and oil. Some rubber roofing material may absorb oil. This will cause the rubber to swell when it comes into contact with oil. The rubber will then bubble and could cause leaks. Protect the roof surface to avoid exposure to refrigerant and oil during service and installation. Failure to follow this notice could result in damage to roof surface.

Securing Outdoor Unit to Slab, Frame, or Rails

If the outdoor unit is installed on a field-provided slab or frame, use lag bolts or equivalent to secure the outdoor unit to the slab or frame.

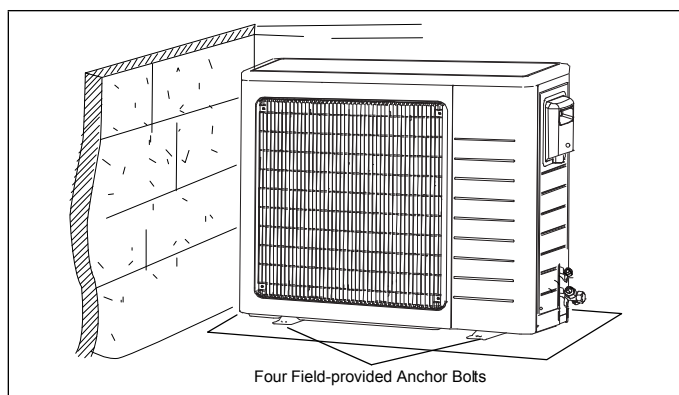


Figure 15. Securing Outdoor Unit to Slab

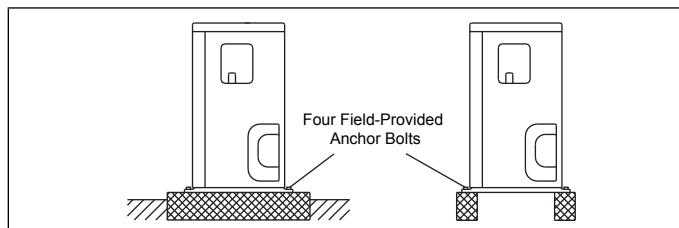


Figure 16. Securing Outdoor Unit to Rails

Securing Outdoor Unit To Hanging Brackets

If the outdoor unit is installed on field-provided wall mounting brackets, use lag bolts or equivalent to secure the outdoor unit to the bracket. Minimum rear clearance can be reduced to 6 inches (152 mm) when mounted on brackets and with no obstructions on the other three sides. Allow for condensate disposal when placing units above one another.

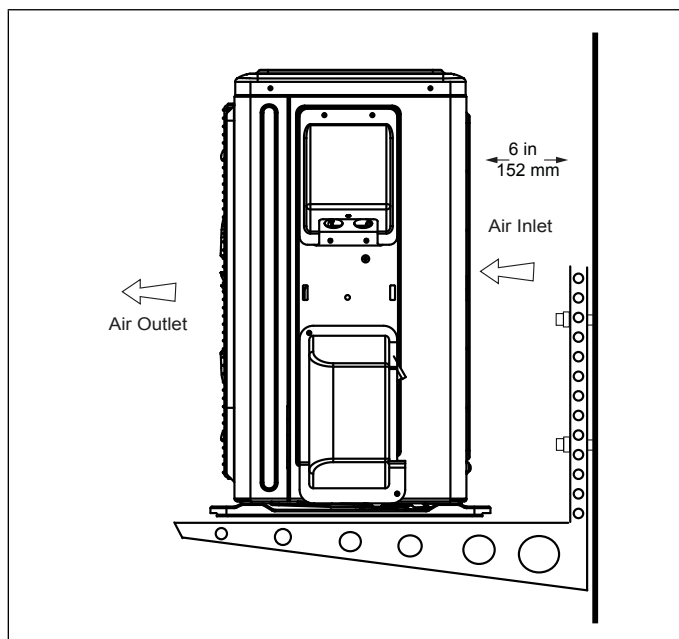


Figure 17. Securing Outdoor Unit to Brackets

Refrigerant Piping Connections

Line sets consists of two copper pipes connecting the outdoor unit to the indoor unit. "Table 3. Refrigerant Piping and Indoor Unit Connection Sizes" on page 10 lists

the connection sizes. The connections are made using the provided brass flare nuts at the end of the refrigerant piping connections.

1. Choose the correct pipe sizes for your application using "Table 3. Refrigerant Piping and Indoor Unit Connection Sizes" on page 10.
2. Confirm that you are using the correct diameter piping.
3. Determine the necessary piping length required for the application.
4. Cut the selected pipes with a pipe cutter. Make the cuts flat and smooth as illustrated in "Figure 18. Cutting Pipe".

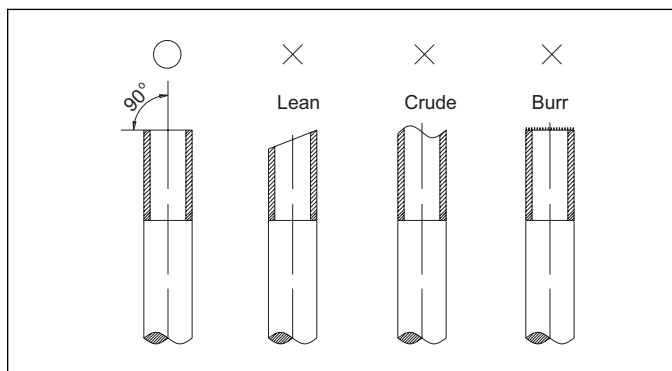


Figure 18. Cutting Pipe

5. Insulate the copper piping.
6. Insert a flare nut onto each pipe before flaring.
7. Use "Table 2. Flaring Pipe" to properly flare the pipe.

Table 2. Flaring Pipe

Pipe Diameter	Flare Dimension A (mm)		Flare Shape
	Min	Max	
1/4" (6.35)	8.3	8.7	
3/8" (9.62)	12.0	12.4	
1/2" (9.52)	15.4	15.8	
5/8" (15.9)	18.6	19.1	
3/4" (22.9)	22.9	23.3	

8. After flaring the pipe, temporarily sealed pipe ends with adhesive tape to avoid contaminants from entering the pipes.
9. The seal on the unit refrigerant piping connections should remain in place until the last possible moment. This will prevent dust or water from getting into the refrigerant piping before it is connected.
10. **CAREFULLY** adjust refrigerant piping connections to suit the application.

11. Slowly loosen one of the flare nuts to release the factory nitrogen charge from the indoor units only.
12. Remove the flare nuts from the connections on the unit and discard the seal from each of the piping connections.
13. Slide the flare nuts onto the ends of the field-provided refrigerant piping before using a suitable flaring tool to flare the end of the copper pipe.
14. Apply recommended HFC-410A refrigerant lubricant to the outside of the flared refrigerant lines.

IMPORTANT

The compressor in this unit contains PVE oil (Polyvinylether). PVE oil is formulated for hydrofluorocarbon (HFC) refrigerants, such as HFC-410A, which this system contains. While it may have some miscibility properties with mineral-based oil and POE oil (Polyolester), it is not recommended to mix PVE oil with any other type of refrigerant oil.

15. Align the threaded connections with the flared refrigerant lines. Tighten the flare nuts slightly at first to obtain a smooth match as illustrated in "Figure 19. Making Connections (Male to Female Connection)".

Table 3. Refrigerant Piping and Indoor Unit Connection Sizes

Size (Btuh)	Liquid Line in.	Gas Line in.
9000	1/4	3/8
12000	1/4	1/2
18000	1/4	1/2
24000	3/8	5/8

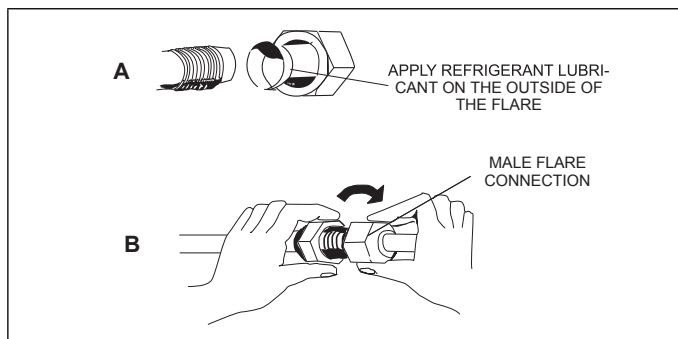


Figure 19. Making Connections (Male to Female Connection)

16. Once snug, continue another half-turn on each nut which should create a leak-free joint. A torque wrench may be used to tighten flare nuts using "Table 4. Flare Nut Torque Recommendations" recommendations. **Do not over-tighten a flared joint. Flared connections should always be accessible and must be insulated to prevent condensation.**
17. After refrigerant piping has been installed and checked for leaks, apply insulation over all flared connections.

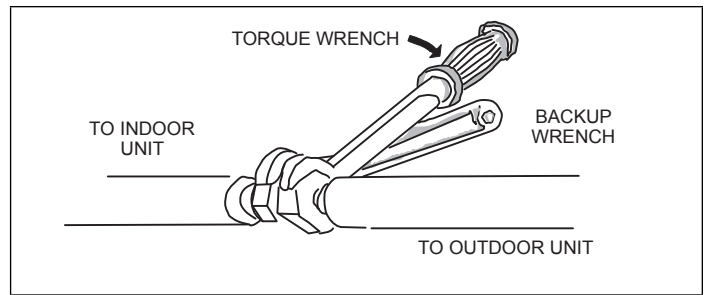


Figure 20. Tighten Flare Nut

Table 4. Flare Nut Torque Recommendations

Outside Diameter	Recommended Torque	No torque wrench available Finger tighten and use an appropriately sized wrench to turn an additional:
Inches		
1/4	15 ft.-lb. (20 N)	1/4 turn
3/8	26 ft.-lb. (35 N)	1/2 turn
1/2	41 ft.-lb. (56 N)	7/8 turn
5/8	48 ft.-lb. (65 N)	1 full turn

Indoor Unit Installation

CAUTION

In order to avoid injury, take proper precaution when lifting heavy objects.

Please refer to the installation instruction included with the indoor unit for setup.

IMPORTANT

Pipe and wire to each zone separately.

Test each indoor unit separately to ensure proper operation.

Connecting Multiple Capacity Indoor Units

- The largest capacity indoor unit must be connected to the lowest refrigerant connection ports on the outdoor unit.
- The 24,000 Btu indoor unit is only allowed to be connected to MPB036S4M, MPB048S4M, MLA036S4M and MLB048S4M outdoor units.

NOTE: Each indoor unit must be piped AND wired to the correct zone piping connections and wiring terminals. Make sure that indoor unit A is wired to the zone A terminal block and connected to the appropriate refrigerant pipe connections.

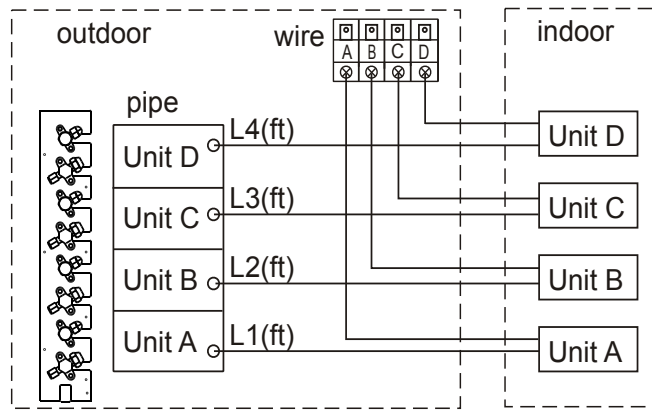


Figure 21. Pipe and Wire Each Zone Separately

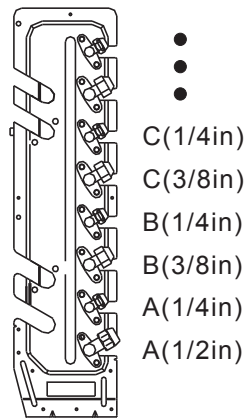


Figure 22. Connecting Multiple Capacity Indoor Units

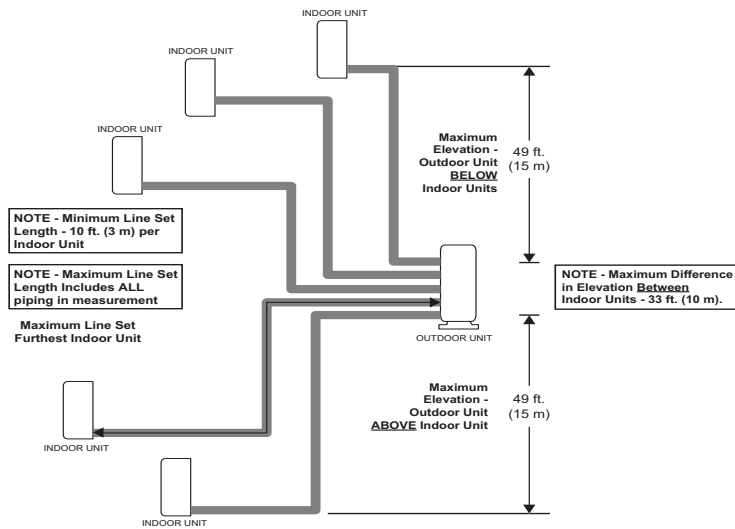


Figure 23. MLA, MLB and MPB Line Set Elevations

Outdoor Unit Model No.	MLA018S4M / MPB018S4M	MLA030S4M / MPB030S4M	MLA036S4M / MPB036S4M	MLB048S4M / MPB048S4M
Maximum Number of Indoor Units/Zones	Two	Three	Four	Five
Indoor Unit Connections	(2) 1/4 liq. (2) 3/8 gas	(3) 1/4 liq. (3) 3/8 gas	(4) 1/4 liq. (3) 3/8 gas (1) 1/2 gas	(5) 1/4 liq. (3) 3/8 gas (2) 1/2 gas
Maximum Pipe Length for all Rooms	131 ft. (40 m)	197 ft. (60 m)	262 ft. (80 m)	262 ft. (80 m)
Maximum Line Set Length - Furthest Indoor Unit	82 ft. (25 m)	98 ft. (30 m)	115 ft. (35 m)	115 ft. (35 m)

Indoor / Outdoor Unit Match-Ups

Each system is formed of one outdoor unit and a selection of indoor units as referenced in the Product Specifications (EHB). Only these combinations are allowed.

NOTE: Each indoor unit must be piped AND wired to the correct zone piping connections and wiring terminals. Make sure that indoor unit A is wired to the zone A terminal block and connected to the appropriate refrigerant pipe connections.

Table 5. Match-Ups

Outdoor Model	No. of Zones	Indoor Unit Capacity (Unit No.)	Line Set Required (Liquid x Gas)
MPB018S4M Indoor Unit A 1/4" liq + 3/8" gas Indoor Unit B 1/4" liq + 3/8" gas	1	012 (A)	¹ 1/4 in. x 1/2 in.
	2	009 (A) 009 (B)	1/4 in. x 3/8 in. 1/4 in. x 3/8 in.
	2	009 (B) 012 (A)	1/4 in. x 3/8 in. ¹ 1/4 in. x 1/2 in.
	2	012 (A) 012 (B)	¹ 1/4 in. x 1/2 in. ¹ 1/4 in. x 1/2 in.
MPB030S4M Indoor Unit A 1/4" liq + 3/8" gas Indoor Unit B 1/4" liq + 3/8" gas Indoor Unit C 1/4" liq + 3/8" gas	1	018 (A)	¹ 1/4 in. x 1/2 in.
	2	009 (A) 009 (B)	1/4 in. x 3/8 in. 1/4 in. x 3/8 in.
	2	009 (B) 012 (A)	1/4 in. x 3/8 in. ¹ 1/4 in. x 1/2 in.
	2	012 (A) 012 (B)	¹ 1/4 in. x 1/2 in. ¹ 1/4 in. x 1/2 in.
	2	009 (A) 009 (B)	1/4 in. x 3/8 in. 1/4 in. x 3/8 in.
	2	009 (B) 018 (A)	1/4 in. x 3/8 in. ¹ 1/4 in. x 1/2 in.
	2	012 (A) 012 (B)	¹ 1/4 in. x 1/2 in. ¹ 1/4 in. x 1/2 in.
	2	012 (B) 018 (A)	¹ 1/4 in. x 1/2 in. ¹ 1/4 in. x 1/2 in.
	2	018 (A) 018 (B)	¹ 1/4 in. x 1/2 in. ¹ 1/4 in. x 1/2 in.
	3	009 (A) 009 (B) 009 (C)	1/4 in. x 3/8 in. 1/4 in. x 3/8 in. 1/4 in. x 3/8 in.
	3	009 (B) 009 (C) 012 (A)	1/4 in. x 3/8 in. 1/4 in. x 3/8 in. ¹ 1/4 in. x 1/2 in.
	3	009 (A) 009 (B) 012 (A)	1/4 in. x 3/8 in. 1/4 in. x 3/8 in. ¹ 1/4 in. x 1/2 in.

Table 5. Match-Ups

Outdoor Model	No. of Zones	Indoor Unit Capacity (Unit No.)	Line Set Required (Liquid x Gas)
MPB030S4M Indoor Unit A 1/4" liq + 3/8" gas Indoor Unit B 1/4" liq + 3/8" gas Indoor Unit C 1/4" liq + 3/8" gas	3	009 (C) 012 (A) 012 (B)	1/4 in. x 3/8 in. ¹ 1/4 in. x 1/2 in. ¹ 1/4 in. x 1/2 in.
	3	009 (B) 009 (C) 018 (A)	1/4 in. x 3/8 in. 1/4 in. x 3/8 in. ¹ 1/4 in. x 1/2 in.
	3	012 (A) 012 (B) 012 (C)	¹ 1/4 in. x 1/2 in. ¹ 1/4 in. x 1/2 in. ¹ 1/4 in. x 1/2 in.
	2	009 (B) 018 (A)	1/4 in. x 3/8 in. 1/4 in. x 1/2 in.
	2 ⁴	009 (B) 024 (A)	1/4 in. x 3/8 in. ^{2,3} 3/8 in. x 5/8 in.
	2	012 (A) 012 (B)	1/4 in. x 1/2 in. ¹ 1/4 in. x 1/2 in.
	2 ⁴	012 (B) 024 (A)	¹ 1/4 in. x 1/2 in. ^{2,3} 3/8 in. x 5/8 in.
	2	012 (B) 018 (A)	¹ 1/4 in. x 1/2 in. 1/4 in. x 1/2 in.
	2	018 (A) 018 (B)	1/4 in. x 1/2 in. ¹ 1/4 in. x 1/2 in.
MPB036S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 3/8" gas Indoor Unit C 1/4" liq + 3/8" gas Indoor Unit D 1/4" liq + 3/8" gas	3	009 (B) 009 (C) 012 (A)	1/4 in. x 3/8 in. 1/4 in. x 3/8 in. 1/4 in. x 1/2 in.
	3	009 (B) 009 (C) 018 (A)	1/4 in. x 3/8 in. 1/4 in. x 3/8 in. 1/4 in. x 1/2 in.
	3	009 (C) 012 (A) 012 (B)	1/4 in. x 3/8 in. 1/4 in. x 1/2 in. ¹ 1/4 in. x 1/2 in.

Table 5. Match-Ups

Outdoor Model	No. of Zones	Indoor Unit Capacity (Unit No.)	Line Set Required (Liquid x Gas)
MPB036S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 3/8" gas Indoor Unit C 1/4" liq + 3/8" gas Indoor Unit D 1/4" liq + 3/8" gas	3	009 (C)	1/4 in. x 3/8 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	3	009 (C)	1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
		018 (B)	¹ 1/4 in. x 1/2 in.
	3	012 (A)	1/4 in. x 1/2 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
	3	012 (C)	¹ 1/4 in. x 1/2 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	3	012 (C)	¹ 1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
		018 (B)	¹ 1/4 in. x 1/2 in.
	3 ⁴	012 (B)	¹ 1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
	4	009 (B)	1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
	4	009 (A)	¹ 1/4 in. x 3/8 in.
		009 (B)	1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
	4	009 (B)	1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
	4	012 (A)	1/4 in. x 1/2 in.
		009 (B)	1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
	4	009 (D)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
	4	009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
	4	018 (A)	1/4 in. x 1/2 in.
		009 (D)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
	4	012 (B)	¹ 1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.

Table 5. Match-Ups

Outdoor Model	No. of Zones	Indoor Unit Capacity (Unit No.)	Line Set Required (Liquid x Gas)
MLB048S4M MPB048S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 1/2" gas Indoor Unit C 1/4" liq + 3/8" gas Indoor Unit D 1/4" liq + 3/8" gas Indoor Unit E 1/4" liq + 3/8" gas	4	012 (A)	1/4 in. x 1/2 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		012 (D)	¹ 1/4 in. x 1/2 in.
	2	009 (B)	¹ 1/4 in. x 3/8 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
	2	012 (B)	1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	2	012 (B)	1/4 in. x 1/2 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
	2	018 (A)	1/4 in. x 1/2 in.
		018 (B)	1/4 in. x 1/2 in.
	2	018 (B)	1/4 in. x 1/2 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
	2	024 (A)	^{2,3} 3/8 in. x 5/8 in.
		024 (B)	^{2,3} 3/8 in. x 5/8 in.
	3	009 (A)	¹ 1/4 in. x 3/8 in.
		009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
	3	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
	3	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
	3	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
	3	009 (C)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
	3	009 (C)	1/4 in. x 3/8 in.
		012 (B)	1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.

Table 5. Match-Ups

Outdoor Model	No. of Zones	Indoor Unit Capacity (Unit No.)	Line Set Required (Liquid x Gas)
MLB048S4M MPB048S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 1/2" gas Indoor Unit C 1/4" liq + 3/8" gas Indoor Unit D 1/4" liq + 3/8" gas Indoor Unit E 1/4" liq + 3/8" gas	3	009 (C)	1/4 in. x 3/8 in.
		012 (B)	1/4 in. x 1/2 in.
		024 (A)	^{2, 3} 3/8 in. x 5/8 in.
	3	009 (C)	1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
		018 (B)	1/4 in. x 1/2 in.
	3	009 (C)	1/4 in. x 3/8 in.
		018 (B)	1/4 in. x 1/2 in.
		024 (A)	^{2, 3} 3/8 in. x 5/8 in.
	3	009 (C)	1/4 in. x 3/8 in.
		024 (A)	^{2, 3} 3/8 in. x 5/8 in.
		024 (B)	^{2, 3} 3/8 in. x 5/8 in.
	3	012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
	3	012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	3	012 (C)	1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
		018 (B)	¹ 1/4 in. x 1/2 in.
	3	012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		024 (A)	^{2, 3} 3/8 in. x 5/8 in.
	3	012 (B)	1/4 in. x 1/2 in.
		018 (C)	¹ 1/4 in. x 1/2 in.
		024 (A)	^{2, 3} 3/8 in. x 5/8 in.
	3	012 (C)	¹ 1/4 in. x 1/2 in.
		024 (A)	^{2, 3} 3/8 in. x 5/8 in.
		024 (B)	^{2, 3} 3/8 in. x 5/8 in.
	3	018 (A)	1/4 in. x 1/2 in.
		018 (B)	1/4 in. x 1/2 in.
		018 (C)	¹ 1/4 in. x 1/2 in.
	3	018 (B)	1/4 in. x 1/2 in.
		018 (C)	¹ 1/4 in. x 1/2 in.
		024 (A)	^{2, 3} 3/8 in. x 5/8 in.
	4	009 (A)	¹ 1/4 in. x 3/8 in.
		009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
	4	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.

Table 5. Match-Ups

Outdoor Model	No. of Zones	Indoor Unit Capacity (Unit No.)	Line Set Required (Liquid x Gas)
MLB048S4M MPB048S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 1/2" gas Indoor Unit C 1/4" liq + 3/8" gas Indoor Unit D 1/4" liq + 3/8" gas Indoor Unit E 1/4" liq + 3/8" gas	4	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
	4	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		024 (A)	^{2, 3} 3/8 in. x 5/8 in.
	4	009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
	4	009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		012 (B)	1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	4	009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
		018 (B)	1/4 in. x 1/2 in.
	4	009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		018 (B)	1/4 in. x 1/2 in.
		024 (A)	^{2, 3} 3/8 in. x 5/8 in.
	4	009 (D)	1/4 in. x 3/8 in.
		012 (A)	¹ 1/4 in. x 1/2 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
		012 (C)	1/4 in. x 1/2 in.

Table 5. Match-Ups

Outdoor Model	No. of Zones	Indoor Unit Capacity (Unit No.)	Line Set Required (Liquid x Gas)
MLB048S4M MPB048S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 1/2" gas Indoor Unit C 1/4" liq + 3/8" gas Indoor Unit D 1/4" liq + 3/8" gas Indoor Unit E 1/4" liq + 3/8" gas	4	009 (D)	1/4 in. x 3/8 in.
		012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	4	009 (D)	1/4 in. x 3/8 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
		018 (B)	1/4 in. x 1/2 in.
	4	012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		012 (D)	¹ 1/4 in. x 1/2 in.
	4	012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		012 (D)	¹ 1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	5	009 (A)	¹ 1/4 in. x 3/8 in.
		009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
	5	009 (E)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
	5	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		009 (E)	1/4 in. x 3/8 in.
	5	012 (A)	1/4 in. x 1/2 in.
		009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
	5	009 (E)	1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
	5	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		009 (E)	1/4 in. x 3/8 in.
	5	024 (A)	^{2, 3} 3/8 in. x 5/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		009 (E)	1/4 in. x 3/8 in.
	5	012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
	5	009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		009 (E)	1/4 in. x 3/8 in.
		012 (B)	1/4 in. x 1/2 in.
	5	018 (A)	1/4 in. x 1/2 in.
		009 (D)	1/4 in. x 3/8 in.
		009 (E)	1/4 in. x 3/8 in.
		012 (B)	1/4 in. x 1/2 in.

Table 5. Match-Ups

Outdoor Model	No. of Zones	Indoor Unit Capacity (Unit No.)	Line Set Required (Liquid x Gas)
MLB048S4M MPB048S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 1/2" gas Indoor Unit C 1/4" liq + 3/8" gas Indoor Unit D 1/4" liq + 3/8" gas Indoor Unit E 1/4" liq + 3/8" gas	5	009 (D)	1/4 in. x 3/8 in.
		009 (E)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
	5	012 (C)	¹ 1/4 in. x 1/2 in.
		009 (D)	1/4 in. x 3/8 in.
		009 (E)	1/4 in. x 3/8 in.
		012 (B)	1/4 in. x 1/2 in.
	5	012 (C)	¹ 1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	5	009 (E)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
MLA018S4M Indoor Unit A 1/4" liq + 3/8" gas Indoor Unit B 1/4" liq + 3/8" gas	5	012 (D)	¹ 1/4 in. x 1/2 in.
		012 (E)	¹ 1/4 in. x 1/2 in.
	5	012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
	5	012 (C)	¹ 1/4 in. x 1/2 in.
		012 (D)	¹ 1/4 in. x 1/2 in.
	5	012 (E)	¹ 1/4 in. x 1/2 in.
		009 (A)	1/4 in. x 3/8 in.
	2	009 (B)	1/4 in. x 3/8 in.
		012 (A)	¹ 1/4 in. x 1/2 in.
	2	009 (B)	1/4 in. x 3/8 in.
		009 (B)	1/4 in. x 3/8 in.
MLA030S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 3/8" gas Indoor Unit C 1/4" liq + 3/8" gas	2	018 (A)	¹ 1/4 in. x 1/2 in.
		012 (A)	¹ 1/4 in. x 1/2 in.
	2	009 (B)	1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
	2	012 (A)	¹ 1/4 in. x 1/2 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
	2	009 (B)	1/4 in. x 3/8 in.
		024 (A)	^{2, 3} 3/8 in. x 5/8 in.
	2	012 (A)	1/4 in. x 1/2 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
	2	012 (B)	¹ 1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	2	024 (A)	^{2, 3} 3/8 in. x 5/8 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
	3	018 (A)	1/4 in. x 1/2 in.
		018 (B)	¹ 1/4 in. x 1/2 in.
	3	009 (A)	¹ 1/4 in. x 3/8 in.
		009 (B)	1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.

Table 5. Match-Ups

Outdoor Model	No. of Zones	Indoor Unit Capacity (Unit No.)	Line Set Required (Liquid x Gas)
MLA030S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 3/8" gas Indoor Unit C 1/4" liq + 3/8" gas	3	009 (B)	1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
	3	009 (C)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
	3	009 (B)	1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
	3	018 (A)	1/4 in. x 1/2 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
		009 (C)	1/4 in. x 3/8 in.
	3	012 (A)	1/4 in. x 1/2 in.
		012 (B)	¹ 1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
MLA036S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 1/2" gas Indoor Unit C 1/4" liq + 3/8" gas Indoor Unit D 1/4" liq + 3/8" gas	2	009 (B)	¹ 1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
	2	009 (B)	¹ 1/4 in. x 3/8 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
	2	012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
	2	012 (B)	1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	2	012 (B)	1/4 in. x 1/2 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
	2	018 (B)	1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	2	018 (B)	1/4 in. x 1/2 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
	2	024 (B)	^{2,3} 3/8 in. x 5/8 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
	3	009 (A)	¹ 1/4 in. x 3/8 in.
		009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
	3	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.

Table 5. Match-Ups

Outdoor Model	No. of Zones	Indoor Unit Capacity (Unit No.)	Line Set Required (Liquid x Gas)
MLA036S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 1/2" gas Indoor Unit C 1/4" liq + 3/8" gas Indoor Unit D 1/4" liq + 3/8" gas	3	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
	3	009 (C)	1/4 in. x 3/8 in.
		009 (B)	¹ 1/4 in. x 1/2 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
	3	009 (C)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
	3	009 (C)	1/4 in. x 3/8 in.
		012 (B)	1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	3	009 (C)	1/4 in. x 3/8 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
		012 (B)	1/4 in. x 1/2 in.
	3	009 (C)	1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
		018 (B)	1/4 in. x 1/2 in.
	3	012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
	3	012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	3	012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		024 (A)	^{2,3} 3/8 in. x 5/8 in.
	3	012 (C)	¹ 1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
		018 (B)	1/4 in. x 1/2 in.
	4	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
	4	009 (A)	¹ 1/4 in. x 3/8 in.
	4	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
	4	012 (A)	1/4 in. x 1/2 in.

Table 5. Match-Ups

Outdoor Model	No. of Zones	Indoor Unit Capacity (Unit No.)	Line Set Required (Liquid x Gas)
MLA036S4M Indoor Unit A 1/4" liq + 1/2" gas Indoor Unit B 1/4" liq + 1/2" gas Indoor Unit C 1/4" liq + 3/8" gas Indoor Unit D 1/4" liq + 3/8" gas	4	009 (B)	¹ 1/4 in. x 3/8 in.
		009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		018 (A)	1/4 in. x 1/2 in.
	4	009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
	4	009 (C)	1/4 in. x 3/8 in.
		009 (D)	1/4 in. x 3/8 in.
		012 (B)	1/4 in. x 1/2 in.
		018 (A)	1/4 in. x 1/2 in.
	4	009 (D)	1/4 in. x 3/8 in.
		012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
	4	012 (A)	1/4 in. x 1/2 in.
		012 (B)	1/4 in. x 1/2 in.
		012 (C)	¹ 1/4 in. x 1/2 in.
		012 (D)	¹ 1/4 in. x 1/2 in.

¹ 3/8 x 1/2 in. gas pipe adapter is required for line set connection to outdoor unit (furnished with outdoor unit).
² 1/4 x 3/8 in. liquid pipe adapter is required for line set connection to the 048 outdoor unit (furnished with outdoor unit).
³ 1/2 x 5/8 in. gas pipe adapter is required for line set connection to the 048 outdoor unit (furnished with outdoor unit).

Leak Test and Evacuation

Air and moisture remaining in the refrigerant system will have undesirable effects as indicated below:

- Pressure in the system rises.
- Operating current rises.
- Cooling or heating efficiency drops.
- Moisture in the refrigerant circuit may freeze.
- Water may lead to corrosion of parts in the refrigeration system.

The line set between the indoor and outdoor units must be leak tested and evacuated to remove any non-condensables and moisture from the system.

Leak Test

Use the following procedure to test for system leaks:

1. Connect the manifold gauge set and dry nitrogen gas cylinder to the liquid and gas service ports.
2. Open valve on nitrogen cylinder.
3. Pressurize the system per the pressure test specifications in "Table 6. Pressure Test Specifications".

4. Check that the system pressure remains stable. If there is any movement check system for leaks.
5. After the system is found to be free of leaks:
 - Close valve on nitrogen cylinder.
 - Relieve the nitrogen pressure by: loosening the charge hose connector at the nitrogen cylinder.
 - When the system pressure is reduced to normal, disconnect the hose from the cylinder.

IMPORTANT

Use only oxygen-free nitrogen (OFN).

Triple Evacuation Procedure

A Micron or Torr gauge must be used for this procedure.

1. Discharge the oxygen-free nitrogen and evacuate the system to a reading of 8000 Microns (8 Torr) using all service valves.
2. Break the vacuum by allowing nitrogen into the port connections (liquid and gas line pipes) until a positive pressure is achieved.
3. Evacuate the system to a reading of 5000 Microns (5 Torr).
4. Break the vacuum by allowing nitrogen into the port connections (liquid and gas line pipes) until a positive pressure is achieved
5. Evacuate the system to a minimum reading of 500 Microns (0.5 Torr).
6. For a moisture-free system, ensure the vacuum is held without movement for a minimum of 4 hours.
7. If vacuum fails to hold, carry out steps 2 through 6 until vacuum holds.

Table 6. Pressure Test Specifications

1	3 bar	44 psig	Minimum of 10 minutes
2	15 bar	220 psig	Minimum of 10 minutes
3	32 bar	470 psig	Minimum of 10 minutes
4	45 bar	650 psig	1 hour. Stress test to prove the integrity of the complete installation.
5	32 bar	470 psig	24 hours. Lower system pressure test, after confirmation No. 4 was successfully completed.

Wiring Connections

IMPORTANT

Install unit so that unit disconnect is accessible.

Use specified wiring and cable to make electrical connections. Clamp cables securely and make sure that connections are tight to avoid strain on wiring. Insecure wiring connections may result in equipment failure and risk of fire.

Wiring must be installed so that all cover plates can be securely closed.

!WARNING

Electric Shock Hazard. Can cause injury or death. Unit must be rounded in accordance with national and local codes.

Line voltage is present at all components when unit is not in operation. Disconnect all remote electric power supplies before opening access panel. Unit may have multiple power sources.

!CAUTION

All terminal connections must be made as illustrated in the following diagrams. Improperly connected wiring could damage unit or cause communication errors between indoor and outdoor units.

In the U.S.A., wiring must conform with current local codes and the current National Electric Code (NEC). In Canada, wiring must conform with current local codes and the current Canadian Electrical Code (CEC).

Outdoor Unit

- Refer to unit nameplate for minimum circuit ampacity and maximum over-current protection size.
- Make all electrical power wiring connections at the outdoor unit.
- Be sure to reattach all electrical box covers after connections are complete.

Indoor Units

Refer to the installation instruction included with the indoor unit for further details.

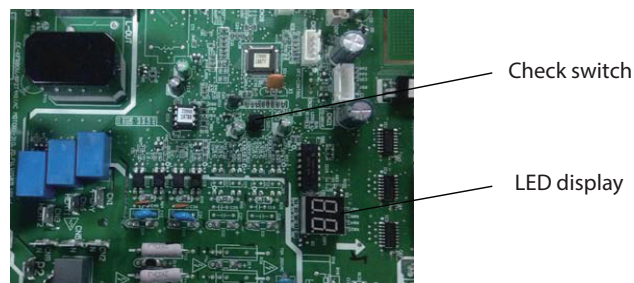
Automatic Wiring and Line Set Correction Function

A "Check Switch" on outdoor unit control reviews zone wiring and piping connections and displays "CE" if all connections are correct. If a unit(s) is not connected to the correct zone the control will automatically remap the wiring to the correct zone based on indoor unit size.

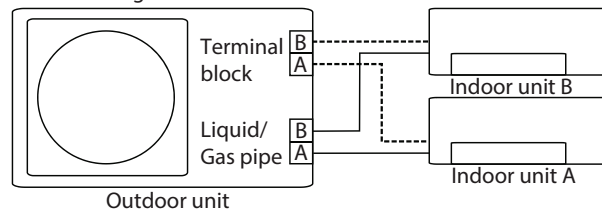
All models now feature automatic correction of wiring and line set installation errors.

How To Activate This Function

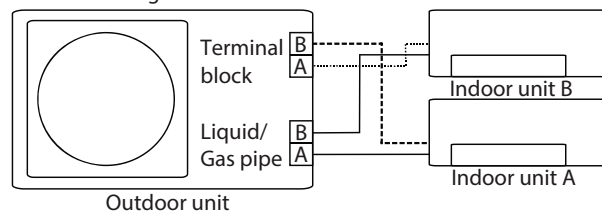
1. Check that outside temperature is above 41°F (5°C). This function does not work when the outside temperature is below 41°F (5°C).
2. Check that the service valves of the liquid and gas lines are open.
3. Turn on the breaker and wait at least two minutes.
4. Press and hold the check switch on the outdoor control board for five seconds or until the LED displays "CE" then release the switch. The CE code indicates the function is operating correctly.
5. Approximately 5-10 minutes after the switch is pressed, the "CE" code will disappear. This indicates the wiring/line set error(s) have been corrected and the system is now fully functional.



Correct wiring



Incorrect wiring



Incorrect wiring

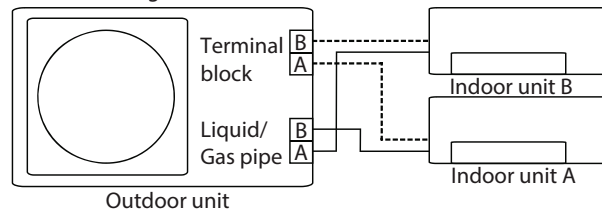


Figure 24. Correct and Incorrect Wiring

IMPORTANT

All diagrams (Figure 27 through Figure 33) are typical wiring diagrams. Refer to the wiring diagram on the unit for actual wiring.

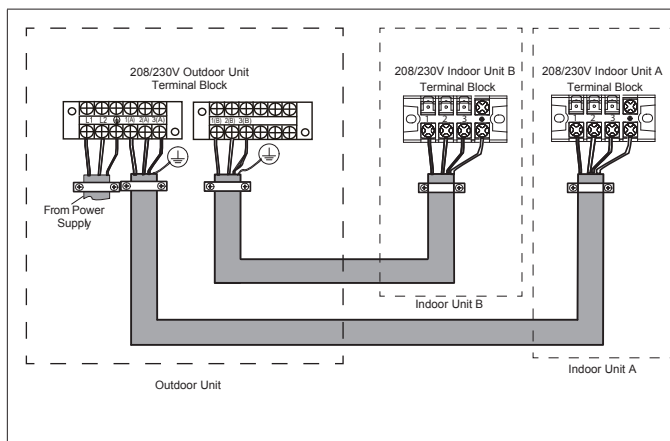


Figure 25. Connection Diagram - Systems 24k and Below

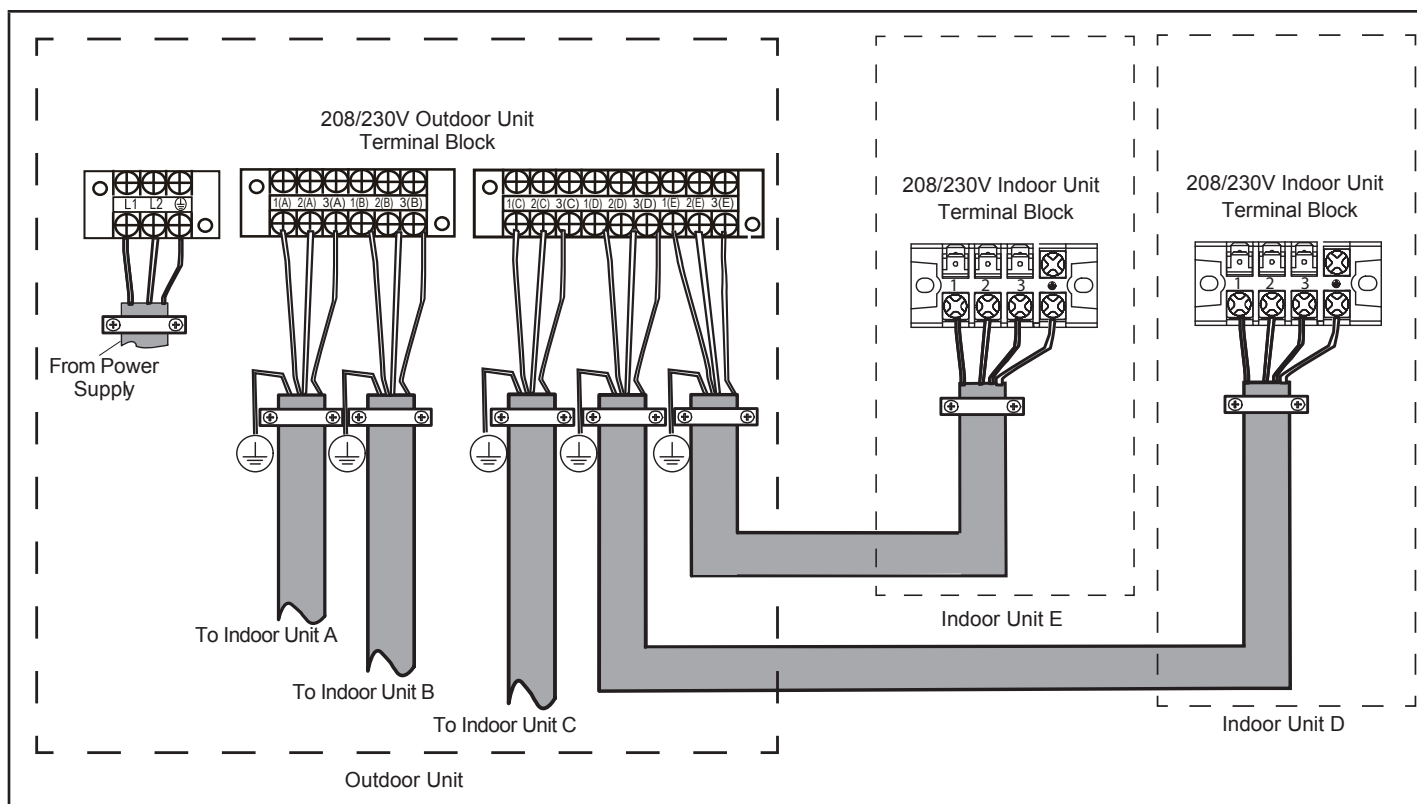
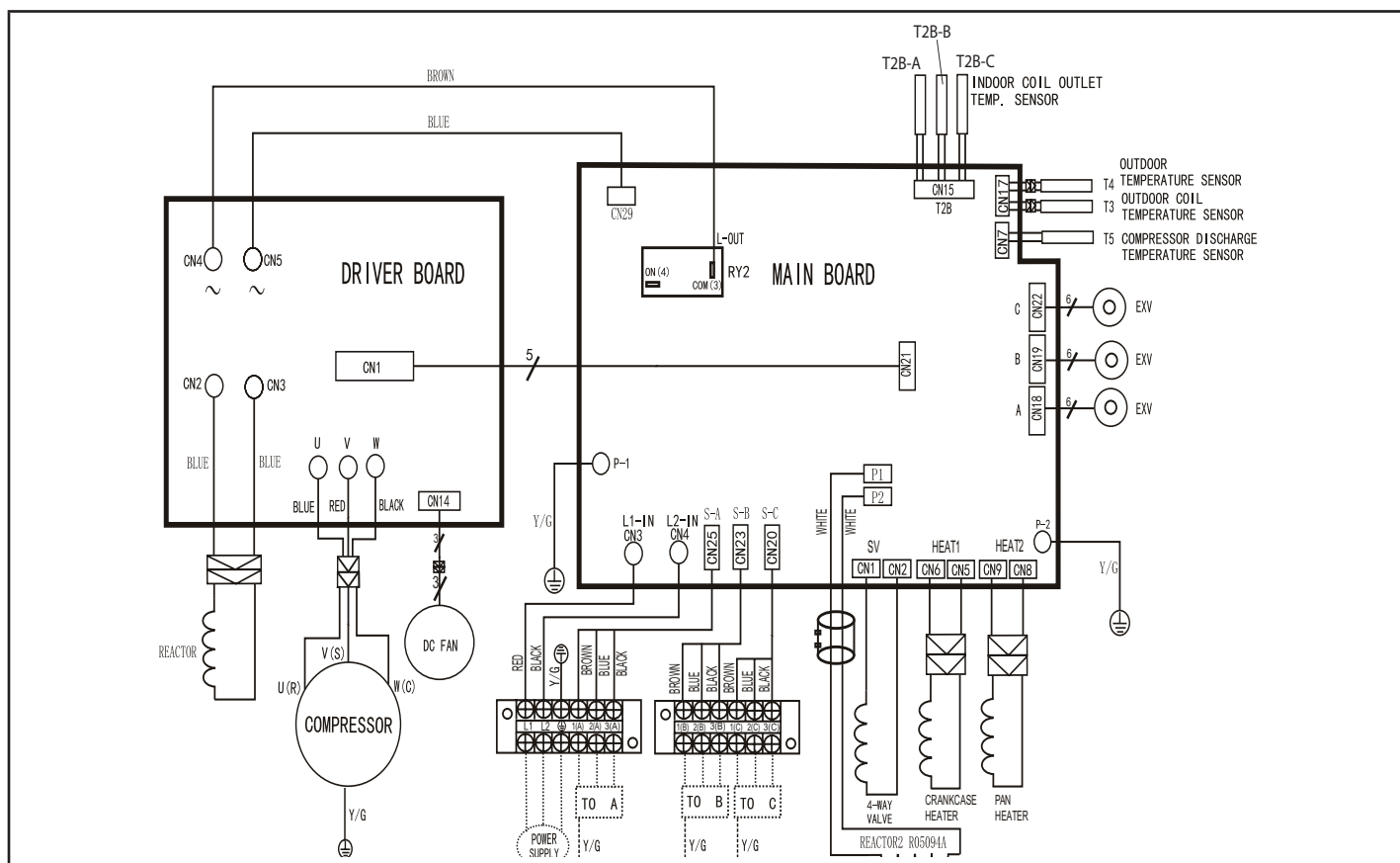
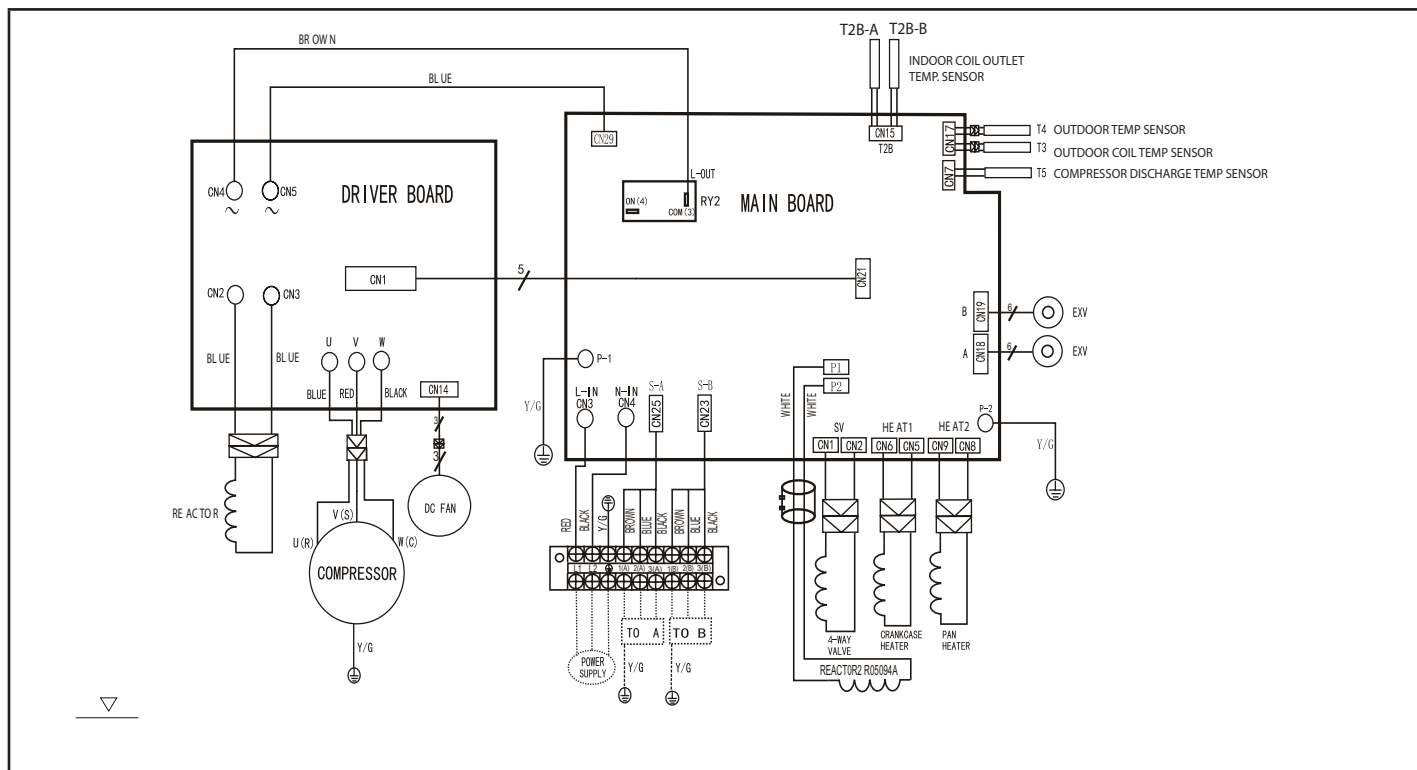


Figure 26. Connection Diagram

Table 7. Multi-Zone Installation Wiring Requirements

System and Terminal Designations	System Capacity	System Voltage	Number of Conductors	Wire Type	Wire Gauge / MCA
Indoor to Outdoor Unit					
Indoor to Outdoor Wiring - (Communication/Power) 1, 2, 3 and GND	09K and 12K	208/230VAC	4	Stranded and unshielded	16AWG
Indoor to Outdoor Wiring - (Communication/Power) 1, 2, 3 and GND	18K	208/230VAC	4	Stranded and unshielded	16AWG
Indoor to Outdoor Wiring - (Communication/Power) 1, 2, 3 and GND	24K	208/230VAC	4	Stranded and unshielded	16AWG
Multi-Zone Outdoor Unit to Main Power					
Outdoor to Main Power - L1, L2 and GND	18K	208/230VAC	3	Stranded and unshielded	14AWG / 18A
Outdoor to Main Power - L1, L2 and GND	30K	208/230VAC	3	Stranded and unshielded	12AWG / 25A
Outdoor to Main Power - L1, L2 and GND	36K	208/230VAC	3	Stranded and unshielded	10AWG / 30A
Outdoor to Main Power - L1, L2 and GND	48K	208/230VAC	3	Stranded and unshielded	8AWG / 35A
MCA = Minimum Circuit Amps					



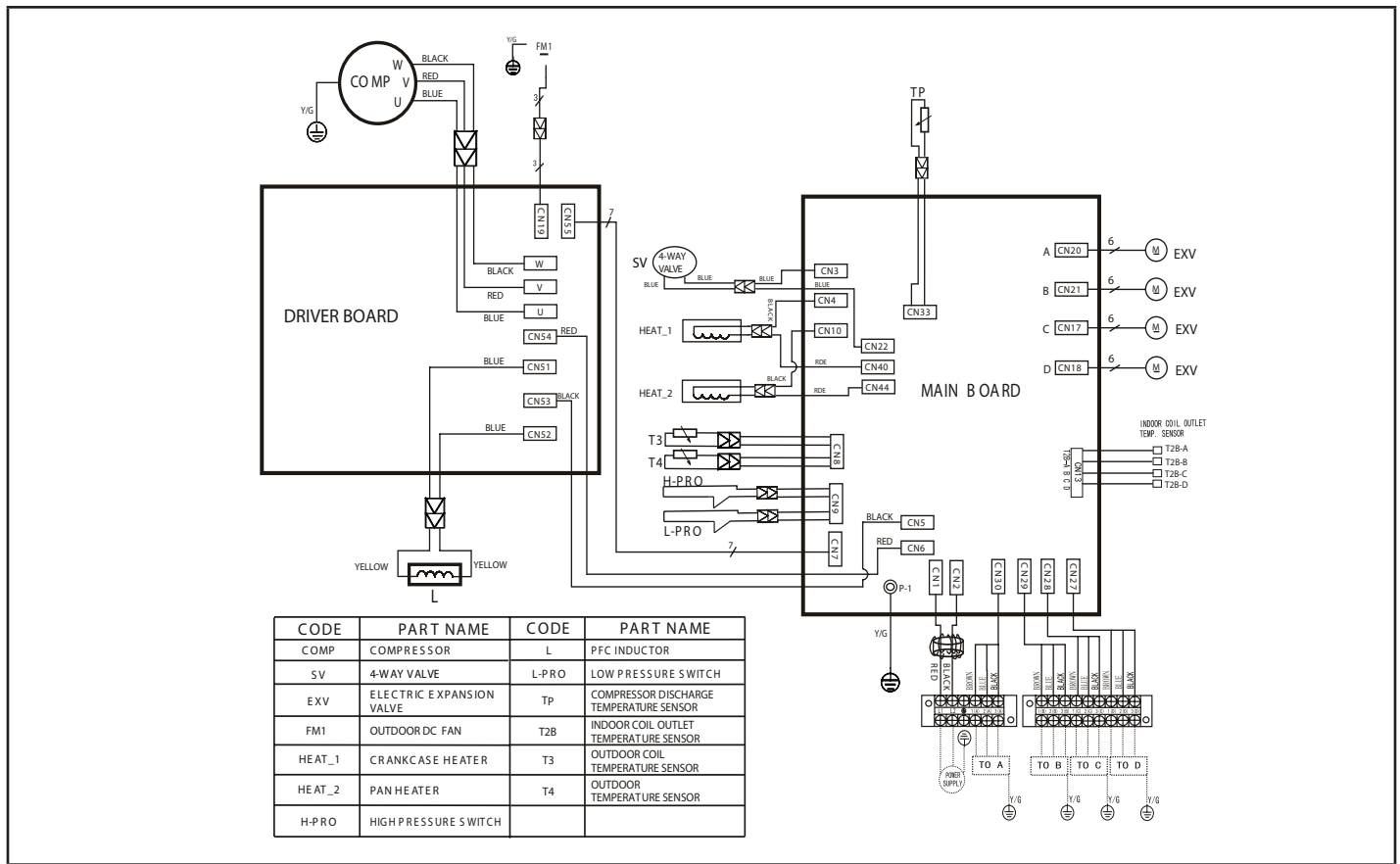


Figure 29. MPB036S4M-*P Outdoor Unit Wiring Diagram

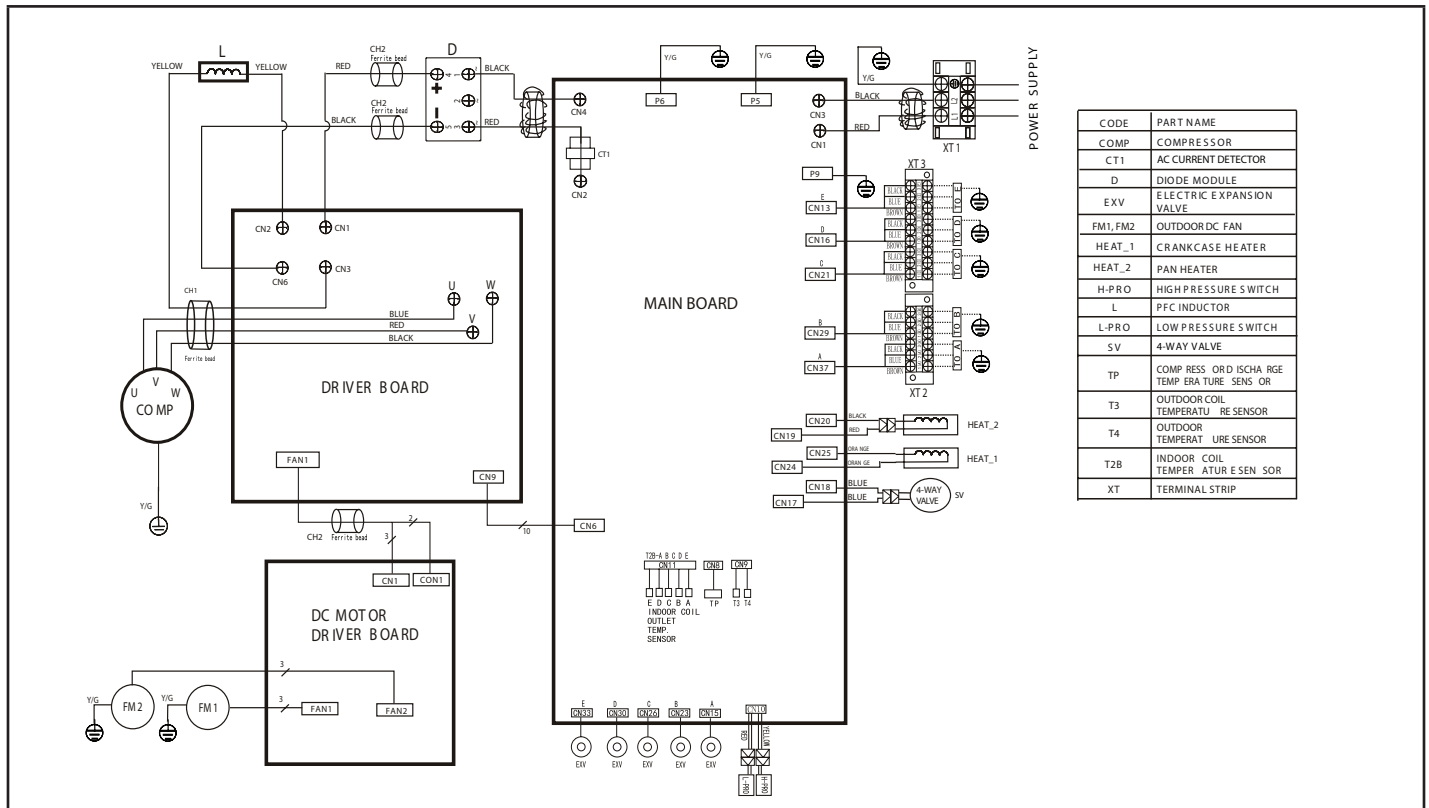


Figure 30. MPB048S4M-*P Outdoor Unit Wiring Diagram

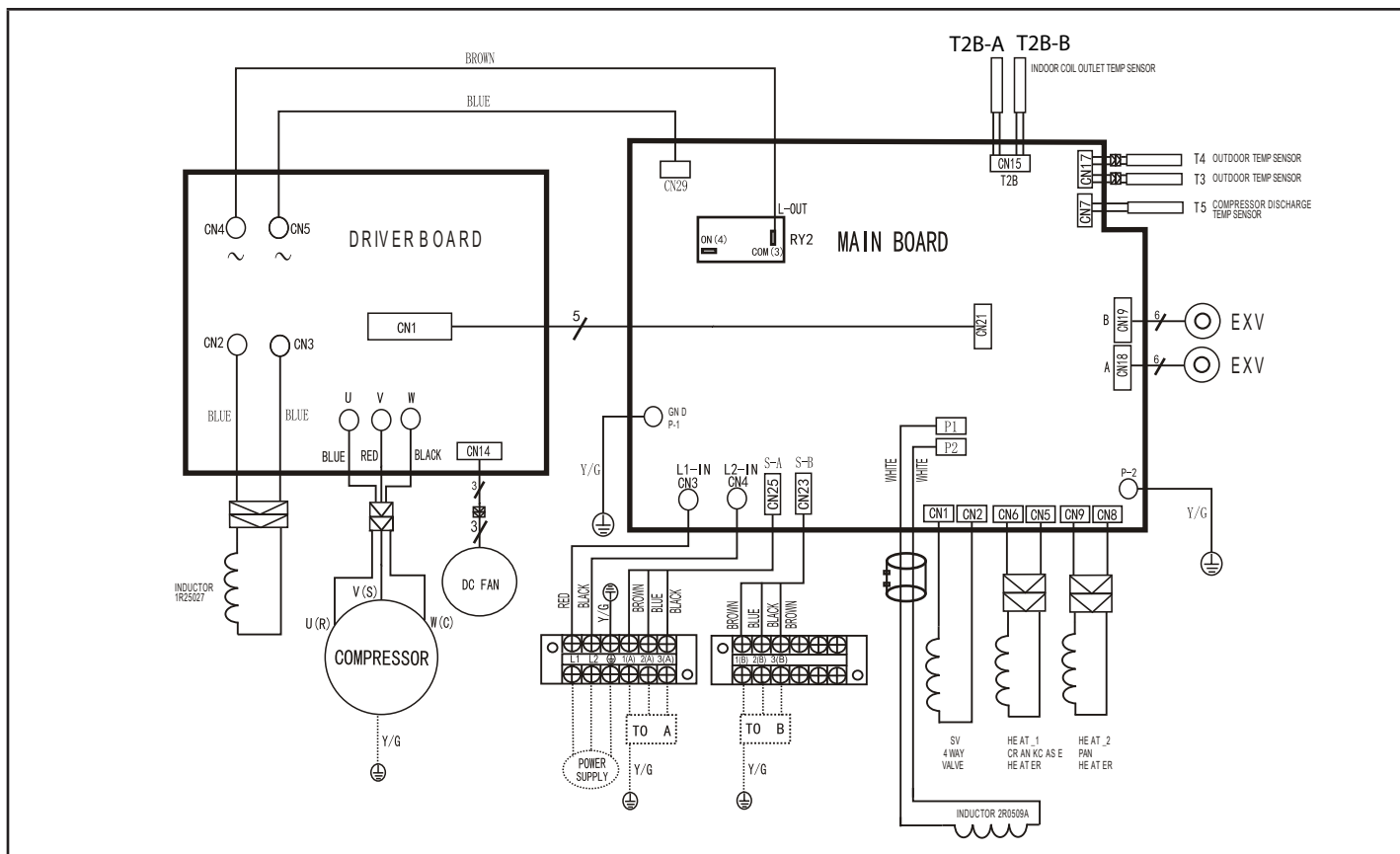


Figure 31. MLA018S4M-P Outdoor Unit Wiring Diagram

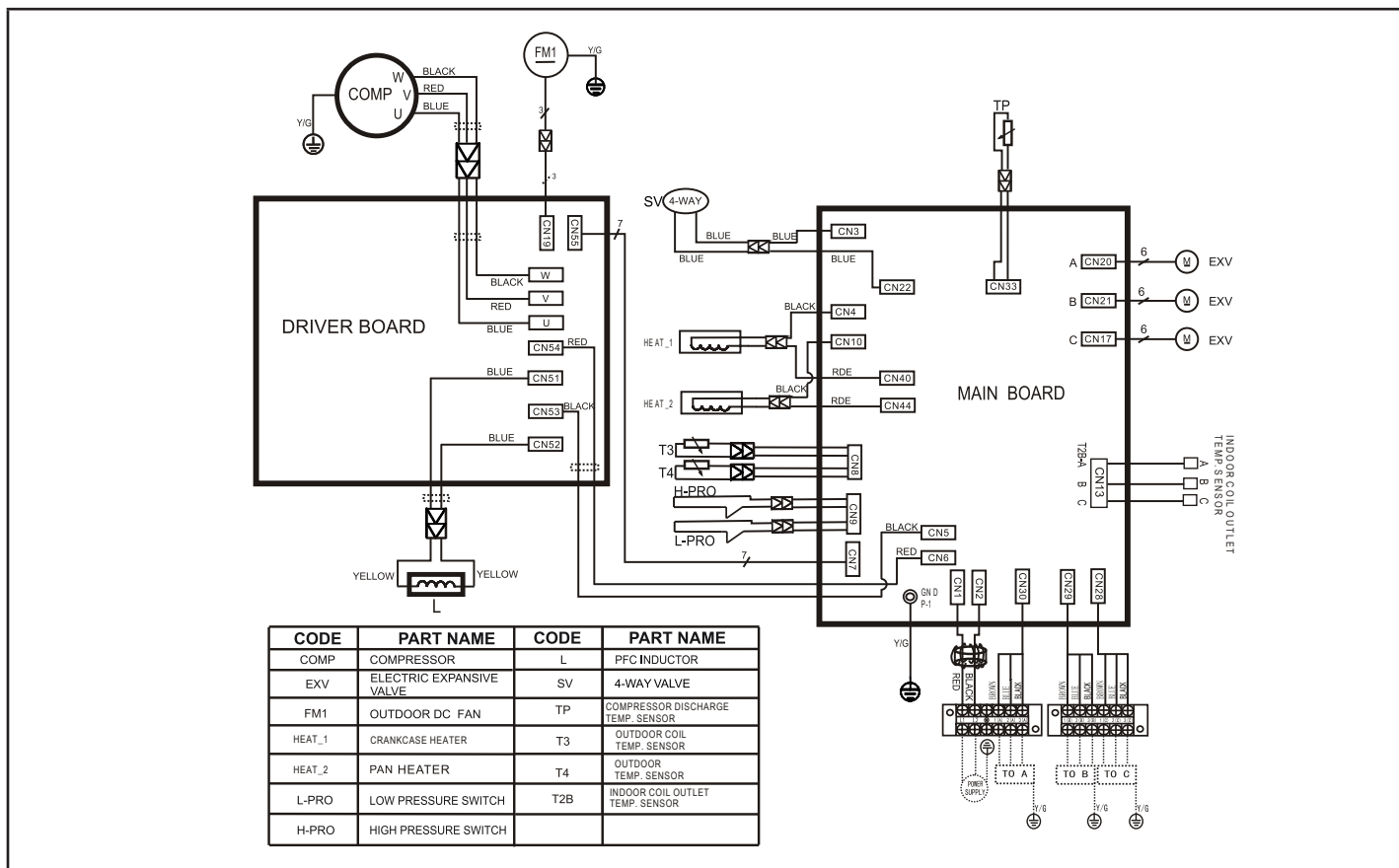


Figure 32. MLA030S4M-P Outdoor Unit Wiring Diagram

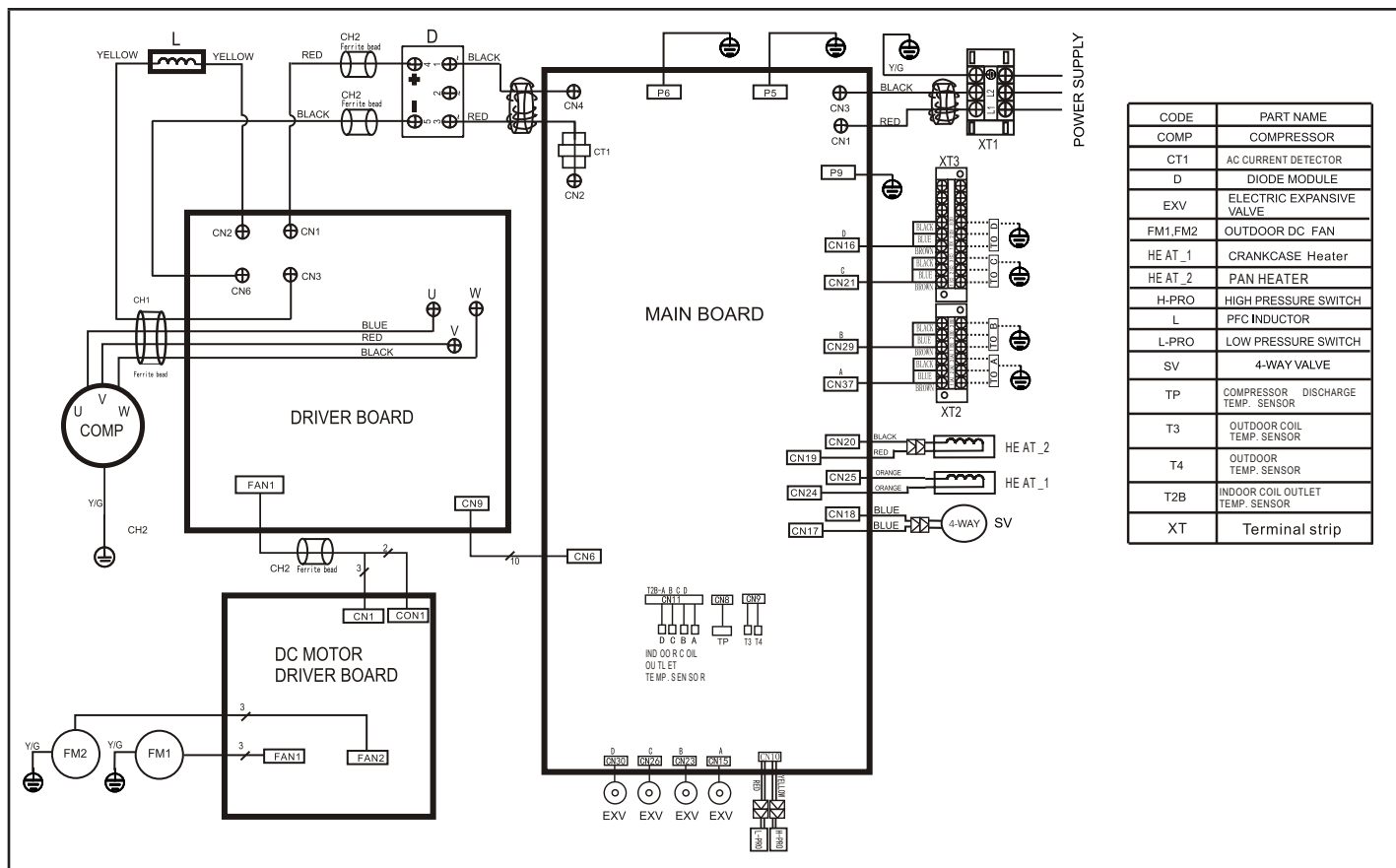


Figure 33. MLA036S4M-P Outdoor Unit Wiring Diagram

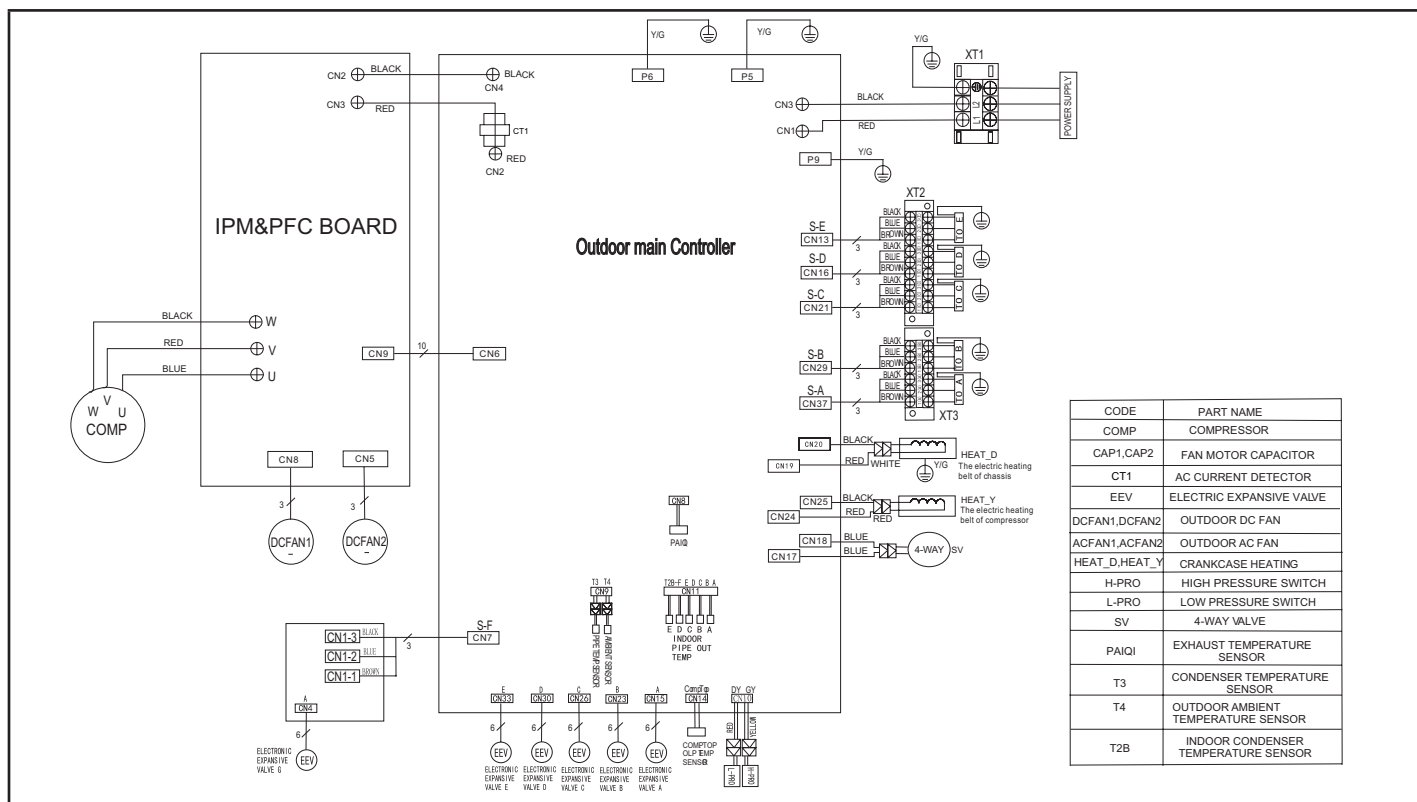


Figure 34. MLB048S4M-P Outdoor Unit Wiring Diagram

Unit Start-Up

IMPORTANT

Units should be energized 24 hours before unit start-up to prevent compressor damage as a result of slugging.

1. Inspect all factory-installed and field-installed wiring for loose connections.
2. Verify that the manifold gauge set is connected.
3. Add additional refrigerant charge if required before opening valves and while system is still under a vacuum.
4. Open the liquid and gas line master valves and each individual port's service valve to release the refrigerant charge contained in outdoor unit into the system.
5. Replace the stem caps and tighten to the value listed in "Table 1. Torque Requirements" on page 6.
6. Check voltage supply at the outdoor unit terminal strip. The voltage must be within the range listed on the unit's nameplate. If not, do not start the equipment until you have consulted with the power company and the voltage condition has been corrected.
7. Refer to the included user guide to operate the system using the provided remote control.
8. Visually check for binding of both indoor and outdoor fans.

Refrigerant Charge

The outdoor unit is factory-charged with refrigerant. Calculate the additional refrigerant required according to the length of the liquid pipe (one way) between the outdoor unit and indoor unit connections.

Be sure to add the proper amount of additional refrigerant. Failure to do so may result in reduced performance.

Table 8. Refrigerant Charge

System	Pre-charge Pipe Length	Amount of Refrigerant to add
Two-port	50 ft. (15 m)	0.16 oz ((L1 ft + L2 ft) - 50 ft) 0.005 kg ((L1 m + L2 m) - 15 m)
Three-port	75 ft. (23 m)	0.16 oz ((L1 ft + L2 ft + L3 ft) - 75 ft) 0.005 kg ((L1 m + L2 m + L3 m) - 23 m)
Four-port	100 ft. (30 m)	0.16 oz ((L1 ft + L2 ft + L3 ft + L4 ft) - 100 ft) 0.005 kg ((L1 m + L2 m + L3 m + L4 m) - 30 m)
Five-port	125 ft. (38 m)	0.16 oz ((L1 ft + L2 ft + L3 ft + L4 ft + L5 ft) - 125 ft) 0.005 kg ((L1 m + L2 m + L3 m + L4 m + L5 m) - 38 m)

Multi-Zone Outdoor Unit Error Codes

Table 9. Multi-Zone Outdoor Unit Error Codes

Display	Error Description
E0	Outdoor unit EEPROM error.
E2	Communication error between outdoor unit and all indoor units.
E3	Communication error between outdoor unit main control and IPM control.
E4	Temperature sensor error (outdoor coil, outdoor ambient, compressor discharge and indoor unit coil outlet temperature sensors).
E5	High and low voltage protection.
E8	Outdoor DC fan speed error.
F1	Indoor unit #1 coil outlet temperature sensor error.
F2	Indoor unit #2 coil outlet temperature sensor error.
F3	Indoor unit #3 coil outlet temperature sensor error.
F4	Indoor unit #4 coil outlet temperature sensor error.
F5	Indoor unit #5 coil outlet temperature sensor error.
F6	Indoor unit #6 coil outlet temperature sensor error.
P1	High pressure switch open
P2	Low pressure switch open
P3	Outdoor compressor current overload sensed.
P4	High temperature sensed at compressor discharge line.
P5	High temperature sensed at outdoor coil.
P6	Inverter module (IPM) error.