HITACHI

TECHNICAL CATALOG

AIR CONDITIONERS

airCore 700

LOW AMBIENT HEATING SERIES

MODELS

< Indoor Units >

- MESP Ducted Type
  PPIM-B12UFA1DQ PPIM-B18UFA1DQ PPIM-B24UFA1DQ
  PPIM-B30UFA1DQ PPIM-B36UFA1DQ
- 4-Way Mini Cassette Type
  PCIM-B12UFA1DQ
- 4-Way Cassette Type
  PCI-B18UFA1DQ PCI-B24UFA1DQ PCI-B30UFA1DQ
  PCI-B36UFA1DQ
- High-wall Type
  PPK-B30UFA1DQ
- Air Handlers Type
  JPE18B3XB2HS1A JPE24B3XC2HS1A JPE36B3XD2HS1A

< Outdoor Units >

PAS-12BLFASDQ1 PAS-18BLFASDQ1 PAS-24BLFASDQ1
PAS-30BLFASDQ1 PAS-36BLFASDQ1

EN TECHNICAL CATALOG
Original Instructions

Cooling & Heating

HC2024583B

IMPORTANT NOTICE

- HITACHI pursues a policy of continuing improvement in design and performance of products. The right is therefore reserved to vary specifications without notice.
- HITACHI cannot anticipate every possible circumstance that might involve a potential hazard.
- This heat pump air conditioner is designed for human comfort air conditioning only. Do not use this heat pump air conditioner for other purposes such as drying clothes, refrigerating foods or for any other cooling or heating purposes.
- Do not install the unit in the following places. It may cause a fire, deformation, corrosion or failure.
  * Places where oil (including machinery oil) may be present in quantities.
  * Places where a lot of sulfide gas drifts such as in a hot spring.
  * Places where inflammable gas may generate or flow.
  * Places where strong salty wind blows such as coast regions.
  * Places with an atmosphere of acidity or alkalinity.
- Do not install the unit in the place where silicon gas drifts. If the silicon gas attaches to the surface of heat exchanger, the fin surface repels water. As a result, drain water splashes outside of the drain pan and splashed water runs inside of electrical box. In the end, water leakage or electrical devices failure may occur.
- Pay attention to the following points when the unit is installed in a hospital or other facilities where an electromagnetic wave generates from a medical equipment.
  * Do not install the unit in the place where an electromagnetic wave is directly radiated to the electrical box, remote control cable or remote control switch.
  * Install the unit at least 10ft (3m) away from an electromagnetic wave such as a radio.
- Do not install the unit in the place where the breeze directly catches animals and plants. It could adversely affect animals and plants.
- The installer and system specialist shall secure safety against the refrigerant leakage according to local regulations or standards. The following standards may be applicable, if local regulations are not available. International Organization for Standardization, ISO5149 or European Standard, EN378 or Japan Standard, KHKS0010.
- No part of this manual may be reproduced without written permission.
- It is assumed that this heat pump air conditioner will be operated and serviced by persons conversant in English. If this is not the case, the distributor should add safety, caution and operating signs in the native language.
- If you have any questions, contact your distributor or dealer of HITACHI.
- This manual gives a common description and information for this heat pump air conditioner which you operate as well for other models.
- This system has been designed and tested to operate within the outdoor temperature limits as stated below. The manufacturer cannot guarantee satisfactory performance if the unit is operated for prolonged periods outside of these limits.

[°F(°C)]

Operation Temperature Range		Maximum	Minimum
Cooling Operation	Indoor	89.6(32) DB/73.4(23) WB	69.8(21) DB/59(15) WB
	Outdoor	115(46) DB	0(-18) DB
Heating Operation	Indoor	80.6(27) DB	68.0(20) DB
	Outdoor	75(24) DB	-13(-25) DB

DB: Dry Bulb, WB: Wet Bulb

In the heating operation at low outdoor ambient temperature, indoor unit fan may run at the lower speed, which is a normal phenomenon.

CHECKING PRODUCT RECEIVED

- Upon receiving this product, inspect it for any shipping damage.
  Claims for damage, either apparent or concealed, should be filed immediately with the shipping company.
- Check the model number, electrical characteristics (power supply, voltage and frequency) and accessories to determine if they are correct.

The standard utilization of the unit shall be explained in these instructions.
Therefore, the utilization of the unit other than those indicated in these instructions is not recommended. Please contact your local agent, as the occasion arises.
HITACHI's liability shall not cover defects arising from the alteration performed by a customer without HITACHI's consent in a written form.

SAFETY SUMMARY

< Signal Words >

- Signal words are used to identify levels of hazard seriousness.
  Definitions for identifying hazard levels are provided below with their respective signal words.

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTE

NOTE indicates useful information for operation and/or maintenance.

SAFETY SUMMARY

⚠ DANGER

- Do not perform the installation work, refrigerant piping work, drain pump, drain piping and electrical wiring connection without referring to our installation manual. If the instructions are not followed, it may result in a water leakage, electric shock or fire.
- Use the specified flammable refrigerant (R32) to the outdoor unit in the refrigerant cycle.
  Do not charge material other than R32 into the unit.
- Do not pour water into the indoor or outdoor unit. These products are equipped with electrical parts.
  If poured, it will cause a serious electrical shock.
- Do not open the service cover or access panel for the indoor or outdoor unit without turning OFF the main power supply.
- Do not touch or adjust safety devices inside the indoor unit or outdoor unit. If these devices are touched or readjusted, it may cause a serious accident.
- Refrigerant leakage can cause difficulty with breathing due to insufficient air. Turn OFF the main switch, extinguish any naked flames and contact your service contractor, if refrigerant leakage occurs.
- Make sure that the refrigerant leakage test should be performed.
  Refrigerant for this unit is flammable, colorless and odorless.
  If refrigerant gas leaks during installation, ventilate the area immediately. Refrigerant gas may produce toxic gas if it comes into contact with fire. Exposure to this gas could cause severe injury or death.
  Also because the fluorocarbon is heavier than air, the floor surface will be filled with it, which could cause suffocation.
- The installer and system specialist shall secure safety against refrigerant leakage according to local regulations or standards.
- Use an ELB (Earth Leakage Breaker).
  In the event of fault, there is danger of an electric shock or fire if it is not used.
- Do not install the outdoor unit where there is high level of oil mist, flammable gases, salty air or harmful gases such as sulfur.
- For installation, firmly connect the refrigerant pipe before the compressor starts operating.
  For maintenance, relocation and disposal, remove the refrigerant pipe after the compressor stops.
- Do not perform a short-circuit of the protection device such as the pressure switch when operating.
  It may cause fire and explosion.

SAFETY SUMMARY

⚠ WARNING

- Do not use any sprays such as an insecticide, lacquer, hair spray or other flammable gases within approximately 3.3ft (1m) from the system.
- If the circuit breaker or fuse is often activated, stop the system and contact your service contractor.
- Check that the ground wire is securely connected. If the unit is not correctly grounded, it lead electric shock. Do not connect the ground wiring to a gas piping, water piping, lighting conductor or ground wiring for telephone.
- Connect a fuse of specified capacity.
- Before performing any brazing work, check to ensure that there is no flammable material around. When using the refrigerant be sure to wear leather gloves to prevent cold injuries.
- Protect the wires, electrical parts, etc. from rats or other small animals. If not protected, rats may gnaw at unprotected parts and which may lead to fire.
- Fix the cables securely. External forces on the terminals could lead to fire.
- Perform the electrical work according to Installation Manual and all the relevant regulation and standards. If the instructions are not followed, an electrical shock and fire may occur due to insufficient capacity and inadequate performance.
- Use specified cables between units and choose the cables correctly. If not, an electrical shock or fire may occur.
- Ensure that the wiring terminals are tightened securely with the specified torques. If not, generating fire or an electrical shock at the terminal connection part may occur.

⚠ CAUTION

- Do not step or put any material on the product.
- Do not put any foreign material on the unit or inside the unit.
- Provide a strong and correct foundation so that;
  a. The outdoor unit is not on an incline.
  b. Abnormal sound does not occur.
  c. The outdoor unit will not fall down due to a strong wind or earthquake.

NOTES:

- It is recommended that the room will be ventilated every 3 to 4 hours.
- Dismantling the unit, treatment of the refrigerant, oil and additional parts must be done in accordance with the relevant local, state, and national regulations.
- As maximum allowable pressure is 602psig (4.15MPa), minimum allowable pressure is 321psig (2.21MPa), the wall thickness of field-installed pipes should be selected in accordance with the relevant local, state, and national regulations.

Technical Data

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1. Features

1.1 System Features

New DC Inverter airCore 700 Single Split Series

HITACHI proudly introduces the New DC Inverter airCore 700 Single Split Series, the highly-efficient and reliable air conditioning system, for the North American market.

This product line covers a capacity range of 12K to 36K. There are various types of indoor units (such as MESP Ducted and 4-Way Mini Cassette, 4-Way Cassette, High-wall, Air Handlers) suitable for different light commercial air conditioning applications.

New Line-up of Indoor and Outdoor Units

Capacity		12K	18K	24K	30K	36K
Indoor Units						
Ducted	MESP Ducted	PPIM-B12UFA1DQ	PPIM-B18UFA1DQ	PPIM-B24UFA1DQ	PPIM-B30UFA1DQ	PPIM-B36UFA1DQ
Cassette	4-Way Mini Cassette	PCIM-B12UFA1DQ	/	/	/	/
	4-Way Cassette	/	PCI-B18UFA1DQ	PCI-B24UFA1DQ	PCI-B30UFA1DQ	PCI-B36UFA1DQ
High-wall		/	/	/	PPK-B30UFA1DQ	/
Air Handlers		/	JPE18B3XB2HS1A	JPE24B3XC2HS1A	/	JPE36B3XD2HS1A
Outdoor Units						
Single Phase		PAS-12BLFASDQ1	PAS-18BLFASDQ1	PAS-24BLFASDQ1	PAS-30BLFASDQ1	PAS-36BLFASDQ1

NOTE:

- For an outdoor unit, it can be used separately with different indoor units, which is beneficial for managing inventory models.

1.2 Appearance

< Indoor Units >

MESP Ducted Type

PPIM-B12~B36UFA1DQ

4-Way Mini Cassette Type

PCIM-B12UFA1DQ

4-Way Cassette Type

PCI-B18~B36UFA1DQ

High-wall Type

PPK-B30UFA1DQ

Air Handlers Type

JPE18B3XB2HS1A
JPE24B3XC2HS1A
JPE36B3XD2HS1A

< Outdoor Units >

PAS-12BLFASDQ1
PAS-18BLFASDQ1

PAS-24BLFASDQ1
PAS-30BLFASDQ1

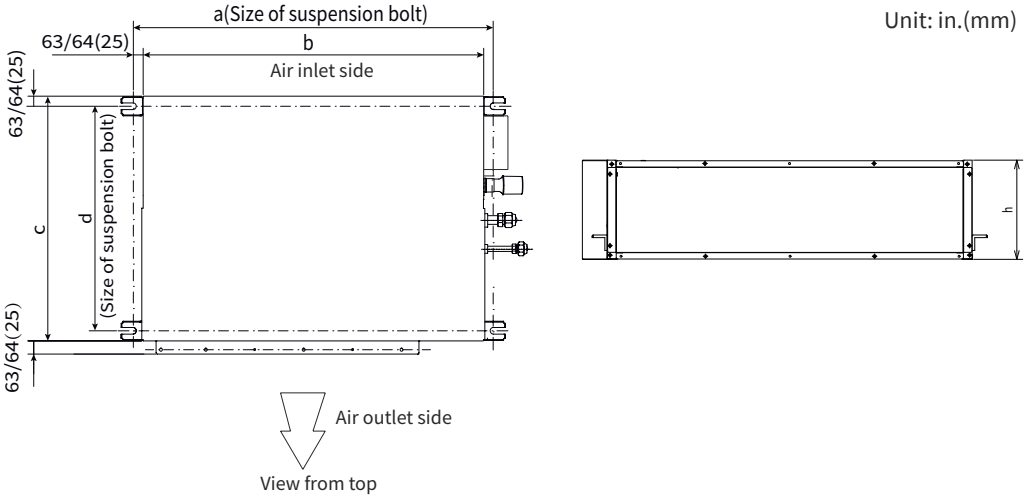
PAS-36BLFASDQ1

1.3 Features on Indoor Units

1.3.1 MESP Ducted Type

☐ Space Saving Design

Installation size is shown in the following figure (PPIM-B12~B36UFA1DQ).



Unit: in.(mm)

Size

Unit: in.(mm)

Indoor Unit Capacity (Btu/h)	a	b	c	d	h
12K	27-9/16 (700)	25-19/32 (650)	28-11/32 (720)	26-39/64 (676)	10-5/8 (270)
18K~30K	45-9/32 (1150)	43-5/16 (1100)	31-1/2 (800)	29-49/64 (756)	11-13/16 (300)
36K	57-3/32 (1450)	55-1/8 (1400)	31-1/2 (800)	29-49/64 (756)	11-13/16 (300)

☐ Adjustable Fan Speed

The air flow volume can be changed according to the external static pressure by setting the item code to C5 from the wired remote controller, please refer to the "chapter6.Function Selection" of Installation & Maintenance Manual of the wired remote controller for details.

Model	External Static Pressure In.WG(Pa)	Setting of Wired remote controller
PPIM-B12UFA1DQ	0.3(75)	00
	0.4(90)	01
	0.6(150)	02
PPIM-B18UFA1DQ PPIM-B24UFA1DQ PPIM-B30UFA1DQ PPIM-B36UFA1DQ	0.3(75)	00
	0.6(150)	01
	0.8(200)	02

☐ Quiet Operation

The well-balanced centrifugal fan provides a quiet and efficient operation.

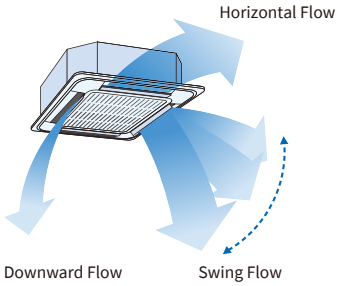
Fan Operation Sound (Air Flow Rate:Hi2/SLo)

Model Capacity (Btu/h)		12K	18K	24K	30K	36K
Sound Level dB(A) (Standard Pressure Setting)	Hi2	40	35	38	41	43
	SLo	32	26	27	30	32

1.3.2 4-Way Cassette Type & 4-Way Mini Cassette Type

☐ Comfortable Function (4-Way Cassette Type & 4-Way Mini Cassette Type)

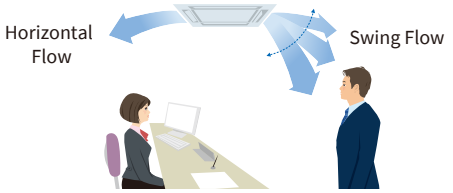
(1) Airflow can be controlled by adjusting four louvers individually.
A comfortable air-conditioned environment can be provided by various louver settings depending on the situation.



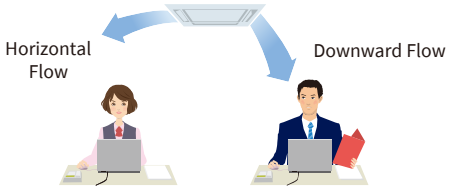
Air conditioning comfort is improved using a louver control function to adjust louvers individually for better control of airflow direction. One option adjusts the louver horizontally to avoid direct airflow toward individuals. Another option provides an individual swing operation to discharge enough airflow.

The airflow direction can be selected according to the situation.

Example 1: At Front Desk

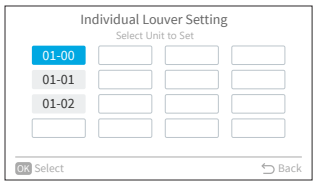


Example 2: At Office



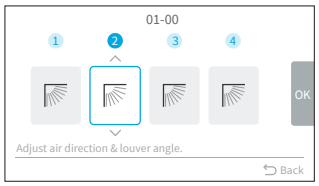
(2) Easy setting of each louver airflow direction using a wired remote controller (CIW03-H).

Indoor Unit Selection



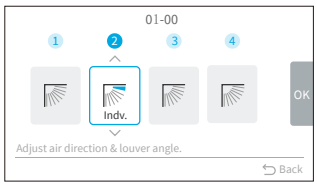
Individual louver setting is possible with one wired remote controller for multiple indoor units.

Louver Selection to Set



After selecting the indoor unit, select one louver to set.
At this time, the selected louver of the indoor unit opens.

Louver Angle Adjustment



Louver angle can be selected to fixed airflow direction or swing flow.

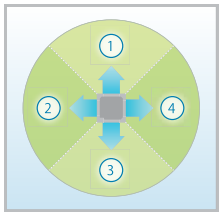
☐ Motion Sensor (4-Way Cassette Type)

(1) An air panel with a motion sensor can intelligently detect human activity and furniture heat signatures. Air conditioning comfort is improved with four motion sensors and one heat-detecting sensor equipped with the air panel.

* Motion Sensor
Infrared is always radiated from humans and objects.
The motion sensor uses infrared in a “detecting area” to detect human energy.

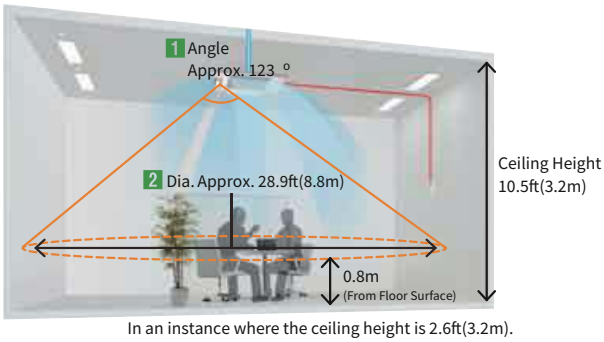
* Radiation Sensor
The radiation sensor measures the temperature in its detecting area through radiated infrared from humans and objects.

Detecting Area of Motion Sensors (Viewed from Ceiling)

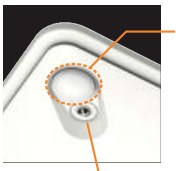


The motion sensors’ detecting area is divided into four separate areas as shown above.

Detecting Area (Example)



In an instance where the ceiling height is 2.6ft(3.2m).



Motion Sensor

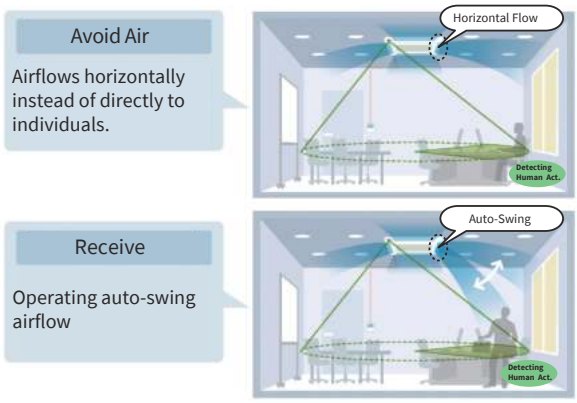
Four motion sensors are installed in this area.

Radiation Sensor

NOTES:

- The motion sensor detects human activity. However, if someone is in a room with very little activity, the motion sensors may not detect motion.
- The motion sensor may detect human activity if the indoor unit with the motion sensor is installed near a moving object which has a temperature different than the environment.
- The motion sensors may detect no activity if the indoor unit is installed on a high ceiling of 13ft(4m) or more, or fingerprints or contaminants are on the motion sensors’ lenses, even if someone is in the room.

(2) Airflow direction for each area can be automatically adjusted by detecting human activity with four motion sensors.



Four motion sensors divide air conditioning space into four areas to detect human activity in each area separately.

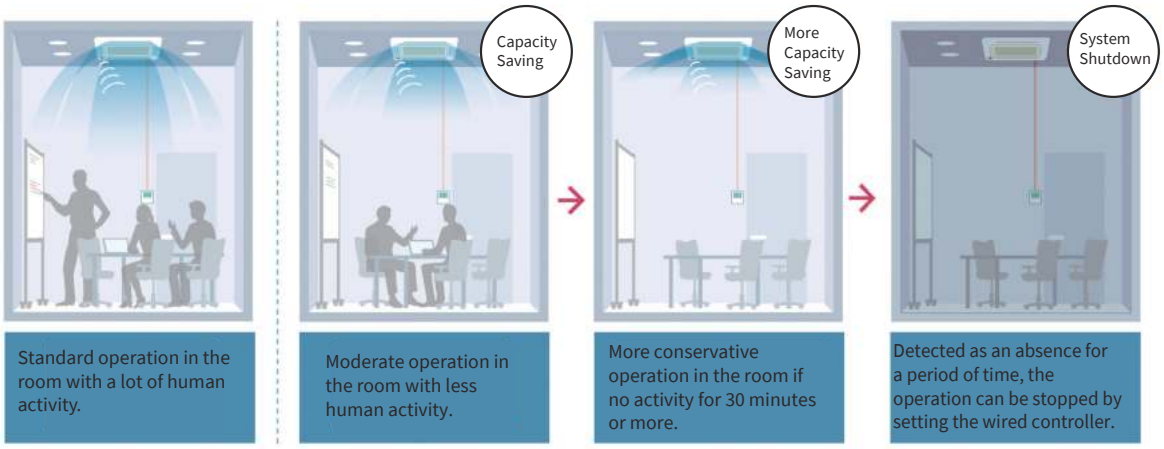
Each louver of the indoor unit is related to an individual area to adjust airflow direction.

The airflow direction for each area where activity is detected automatically is adjusted between “Avoid Air” or “Receive” settings on the wired remote controller.

NOTE:

- When the motion sensor detects no activity, the airflow direction is adjusted by the user setting directions on the wired remote controller.

(3) With a motion sensor, air conditioning capacity is saved automatically depending on the situation and the amount of detected human activity.



- Setting the motion sensor requires the wired remote controller.
- During heating operation, a correction factor of the temperature setting may make the environment too cool.
- The default setting is “Continuous Running”. However, “Automatic Stop” can be selected using the wired remote controller. In addition, after starting the operation, setting a stop time can be changed by the wired remote controller.

☐ Radiation Sensor (4-Way Cassette Type & 4-Way Mini Cassette Type)

The radiation temperature sensor can adjust airflow direction and airflow volume if there is a big difference between the radiation temperature and setting temperature.

By setting “Floor HEAT Control” in an instance where there is a big difference between radiation temperature and setting temperature, the operation is as below:

(a) Warm air is discharged downward to increase airflow volume. *1)

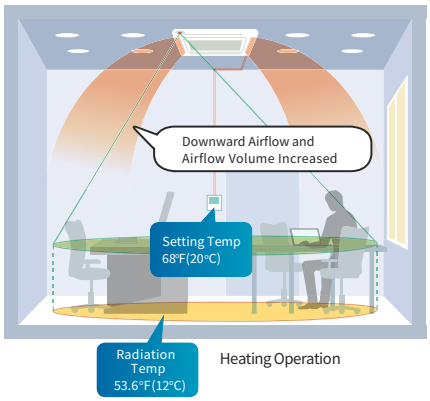
(b) When increased temperature reaches the setpoint, the airflow volume and airflow direction will return to the default setting position. *2)

*1) When there is human activity in a room, the air flows horizontally during the “Avoid Air” setting.

*2) When 60 minutes have passed after starting this function and the setpoint is not reached, the setting will return to the default setting.

NOTICE

- The effect of this function is dependent on the size of the room and air-conditioning load.



1.3.3 High-wall Type

☐ 24-hour Timer ON and OFF

This Timer can be set to automatically turn the unit on or off within a 24-hour period.

☐ Mute Operation

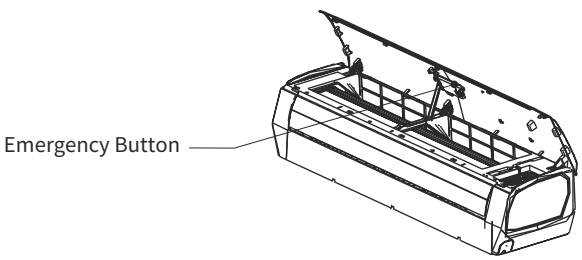
The excellent fan design enables smooth airflow with minimum noise.

☐ Powerful Mode From Hand-Held Remote Controller (HHRC)

In cooling or heating mode, the unit can be raise or lower the temperature immediately by pressing the "Powerful" button on the HHRC, turning on Powerful will change the temperature setting for 30 minutes and automatically set the airflow rate.

☐ Emergency Button

Pressing the emergency button can start or stop the unit, and it can also reset the filter indication.



1.3.4 Air Handlers Type

☐ Next generation high-efficiency blower
Delivers increased airflow and reduced blower watts by 10%, using a standard ECM motor.

☐ Next generation insulation and gasket design
Reduces thermal transmission paths and reduces sweating.

☐ Five speed standard ECM blower motor
Provides increased system compatibility.

☐ Electric heat kit
8HK field-installed series available for easy installation and service application.

☐ Designed for easy installation and service
A casing size of 20.5 in., smooth sides, and rigid construction provide ease of attic access and tight applications. Front facing components, slide out blower, laser cut knock outs and integrated duct flanges shorten install time.

☐ Cabinet air leakage
Less than 2% at 1 in. W.C. external static pressure when tested in accordance with ASHRAE Standard 193.

☐ Long lasting quality
Structural components made of postpowder painted steel or galvanized steel to prevent corrosion.

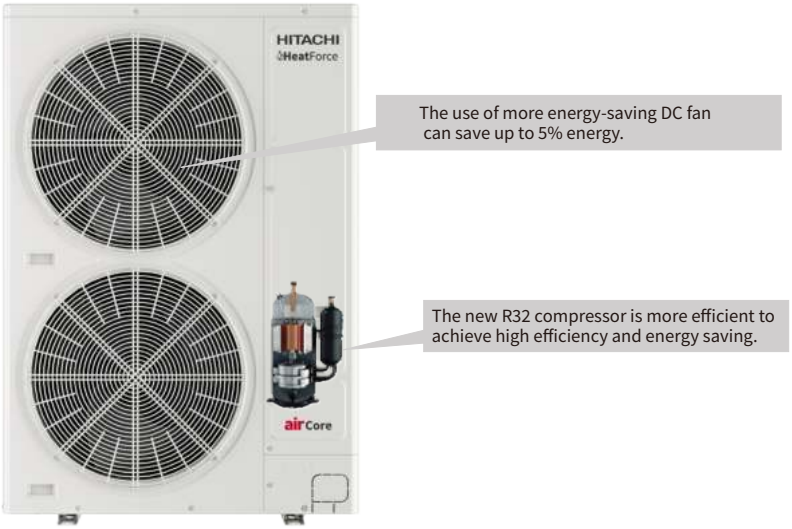
☐ A2L refrigerant ready
An R32 refrigerant detection sensor (RDS) is factory installed.

1.4 Features on Outdoor Units

☐ Energy-Saving

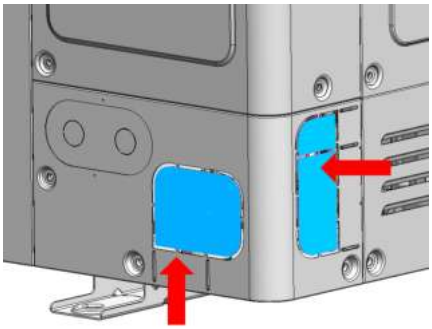
(1) The new R32 compressor is more efficient to achieve high efficiency and energy saving.

(2) The use of more energy-saving DC fan, up to 5% energy saving.

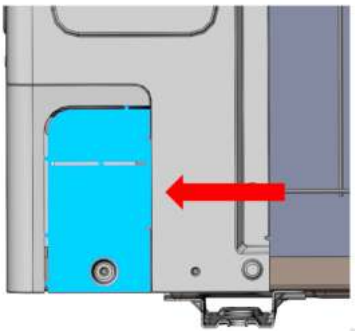


☐ Four Directions of Piping in Outdoor Unit

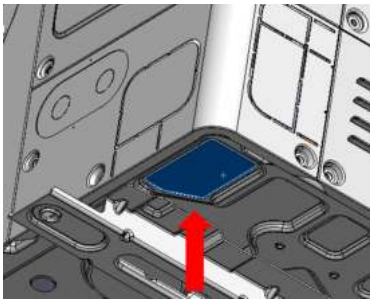
Front & Right



Rear



Bottom

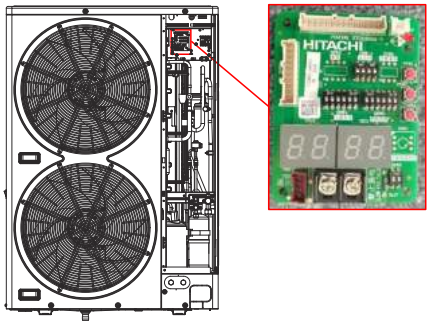


Stop valve built with 4-directional outlet piping for easier pipe installation.
The refrigerant pipes can connect the stop valves from the front and right, rear and bottom of the unit.

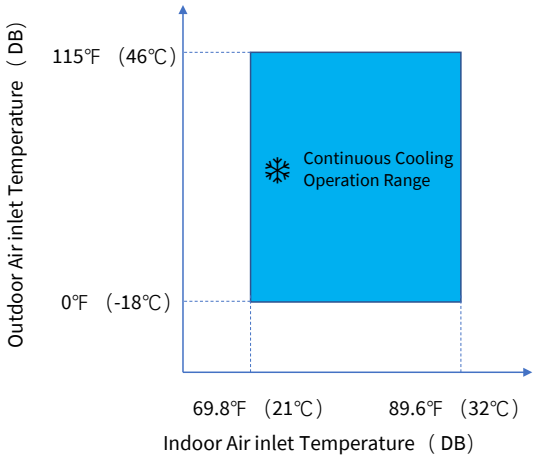
☐ User-friendly Service Board for Easier Testing and Diagnostics

User-friendly service board with dial code switch and push button is designed for easier testing and diagnostics.
The service board, which is located in the front of the outdoor unit, is easy to set.
Functions are as follows:

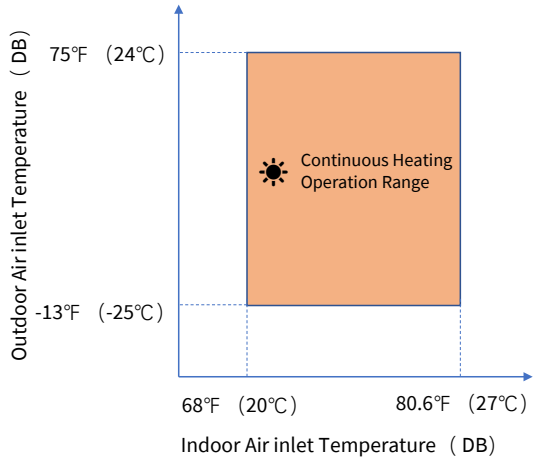
- Monitoring real-time running status
- Displaying the fault code for diagnostics



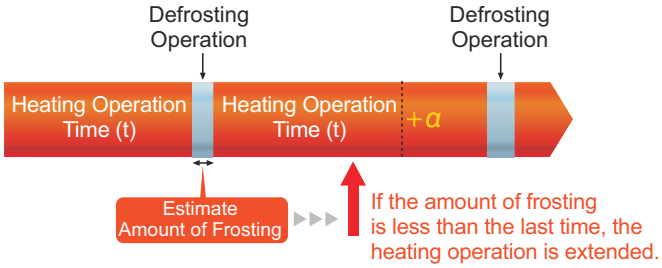
☐ Up to 115°F(46°C) Ambient Temperature for Cooling Operations
Up to 115°F(46°C) stable running
Special fresh air intake and trapezoid heat sink design are adopted for the inverter driver. This improves heat emission and allows the system to be running stably under high ambient conditions.



☐ As Low as -13°F(-25°C) Ambient Temperature for Heating Operations
As low as -13°F(-25°C) stable running



☐ Decreasing Defrosting Operation Time and Extend Heating Operation Time by Control depending on Amount of Frosting
The amount of frosting can be estimated by last defrosting time. If the amount of frosting is less than the last time, the heating operation until the defrosting operation is extended automatically.
As a result, an unnecessary defrosting operation is decreased and the continuous heating operation is available.



☐ Control the Time to Enter Defrost Mode by the Amount of Frost to Avoid Excessive Frost.
The amount of frost can be estimated by the temperature change of the heat exchanger. When the amount of frost is too large, the unit can enter the defrost mode in advance to avoid excessive frost formation of the heat exchanger and affect the user's comfort.

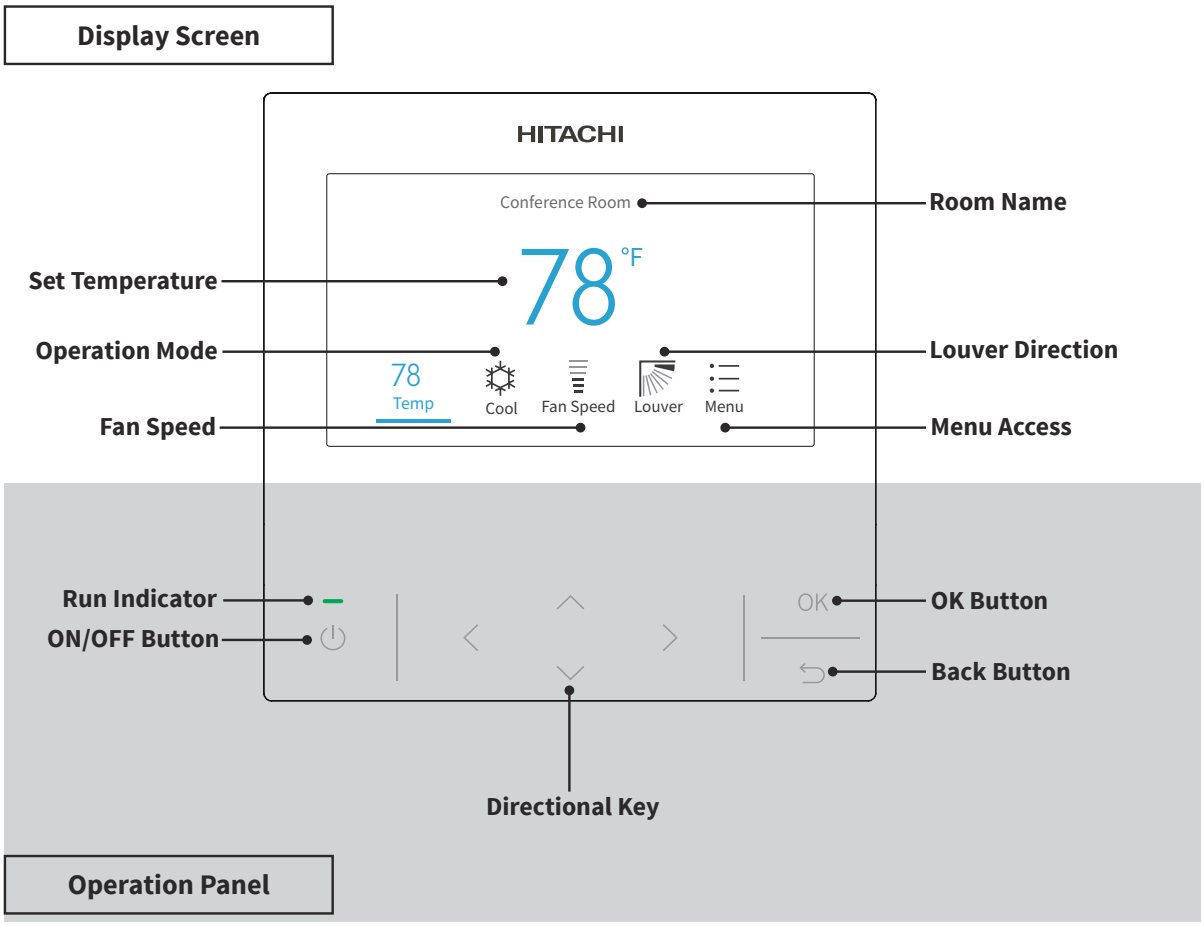
1.5 Features on Controllers

HITACHI provides the optional controllers for airCore 700 system.

Accessory	Model
Wired Remote Controller	CIW03-H
Wireless Remote Controller	PC-LH8QE
airCloud Adapter	GA-WFG-N
IR Receiver Kit	PC-ALH5Q
	PC-ALHC5Q
	PC-ALHZ5Q
Central Station	CCM01
	CCL01
Central Station EX	CCXL02
Remote Control Cable	PRC-5K
	PRC-10K
	PRC-15K

1.5.1 Wired Remote Controller

Model: CIW03-H

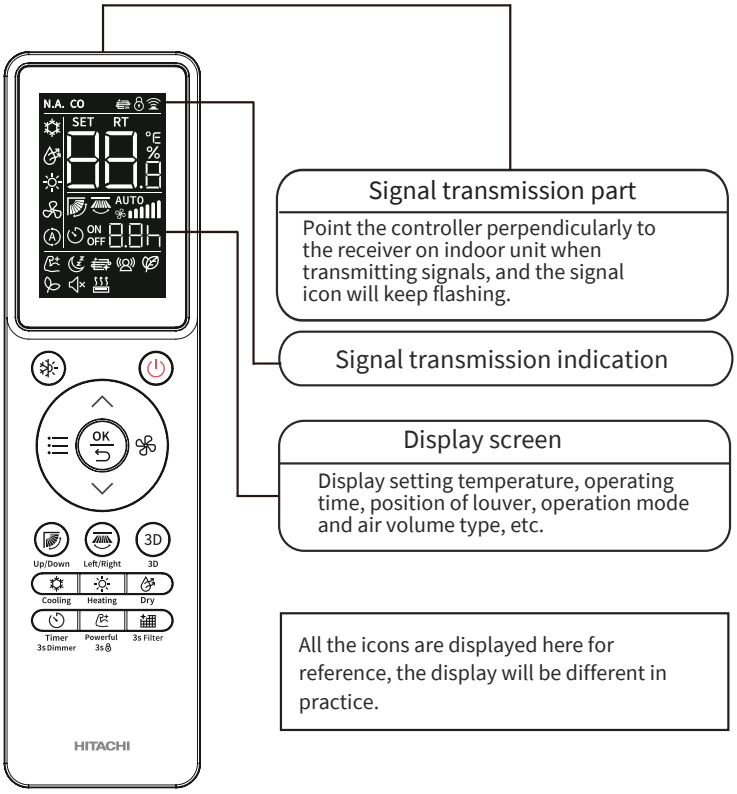


NOTES:

- If the screen is off or the backlight is dim, press any button to re-energise the screen.
- Make sure to press the buttons lightly with your fingertips.
- Do NOT press the buttons with any sharp objects as it may damage the button.

1.5.2 Wireless Remote Controller

Model: PC-LH8QE



Button Description:

	Mode		ON/OFF
	Temp. setting		Fan
	Louver up/down		Louver left/right
3D	3D Louver		Cool
	Heat		Dry
	Filter reset		Powerful
OK	Timer and additional functions setting/cancel		
	Sleep/Self-cleaning setting		
	Timed ON/OFF setting/cancel		

NOTES:

- airCore 700 indoor unit does not support Louver left/right and 3D Louver.
- There is no action when pressing these two buttons.
- Hold " " + " " for over 3s when the controller is OFF to select level 3, 4 or 6. More details see the operation manual of this product.

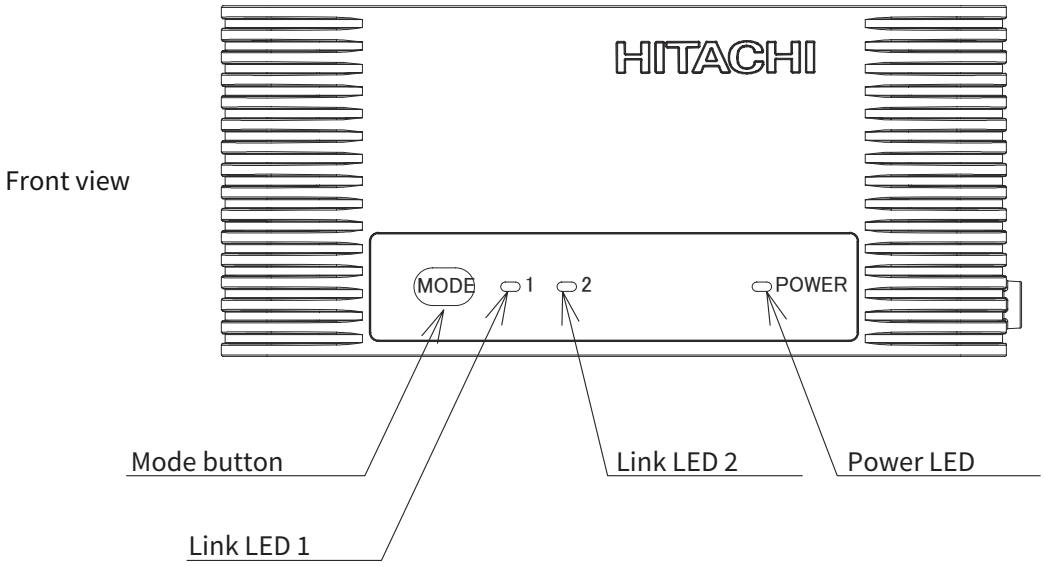
Indoor Unit	MESP Ducted	4-Way Mini Cassette/ 4-Way Cassette
Fan level	6-level	4-level

- High-wall indoor unit does not support Sleep/Self-cleaning setting.

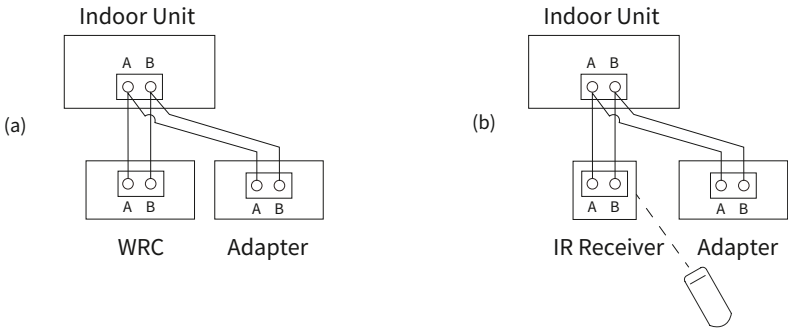
1.5.3 airCloud Adapter (Wi-Fi Adapter)

Model: GA-WFG-N

The figure below shows all the indications for reference. The actual display during operation is different.

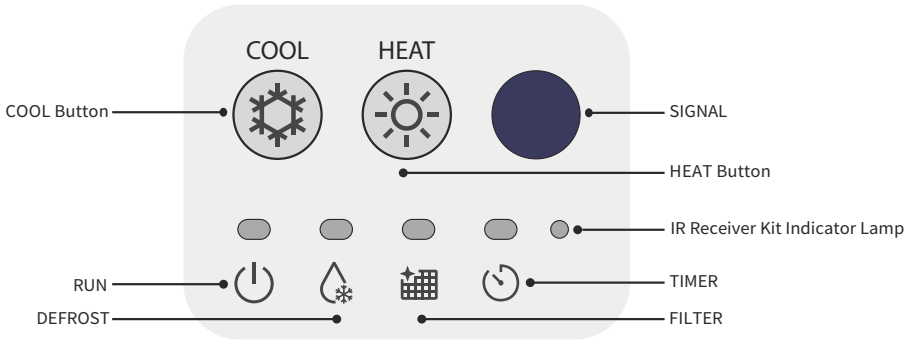


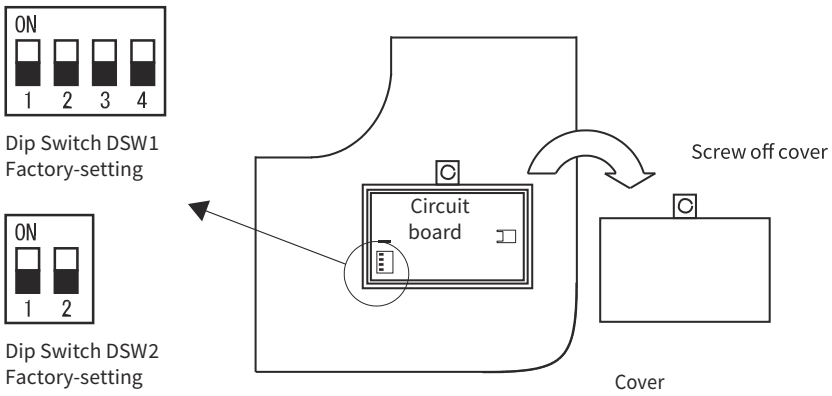
This adapter must be used in conjunction with a Wired Remote Controller (WRC) following (a), or with an IR receiver kit following (b).



1.5.4 IR Receiver Kit

Model: PC-ALH5Q





Back of the IR Receiver Kit

The dip switch (DSW1 & DSW2) are optional for function setting and when needed, shall be set as per the following requirements.

DSW1 1st digit	Primary/Secondary setting
ON	When using 2 remote controllers, set as secondary remote controller.
OFF	When using 2 remote controllers, set as primary remote controller.

DSW1 2nd digit	DSW1 3rd digit	Adjacent unit setting mode
OFF	OFF	mode A
ON	OFF	mode B
OFF	ON	mode C
ON	ON	mode D

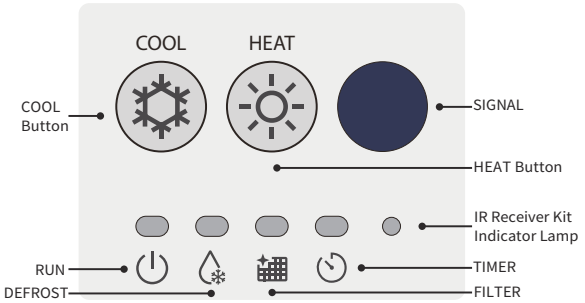
DSW1 4th digit	Elevator griller setting
ON	Elevator griller Up/Down is enabled.
OFF	Elevator griller Up/Down is disabled.

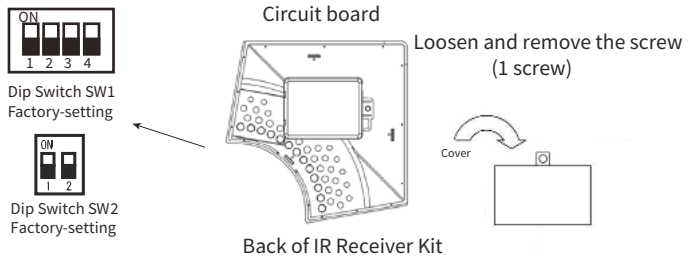
DSW2 1st digit	Emergency operation setting
ON	Emergency operation is enabled
OFF	Emergency operation is disabled.

DSW2 2nd digit	Reserved
ON	-
OFF	-

1.5.5 IR Receiver Kit

Model: PC-ALHC5Q





The dip switch (DSW1 & DSW2) are optional for function setting and when needed, shall be set as per the following requirements.

DSW1 1st digit	Primary/Secondary setting
ON	When using 2 remote controllers, set as secondary remote controller.
OFF	When using 2 remote controllers, set as primary remote controller.

DSW1 2nd digit	DSW1 3rd digit	Adjacent unit setting mode
OFF	OFF	mode A
ON	OFF	mode B
OFF	ON	mode C
ON	ON	mode D

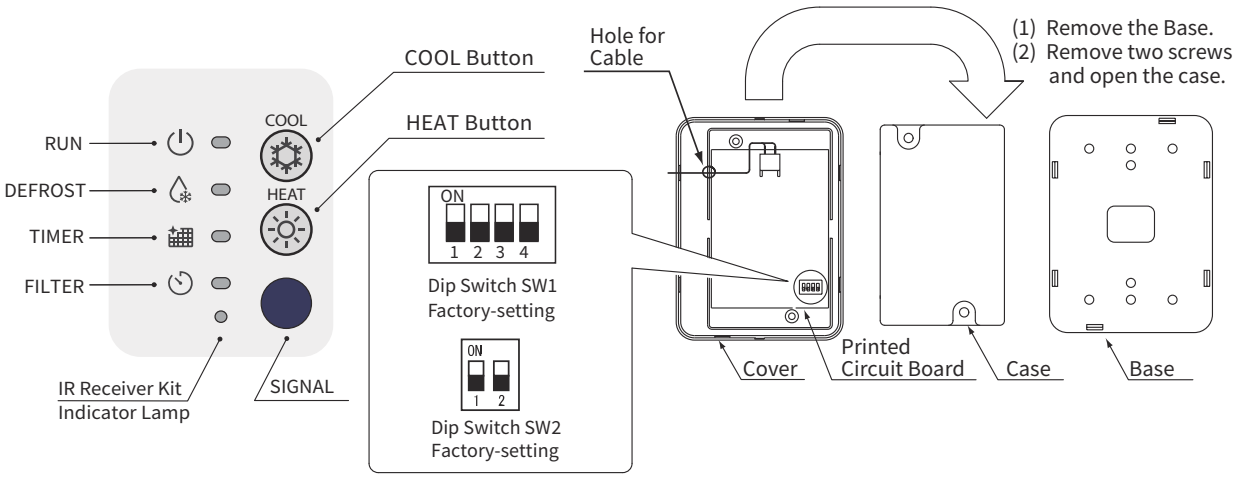
DSW1 4th digit	Elevator griller setting
ON	Elevator griller Up/Down is enabled.
OFF	Elevator griller Up/Down is disabled.

DSW2 1st digit	Emergency operation setting
ON	Emergency operation is enabled
OFF	Emergency operation is disabled.

DSW2 2nd digit	Reserved
ON	-
OFF	-

1.5.6 IR Receiver Kit

Model: PC-ALHZ5Q



The dip switch (DSW1 & DSW2) are optional for function setting and when needed, shall be set as per the following requirements.

DSW1 1st digit	Primary/Secondary setting
ON	When using 2 remote controllers, set as secondary remote controller.
OFF	When using 2 remote controllers, set as primary remote controller.

DSW1 2nd digit	DSW1 3rd digit	Adjacent unit setting mode
OFF	OFF	mode A
ON	OFF	mode B
OFF	ON	mode C
ON	ON	mode D

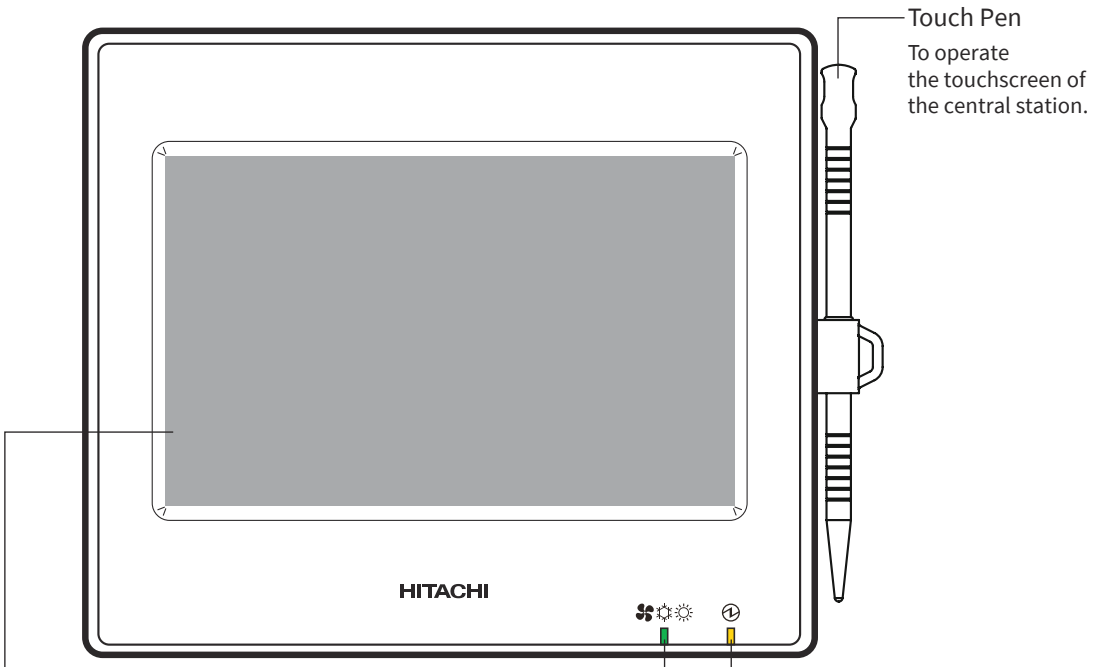
DSW1 4th digit	Elevator griller setting
ON	Elevator griller Up/Down is enabled.
OFF	Elevator griller Up/Down is disabled.

DSW2 1st digit	Emergency operation setting
ON	Emergency operation is enabled
OFF	Emergency operation is disabled.

DSW2 2nd digit	Reserved
ON	-
OFF	-

1.5.7 Central Station

Model: CCM01



Color LCD Display with Touchscreen

To operate and monitor the units by the touchscreen display. It is operated by using touch pen (accessory).
The touchscreen display will automatically sleep when the touchscreen is not operated for the given length of time.
Gesture control is not supported such as :

- Tap 2 places simultaneously
- Flick Operation

Power Indicator

To indicate the power condition of the central station.
OFF (lamp): Power is turned OFF
ON (lamp): Power is turned ON

Operation Indicator

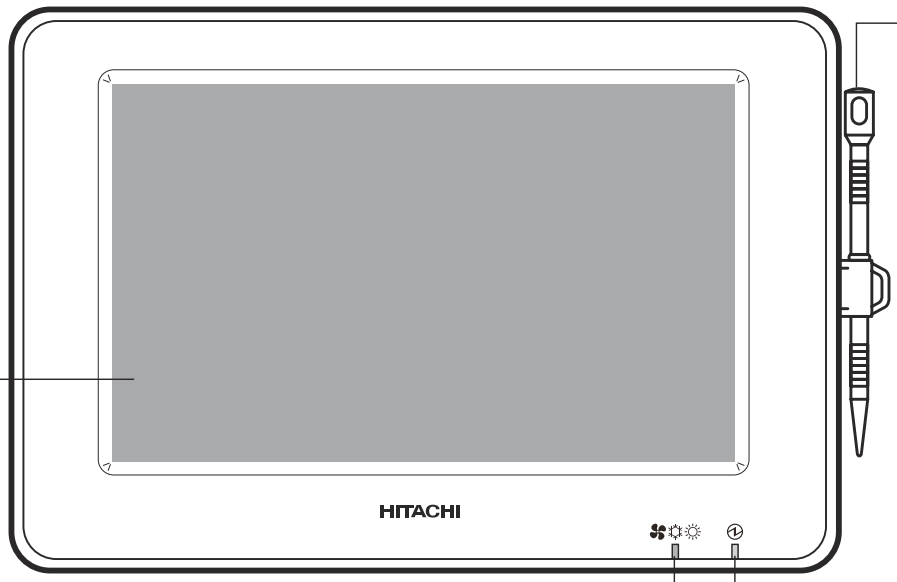
To indicate the Run/Stop condition of the units.
OFF: All the units are stopped.
ON (Green): One or more units are in operation.
Flashing (Red): In abnormal condition

NOTE:

Remove the protection sheet on LCD (liquid crystal display) before using this product.

1.5.8 Central Station

Model: CCL01



Touch Pen

To operate the touchscreen of the central station.

Color LCD Display with Touchscreen

To operate and monitor the units on the touchscreen display. It is operated by using touch pen (accessory). The touchscreen display will automatically sleep when the touchscreen is not operated for the given length of time.

Power Indicator

To indicate the power condition of the central station.
OFF (lamp): Power is turned OFF
ON (lamp): Power is turned ON

Operation Indicator

To indicate the Run/Stop condition of the units.
OFF: All the units are stopped.
ON (Green): One or more units are in operation.
Flashing (Red): In abnormal condition

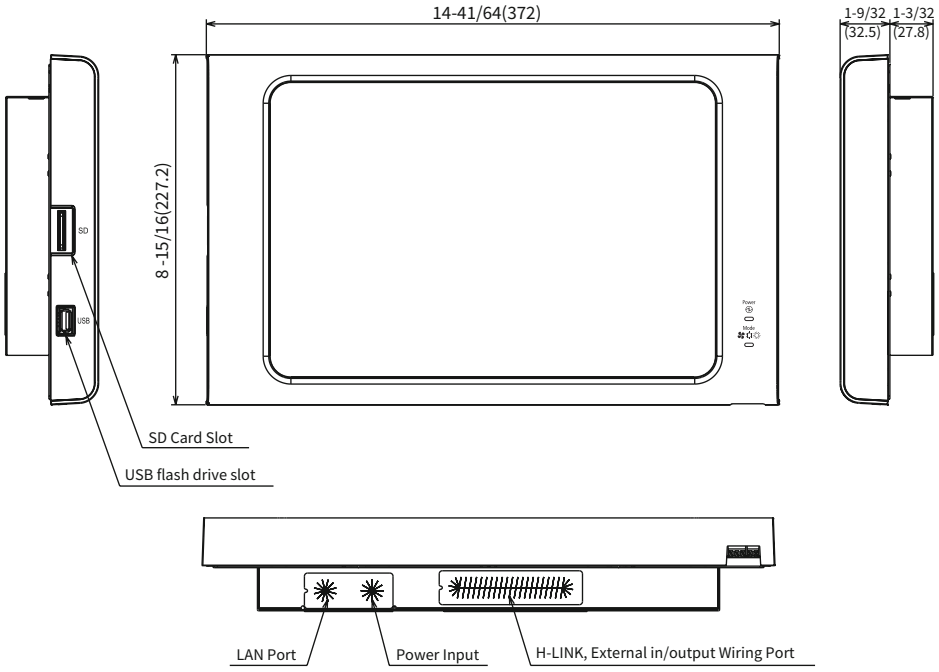
NOTE:

Remove the protection sheet on LCD (liquid crystal display) before using this product.

1.5.9 Central Station EX

Model: CCXL02

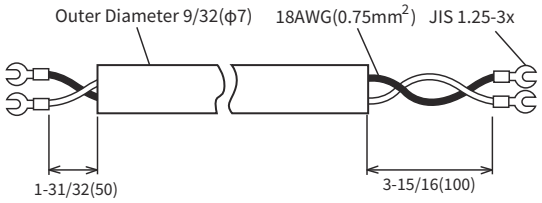
Unit: in.(mm)



1.5.10 Remote Control Cable: PRC-5K to 15K (for Wired Remote Controllers and Central Stations)

As the wired remote controllers and central stations do not include a remote control cable, use PRC-5K to 15K, or prepare one in the field.

Unit: in.(mm)



Shielded Twist-Pair Cable

Model	Cable Length
PRC-5K	16.4ft(5m)
PRC-10K	32.8t(10m)
PRC-15K	49.2ft(15m)

When the total cable length is within 98.4ft(30m), other type of cable (more than 22AWG[0.3mm²]) can be used.

2. General Data

2.1 MESP Ducted Type

HITACHI airCore 700 series		Kbtu/h	12K	18K	24K	30K	36K
Power supply		V-ph-Hz	208/230~,60	208/230~,60	208/230~,60	208/230~,60	208/230~,60
Indoor Unint Model Name			PPIM-B12UFA1DQ	PPIM-B18UFA1DQ	PPIM-B24UFA1DQ	PPIM-B30UFA1DQ	PPIM-B36UFA1DQ
Cooling	Rated Capacity	Btu/h	12000	18000	24000	30000	36000
	Capacity Range [Min~Max]	Btu/h	4500~15500	6500~23000	10000~30000	13000~36000	14000~43000
	Cooling Power Input	W	860	1410	1800	2340	2700
	Cooling Current	A	3.8	6.3	7.9	10.3	11.9
Heating	Rated Capacity at 47°F	Btu/h	14000	20000	26000	32000	38000
	Capacity Range [Min~Max]	Btu/h	4800~20000	6600~26000	9500~35000	14000~40000	14500~46000
	Heating Power Input	W	1025	1460	1810	2340	2650
	Heating Current	A	4.5	6.5	8.0	10.3	11.7
	Rated Capacity at 17°F	Btu/h	12600	18000	21600	28600	34200
	Maximum Heating Capacity at 5°F	Btu/h	14000	22000	26000	32000	38000
	COP at 5°F	W/W	2.0	2.1	2.1	2.0	2.1
Efficiency	EER2	Btu/h/W	13.9	12.7	13.3	12.8	13.3
	SEER2	Btu/h/W	20.5	20.2	18.5	18.7	21.5
	COP2	W/W	4.0	4.0	4.2	4.0	4.2
	HSPF2	Btu/h/W	10.0	9.8	9.8	10.1	10.7
Indoor unit	External Static Pressure-Range	in.WG[Pa]	0.3-0.6[75-150]	0.3-0.8[75-200]	0.3-0.8[75-200]	0.3-0.8[75-200]	0.3-0.8[75-200]
	Fan Motor Output	W	150	250	250	250	375
	Indoor Air Flow [Hi2/Hi/Med/ Low2/Low/Breeze]	CFM	450/390/350/ 335/280/245	650/590/550/ 510/460/420	780/740/670/ 600/560/530	1060/960/870/ 770/730/690	1270/1140/1040/ 950/830/740
		m^3/h	760/660/600/ 570/470/420	1100/1008/930/ 864/790/720	1330/1260/1140/ 1020/960/900	1800/1638/1476/ 1320/1250/1180	2160/1950/1770/ 1620/1410/1260
	Sound Pressure Level [Hi2/Hi/Med/ Low2/Low/Breeze]	dB(A)	40/39/38/ 36/34/33	35/33/31/ 29/28/26	38/36/33/ 30/28/27	41/38/36/ 34/32/30	43/41/39/ 37/34/32
	Dimension [WxHxD]	inch	[25-19/32(+2-61/64)] ×[10-5/8]×[28-11/32]	[43-5/16(+2-61/64)]× [11-13/16]×[31-1/2]	[43-5/16(+2-61/64)]× [11-13/16]×[31-1/2]	[43-5/16(+2-61/64)]× [11-13/16]×[31-1/2]	[55-1/8(+2-61/64)]× [11-13/16]×[31-1/2]
		mm	650(+75)×270×720	1100(+75)×300×800	1100(+75)×300×800	1100(+75)×300×800	1400(+75)×300×800
	Packing [WxHxD]	inch	[35-7/16]×[14-61/64] ×[34-29/64]	[53-5/32]×[16-9/64] ×[37-19/32]	[53-5/32]×[16-9/64] ×[37-19/32]	[53-5/32]×[16-9/64] ×[37-19/32]	[64-61/64]×[16-9/64] ×[37-19/32]
		mm	900×380×875	1350×410×955	1350×410×955	1350×410×955	1650×410×955
	Net weight	lbs[kg]	52.9[24.0]	92.6[42.0]	92.6[42.0]	92.6[42.0]	105.8[48.0]
	Gross weight	lbs[kg]	63.9[29.0]	103.6[47.0]	103.6[47.0]	103.6[47.0]	123.5[56.0]
	Drainage water pipe diameter	inch[mm]	1-1/4[Φ32]				

GENERAL DATA

HITACHI airCore 700 series		Kbtu/h	12K	18K	24K	30K	36K
Outdoor Unit Model Name			PAS-12BLFASDQ1	PAS-18BLFASDQ1	PAS-24BLFASDQ1	PAS-30BLFASDQ1	PAS-36BLFASDQ1
MCA		A	13.9	14.3	15.7	18.5	22.2
MOP		A	20	20	25	30	35
MAX Current		A	13.5	16	24.2	27.9	29.1
Max Power Input		kW	3.12	4	5.56	6.43	6.69
Outdoor Unit	Compressor	Type	KTN150D42UFZD	KTM240D43UKT	ATH356SKRC9EQ	ATH356SKRC9EQ	ATH356SKRC9EQ
		R.L.A	7.7	9.3	11.0	11.0	11.0
	Fan Motor	F.L.A	0.34	0.34	0.62	0.62	0.62
	Fan Motor Output	W	80	80	138	138	138
	Air Flow	CFM	1935	1935	2823	2823	4823
		m^3/h	3290	3290	4800	4800	8200
	Sound Pressure Level	dB(A)	55	55	55	55	56
	Throttle Type		EEV				
	Dimension [W×H×D]	inch	[35-7/16] ×[26-3/16] ×[12-19/32]	[35-7/16] ×[26-3/16] ×[12-19/32]	[37-13/32] ×[38-31/32] ×[12-19/32]	[37-13/32] ×[38-31/32] ×[12-19/32]	[37-13/32] ×[54-21/64] ×[12-19/32]
		mm	900×665×320	900×665×320	950×990×320	950×990×320	950×1380×320
	Packing [WxHxD]	inch	[41-3/5] ×[28-1/5] ×[16-4/5]	[41-3/5] ×[28-1/5] ×[16-4/5]	[42-1/10] ×[44-1/10] ×[18-1/2]	[42-1/10] ×[44-1/10] ×[18-1/2]	[42-1/10] ×[59-4/5] ×[18-1/2]
		mm	1056x717x427	1056x717x427	1070x1120x470	1070x1120x470	1070x1520x470
	Net Weight	lbs[kg]	97.0[44.0]	101.4[46.0]	194.0[88.0]	194.0[88.0]	250.2[113.5]
	Gross Weight	lbs[kg]	105.8[48.0]	110.2[50.0]	217.2[98.5]	217.2[98.5]	273.4[124.0]
Refrigerant type/ Quantity	Type		R32				
	Charge	lbs[kg]	2.65[1.2]	3.09[1.4]	5.73[2.6]	5.73[2.6]	7.50[3.4]
Design pressure	H/L	Psig	602/321	602/321	602/321	602/321	602/321
		MPa	4.15/2.21	4.15/2.21	4.15/2.21	4.15/2.21	4.15/2.21
Refrigerant pipe	Liquid side	inch[mm]	[1/4] Φ6.35	[1/4] Φ6.35	[3/8] Φ9.53	[3/8] Φ9.53	[3/8] Φ9.53
	Gas side	inch[mm]	[1/2] Φ12.7	[1/2] Φ12.7	[5/8] Φ15.88	[5/8] Φ15.88	[5/8] Φ15.88
	Max. pipe length	ft[m]	164[50]	164[50]	246[75]	246[75]	246[75]
	Max. Height difference	ft[m]	98.4[30]	98.4[30]	98.4[30]	98.4[30]	98.4[30]
	Add Refrigerant Amount	oz/ft[g/m]	0.194[18]	0.194[18]	0.376[35]	0.376[35]	0.376[35]
	Chargeless	ft[m]	98.4[30]	98.4[30]	98.4[30]	98.4[30]	98.4[30]
Guaranteed Temperature Operation Range	Cooling	°F[°C]	0-115[-18~46]	0-115[-18~46]	0-115[-18~46]	0-115[-18~46]	0-115[-18~46]
	Heating	°F[°C]	-13-75[-25~24]	-13-75[-25~24]	-13-75[-25~24]	-13-75[-25~24]	-13-75[-25~24]

NOTE:

- Rating conditions:

  Cooling:
  Indoor: DB80°F (26.7 °C)/ WB67°F (19.4°C) Outdoor: DB95°F (35°C)/WB75°F (23.9°C)

  Heating:
  Indoor: DB70°F (21.1°C)/ WB60°F (15.6°C) Outdoor: DB47°F (8.3°C)/ WB43°F (6.1°C)

2.2 4-Way Mini Cassette Type

HITACHI airCore 700 series		Kbtu/h	12K
Power supply		V-ph-Hz	208/230~,60
Indoor Unint Model Name			PCIM-B12UFA1DQ
Cooling	Rated Capacity	Btu/h	12000
	Capacity Range [Min~Max]	Btu/h	4600~16000
	Cooling Power Input	W	725
	Cooling Current	A	3.2
Heating	Rated Capacity at 47°F	Btu/h	14000
	Capacity Range [Min~Max]	Btu/h	4800~20000
	Heating Power Input	W	890
	Heating Current	A	3.9
	Rated Capacity at 17°F	Btu/h	12600
	Maximum Heating Capacity at 5°F	Btu/h	14000
	COP at 5°F	W/W	2.4
Efficiency	EER2	Btu/h/W	16.5
	SEER2	Btu/h/W	24.9
	COP2	W/W	4.6
	HSPF2	Btu/h/W	11.3
Indoor unit	Fan Motor Output	W	57
	Indoor Air Flow [Hi2/Hi/Med/Lo]	CFM	425/390/305/250
		m^3/h	720/660/520/420
	Sound Pressure Level [Hi2/Hi/Med/Lo]	dB(A)	46/44/38/33
	Dimension [WxHxD]	inch	[22-7/16]×[8-15/32]×[22-7/16]
		mm	570×215×570
	Packing [WxHxD]	inch	[28-47/64]×[11-1/2]×[26-19/64]
		mm	730×292×668
	Net weight	lbs[kg]	34.0[15.4]
	Gross weight	lbs[kg]	39.7[18.0]
	Drainage water pipe diameter	inch[mm]	1-3/16[Φ30]

GENERAL DATA

HITACHI airCore 700 series		Kbtu/h	12K
Outdoor Unit Model Name			PAS-12BLFASDQ1
MCA		A	13.9
MOP		A	20
MAX Current		A	13.5
Max Power Input		kW	3.12
Outdoor Unit	Compressor	Type	KTN150D42UFZD
		R.L.A	7.7
	Fan Motor	F.L.A	0.34
	Fan Motor Output	W	80
	Air Flow	CFM	1935
		m^3/h	3290
	Sound Pressure Level	dB(A)	55
	Throttle Type		EEV
	Dimension [W×H×D]	inch	[35-7/16]×[26- 3/16]×[12-19/32]
		mm	900×665×320
	Packing [WxHxD]	inch	[41-3/5]×[28- 1/5]×[16-4/5]
		mm	1056x717x427
	Net Weight	lbs[kg]	97.0[44.0]
	Gross Weight	lbs[kg]	105.8[48]
Refrigerant type/ Quantity	Type		R32
	Charge	lbs[kg]	2.65[1.2]
Design pressure	H/L	Psig	602/321
		MPa	4.15/2.21
Refrigerant pipe	Liquid side	inch[mm]	[1/4] Φ6.35
	Gas side	inch[mm]	[1/2] Φ12.7
	Max. pipe length	ft[m]	164[50]
	Max. Height difference	ft[m]	98.4[30]
	Add Refrigerant Amount	oz/ft[g/m]	0.194[18]
	Chargeless	ft[m]	98.4[30]
Guaranteed Temperature Operation Range	Cooling	°F[°C]	0-115[-18~46]
	Heating	°F[°C]	-13-75[-25~24]

NOTE:

- Rating conditions:

  Cooling:
  Indoor: DB80°F (26.7 °C)/ WB67°F (19.4°C) Outdoor: DB95°F (35°C)/WB75°F (23.9°C)

  Heating:
  Indoor: DB70°F (21.1°C)/ WB60°F (15.6°C) Outdoor: DB47°F (8.3°C)/ WB43°F (6.1°C)

2.3 4-Way Cassette Type

HITACHI airCore 700 series		Kbtu/h	18K	24K	30K	36K
Power supply		V-ph-Hz	208/230~,60	208/230~,60	208/230~,60	208/230~,60
Indoor Unint Model Name			PCI-B18UFA1DQ	PCI-B24UFA1DQ	PCI-B30UFA1DQ	PCI-B36UFA1DQ
Cooling	Rated Capacity	Btu/h	18000	24000	30000	36000
	Capacity Range [Min~Max]	Btu/h	6600~23000	10000~30000	13500~38000	14000~45000
	Cooling Power Input	W	1220	1700	2150	2400
	Cooling Current	A	5.4	7.5	9.5	10.6
Heating	Rated Capacity at 47°F	Btu/h	20000	26000	32000	38000
	Capacity Range [Min~Max]	Btu/h	6800~26000	9600~35000	14300~42000	15000~48000
	Heating Power Input	W	1270	1810	2080	2530
	Heating Current	A	5.6	8.0	9.2	11.2
	Rated Capacity at 17°F	Btu/h	18000	21600	28600	34200
	Maximum Heating Capacity at 5°F	Btu/h	20000	26000	32000	38000
	COP at 5°F	W/W	2.3	2.4	2.2	2.1
Efficiency	EER2	Btu/h/W	14.7	14.0	13.9	15.0
	SEER2	Btu/h/W	24.1	19.5	20.3	23.6
	COP2	W/W	4.6	4.2	4.5	4.4
	HSPF2	Btu/h/W	11.5	10.8	11.2	10.9
Indoor unit	Fan Motor Output	W	60	127	127	127
	Indoor Air Flow [Hi2/Hi/Med/Lo]	CFM	650/600/570/530	780/740/700/630	1060/940/820/740	1170/1060/950/740
		m^3/h	1100/1030/970/900	1330/1260/1190/1080	1800/1600/1400/1260	1990/1800/1620/1260
	Sound Pressure Level [Hi2/Hi/Med/Lo]	dB(A)	39/37/36/34	41/39/38/35	49/47/43/40	49/48/47/40
	Dimension [WxHxD]	inch	[33-5/64]×[9-3/8]×[33-5/64]	[33-5/64]×[11-11/32]×[33-5/64]	[33-5/64]×[11-11/32]×[33-5/64]	[33-5/64]×[11-11/32]×[33-5/64]
		mm	840×238×840	840×288×840	840×288×840	840×288×840
	Packing [WxHxD]	inch	[37-13/64]×[11- 1/2]×[37-13/64]	[37-13/64]×[13-15/32]×[37-13/64]	[37-13/64]×[13-15/32]×[37-13/64]	[37-13/64]×[13-15/32]×[37-13/64]
		mm	945×292×945	945×342×945	945×342×945	945×342×945
	Net weight	lbs[kg]	50.7[23.0]	59.5[27.0]	59.5[27.0]	59.5[27.0]
	Gross weight	lbs[kg]	59.5[27.0]	68.3[31.0]	68.3[31.0]	68.3[31.0]
	Drainage water pipe diameter	inch[mm]	1-3/16[Φ30]			

GENERAL DATA

HITACHI airCore 700 series		Kbtu/h	18K	24K	30K	36K
Outdoor Unit Model Name			PAS-18BLFASDQ1	PAS-24BLFASDQ1	PAS-30BLFASDQ1	PAS-36BLFASDQ1
MCA		A	14.3	15.7	18.5	22.2
MOP		A	20	25	30	35
MAX Current		A	16	24.2	27.9	29.1
Max Power Input		kW	3.68	5.56	6.43	6.69
Outdoor Unit	Compressor	Type	KTM240D43UKT	ATH356SKRC9EQ	ATH356SKRC9EQ	ATH356SKRC9EQ
		R.L.A	9.3	11.0	11.0	11.0
	Fan Motor	F.L.A	0.34	0.62	0.62	0.62
	Fan Motor Output	W	80	138	138	138
	Air Flow	CFM	1935	2823	2823	4823
		m^3/h	3290	4800	4800	8200
	Sound Pressure Level	dB(A)	55	55	55	56
	Throttle Type		EEV			
	Dimension [W×H×D]	inch	[35-7/16]×[26-3/16]×[12-19/32]	[37-13/32]×[38-31/32]×[12-19/32]	[37-13/32]×[38-31/32]×[12-19/32]	[37-13/32]×[54-21/64]×[12-19/32]
		mm	900×665×320	950×990×320	950×990×320	950×1380×320
	Packing [WxHxD]	inch	[41-3/5]×[28-1/5]×[16-4/5]	[42-1/10]×[44-1/10]×[18-1/2]	[42-1/10]×[44-1/10]×[18-1/2]	[42-1/10]×[59-4/5]×[18-1/2]
		mm	1056x717x427	1070x1120x470	1070x1120x470	1070x1520x470
	Net Weight	lbs[kg]	101.0[46.0]	194.0[88.0]	194.0[88.0]	250.2[113.5]
	Gross Weight	lbs[kg]	110.2[50.0]	217.2[98.5]	217.2[98.5]	273.4[124.0]
Refrigerant type/ Quantity	Type		R32			
	Charge	lbs[kg]	3.09[1.4]	5.73[2.6]	5.73[2.6]	7.50[3.4]
Design pressure	H/L	Psig	602/321	602/321	602/321	602/321
		MPa	4.15/2.21	4.15/2.21	4.15/2.21	4.15/2.21
Refrigerant pipe	Liquid side	inch[mm]	1/4[Φ6.35]	[3/8] Φ9.53	[3/8] Φ9.53	[3/8] Φ9.53
	Gas side	inch[mm]	1/2[Φ12.7]	[5/8] Φ15.88	[5/8] Φ15.88	[5/8] Φ15.88
	Max. pipe length	ft[m]	164[50]	246[75]	246[75]	246[75]
	Max. Height difference	ft[m]	98.4[30]	98.4[30]	98.4[30]	98.4[30]
	Add Refrigerant Amount	oz/ft[g/m]	0.194[18]	0.376[35]	0.376[35]	0.376[35]
	Chargeless	ft[m]	98.4[30]	98.4[30]	98.4[30]	98.4[30]
Guaranteed Temperature Operation Range	Cooling	°F[°C]	0-115[-18~46]	0-115[-18~46]	0-115[-18~46]	0-115[-18~46]
	Heating	°F[°C]	-13-75[-25~24]	-13-75[-25~24]	-13-75[-25~24]	-13-75[-25~24]

NOTE:

- Rating conditions:

  Cooling:
  Indoor: DB80°F (26.7 °C)/ WB67°F (19.4°C) Outdoor: DB95°F (35°C)/WB75°F (23.9°C)

  Heating:
  Indoor: DB70°F (21.1°C)/ WB60°F (15.6°C) Outdoor: DB47°F (8.3°C)/ WB43°F (6.1°C)

2.4 High-wall Type

HITACHI airCore 700 series		Kbtu/h	30K
Power supply		V-ph-Hz	208/230~,60
Indoor Unint Model Name			PPK-B30UFA1DQ
Cooling	Rated Capacity	Btu/h	30000
	Capacity Range [Min~Max]	Btu/h	12800~35500
	Cooling Power Input	W	2140
	Cooling Current	A	9.5
Heating	Rated Capacity at 47°F	Btu/h	32000
	Capacity Range [Min~Max]	Btu/h	13300~39000
	Heating Power Input	W	2285
	Heating Current	A	10.1
	Rated Capacity at 17°F	Btu/h	22400
	Maximum Heating Capacity at 5°F	Btu/h	32000
	COP at 5°F	W/W	2.0
Efficiency	EER2	Btu/h/W	14.0
	SEER2	Btu/h/W	21.8
	COP2	W/W	4.1
	HSPF2	Btu/h/W	10.0
Indoor unit	Fan Motor Output	W	52
	Indoor Air Flow [Hi2/Hi/Med/Lo]	CFM	980/910/845/770
		m^3/h	1662/1544/1435/1309
	Sound Pressure Level [Hi2/Hi/Med/Lo]	dB(A)	47/45/43/41
	Dimension [WxHxD]	inch	[54-21/64]×[14-7/8]×[11-39/64]
		mm	1380x378x295
	Packing [WxHxD]	inch	[58-55/64]×[18-57/64]×[16-9/64]
		mm	1495x480x410
	Net weight	lbs[kg]	54.0[24.5]
	Gross weight	lbs[kg]	63.9[29.0]
	Drainage water pipe diameter	inch[mm]	1-1/4[Φ32]

GENERAL DATA

HITACHI airCore 700 series		Kbtu/h	30K
Outdoor Unit Model Name			PAS-30BLFASDQ1
MCA		A	0.8
MOP		A	15
MAX Current		A	24.2
Max Power Input		kW	5.56
Outdoor Unit	Compressor	Type	ATH356SKRC9EQ
		R.L.A	11.5
	Fan Motor	F.L.A	0.62
	Fan Motor Output	W	138
	Air Flow	CFM	2823
		m^3/h	4800
	Sound Pressure Level	dB(A)	55
	Throttle Type		EEV
	Dimension [W×H×D]	inch	[37-13/32]×[38-31/32]×[12-19/32]
		mm	950×990×320
	Packing [WxHxD]	inch	[42-1/10]×[44-1/10]×[18-1/2]
		mm	1070x1120x470
	Net Weight	lbs[kg]	194.0[88.0]
	Gross Weight	lbs[kg]	217.2[98.5]
Refrigerant type/ Quantity	Type		R32
	Charge	lbs[kg]	5.73[2.6]
Design pressure	H/L	Psig	602/321
		MPa	4.15/2.21
Refrigerant pipe	Liquid side	inch[mm]	3/8[Φ9.53]
	Gas side	inch[mm]	5/8[Φ15.88]
	Max. pipe length	ft[m]	246[75]
	Max. Height difference	ft[m]	98.4[30]
	Add Refrigerant Amount	oz/ft[g/m]	0.376[35]
	Chargeless	ft[m]	98.4[30]
Guaranteed Temperature Operation Range	Cooling	°F[°C]	0-115[-18~46]
	Heating	°F[°C]	-13-75[-25~24]

NOTE:

- Rating conditions:

  Cooling:
  Indoor: DB80°F (26.7 °C)/ WB67°F (19.4°C) Outdoor: DB95°F (35°C)/WB75°F (23.9°C)

  Heating:
  Indoor: DB70°F (21.1°C)/ WB60°F (15.6°C) Outdoor: DB47°F (8.3°C)/ WB43°F (6.1°C)

2.5 Air handlers Type

HITACHI airCore 700 series		Kbtu/h	18K	24K	36K
Power supply		V-ph-Hz	208/230~,60	208/230~,60	208/230~,60
Indoor Unint Model Name			JPE18B3XB2HS1A	JPE24B3XC2HS1A	JPE36B3XD2HS1A
Cooling	Rated Capacity	Btu/h	18000	24000	36000
	Capacity Range [Min~Max]	Btu/h	6500~23000	10000~30000	14000~43000
	Cooling Power Input	W	1460	1890	2880
	Cooling Current	A	6.5	8.4	12.8
Heating	Rated Capacity at 47°F	Btu/h	20000	26000	38000
	Capacity Range [Min~Max]	Btu/h	6500~25000	9400~34000	14500~47000
	Heating Power Input	W	1625	2000	2930
	Heating Current	A	7.2	8.9	13.0
	Rated Capacity at 17°F	Btu/h	17300	21000	35200
	Maximum Heating Capacity at 5°F	Btu/h	20000	26000	38000
	COP at 5°F	W/W	1.9	1.9	1.9
Efficiency	EER2	Btu/h/W	12.3	12.7	12.5
	SEER2	Btu/h/W	17.0	17.1	19.5
	COP2	W/W	3.6	3.8	3.8
	HSPF2	Btu/h/W	9.5	9.7	9.7
Indoor unit	Fan Motor Output	W	100	181	181
	Indoor Air Flow [Med-HI/Med/Med-Lo]	CFM	700/625/400	795/515/370	1200/790/715
		m^3/h	1190/1060/680	1350/875/630	2040/1345/1210
	Dimension [WxHxD]	inch[mm]	[17-1/2]×[45 5/8]×[21-7/16] 445×1159×545	[17-1/2]×[48-3/8]×[21-7/16] 445×1229×545	[17-1/2]×[48-3/8]×[21-7/16] 445×1229×545
	Packing [WxHxD]	inch[mm]	18×49×25 457×1245×635	18×52×25 457×1321×635	18×52×25 457×1321×635
	Net weight	lbs[kg]	93.0[42.2]	99.0[44.9]	100.0[45.4]
	Gross weight	lbs[kg]	101.0[45.8]	107.0[48.5]	108.0[49.0]
	Drainage water pipe diameter	inch[mm]	3/4[Φ19.05]		

GENERAL DATA

HITACHI airCore 700 series		Kbtu/h	18K	24K	36K
Outdoor Unit Model Name			PAS-18BLFASDQ1	PAS-24BLFASDQ1	PAS-36BLFASDQ1
MCA		A	14.3	15.7	22.2
MOP		A	20	25	35
MAX Current		A	16	24.2	29.1
Max Power Input		kW	3.68	5.56	6.69
Outdoor Unit	Compressor	Type	KTM240D43UKT	ATH356SKRC9EQ	ATH356SKRC9EQ
		R.L.A	9.3	11.0	11.0
	Fan Motor	F.L.A	0.34	0.62	0.62
	Fan Motor Output	W	80	138	138
	Air Flow	CFM	1935	2823	4823
		m^3/h	3290	4800	8200
	Sound Pressure Level	dB[A]	55	55	56
	Throttle Type		EEV		
	Dimension [W×H×D]	inch[mm]	[35-7/16]×[26- 3/16]×[12-19/32] 900×665×320	[37-13/32]×[38- 31/32]×[12-19/32] 950×990×320	[37-13/32]×[54- 21/64]×[12-19/32] 950×1380×320
	Packing [WxHxD]	inch[mm]	[41-3/5]×[28- 1/5]×[16-4/5] 1056x717x427	[42-1/10]×[44- 1/10]×[18-1/2] 1070x1120x470	[42-1/10]×[59- 4/5]×[18-1/2] 1070x1520x470
	Net Weight	lbs[kg]	101.0[46]	194.0[88]	250.0[113.5]
	Gross Weight	lbs[kg]	110.0[50.0]	217[98.5]	273[124]
Refrigerant type/ Quantity	Type		R32		
	Charge	lbs[kg]	3.09[1.4]	5.73[2.6]	7.50[3.4]
Design pressure	H/L	Psig	602/321	602/321	602/321
		MPa	4.15/2.21	4.15/2.21	4.15/2.21
Refrigerant pipe	Liquid side	inch[mm]	[3/8] Φ9.53	[3/8] Φ9.53	[3/8] Φ9.53
	Gas side	inch[mm]	[3/4] Φ19.05	[3/4] Φ19.05	[3/4] Φ19.05
	Max. pipe length	ft[m]	164[50]	246[75]	246[75]
	Max. Height difference	ft[m]	98.4[30]	98.4[30]	98.4[30]
	Add Refrigerant Amount	oz/ft[g/m]	0.376[35]	0.376[35]	0.376[35]
	Chargeless	ft[m]	98.4[30]	98.4[30]	98.4[30]
Guaranteed Temperature Operation Range	Cooling	°F[°C]	0-115[-18~46]	0-115[-18~46]	0-115[-18~46]
	Heating	°F[°C]	-13-75[-25~24]	-13-75[-25~24]	-13-75[-25~24]

NOTES:

- Test conditions:

  Cooling:
  Indoor: DB80°F (26.7 °C)/ WB67°F (19.4°C) Outdoor: DB95°F (35°C)/WB75°F (23.9°C)

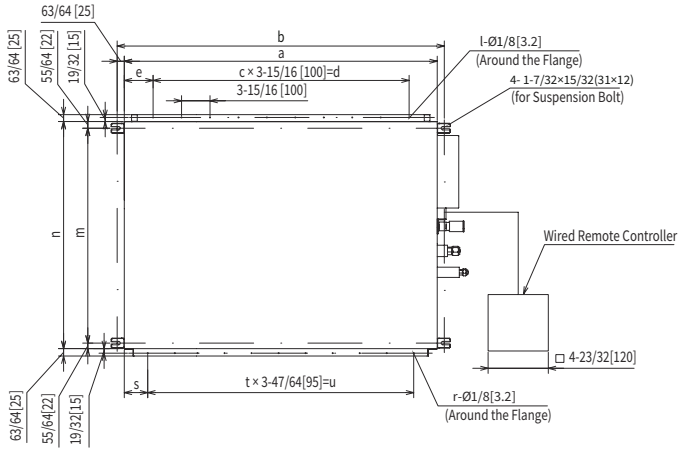
  Heating:
  Indoor: DB70°F (21.1°C)/ WB60°F (15.6°C) Outdoor: DB47°F (8.3°C)/ WB43°F (6.1°C)
- When outdoor unit is connected to the air handler unit, transfer tube is necessary for stop valve of outdoor unit.

3. Dimensional Data

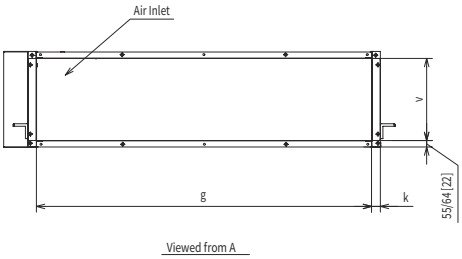
3.1 Indoor Units

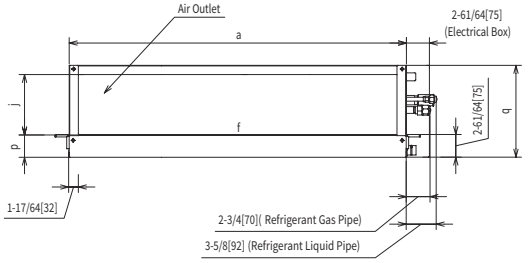
< MESP Ducted Type >

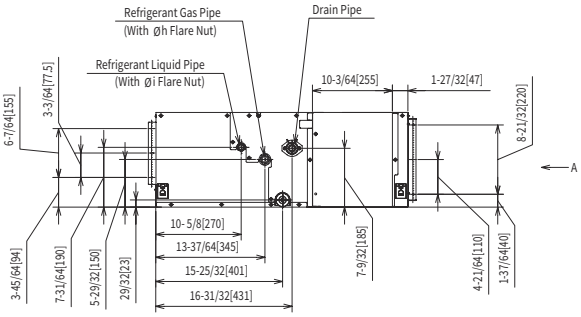
Models: PPIM-B12~36UFA1DQ



Unit: in. [mm]







Model Capacity [Btu/h]	a	b	c*	d	e	f	g	h	i	j	k
12K	25-19/32 (650)	27-9/16 (700)	5	19-11/16 (500)	2-61/64 (75)	22-59/64 (582)	23-55/64 (606)	1/2 [12.7]	1/4 [6.35]	5-7/16 (138)	1-1/32 [26]
18K	43-5/16 [1100]	45-9/32 [1150]	10	39-3/8 [1000]	1-31/32 [50]	40-25/32 [1036]	41-7/32 [1047]	1/2 [12.7]	1/4 [6.35]	7-23/32 [196]	1-1/32 [26]
24K	43-5/16 [1100]	45-9/32 [1150]	10	39-3/8 [1000]	1-31/32 [50]	40-25/32 [1036]	41-7/32 [1047]	1/2 [12.7]	1/4 [6.35]	7-23/32 [196]	1-1/32 [26]
30K	43-5/16 [1100]	45-9/32 [1150]	10	39-3/8 [1000]	1-31/32 [50]	40-25/32 [1036]	41-7/32 [1047]	5/8 [15.88]	3/8 [9.53]	7-23/32 [196]	1-1/32 [26]
36K	55-1/8 [1400]	57-3/32 [1450]	12	47-1/4 [1200]	3-55/64 [98]	52-19/32 [1336]	53-1/32 [1347]	5/8 [15.88]	3/8 [9.53]	7-23/32 [196]	1-1/32 [26]

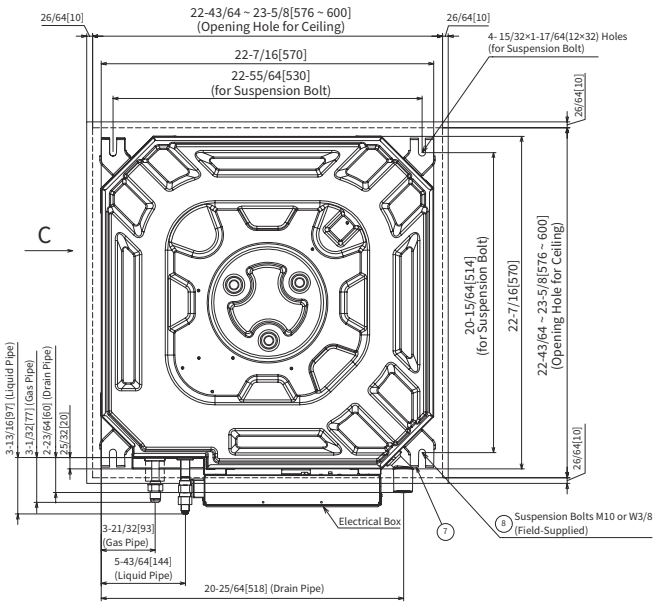
Model Capacity [Btu/h]	l	m	n	p	q	r	s	t*	u	v
12K	23/32 [18]	26-39/64 (676)	28-11/32 (720)	1-11/16 [43]	10-5/8 [270]	23/32 [18]	2-61/64 (75)	5	19-11/16 (500)	8-55/64 [225]
18K	1-1/32 [26]	29-49/64 [756]	31-1/2 [800]	2-7/8 [73]	11-13/16 [300]	1-1/32 [26]	2-23/32 [69]	10	37-13/32 [950]	10-5/64 [256]
24K	1-1/32 [26]	29-49/64 [756]	31-1/2 [800]	2-7/8 [73]	11-13/16 [300]	1-1/32 [26]	2-23/32 [69]	10	37-13/32 [950]	10-5/64 [256]
30K	1-1/32 [26]	29-49/64 [756]	31-1/2 [800]	2-7/8 [73]	11-13/16 [300]	1-1/32 [26]	2-23/32 [69]	10	37-13/32 [950]	10-5/64 [256]
36K	1-17/64 [32]	29-49/64 [756]	31-1/2 [800]	2-7/8 [73]	11-13/16 [300]	1-11/32 [34]	3-15/64 [82]	13	48-5/8 [1235]	10-5/64 [256]

* The number of c and t represents the quantity.

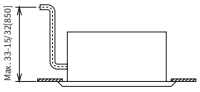
< 4-Way Mini Cassette Type >

Model: PCIM-B12UFA1DQ with Air Panel PHKM50PAQ1

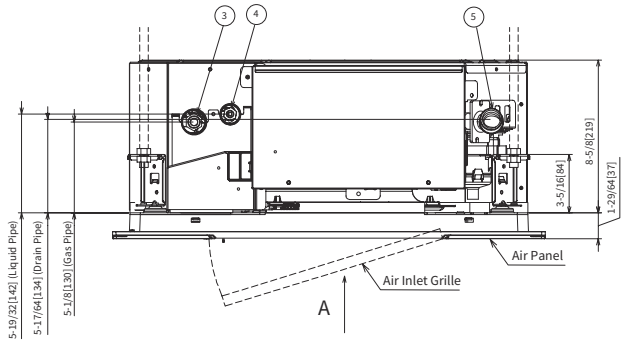
Unit: in.[mm]

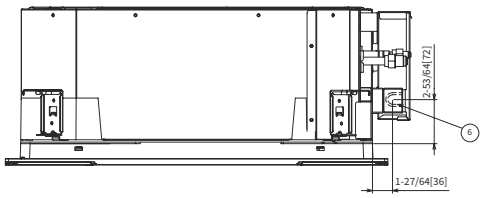


Mark	Name	Remark
1	Air Outlet	8-Way
2	Air Inlet	
3	Refrigerant Gas Pipe Connection	with ø1/2(12.7) Flare Nut
4	Refrigerant Liquid Pipe Connection	with ø1/4(6.35) Flare Nut
5	Drain Pipe Connection	VP25
6	Wiring Hole	ø1-3/16(30) Hole
7	Suspension Bracket	
8	Suspension Bolt	4-M10 or W3/8
9	Wired Remote Controller (CIW03-H)	without Cable
10	Shielded Twist-Pair Cable for CIW03-H	Min. 18AWG(0.75mm^2), Field-Supplied

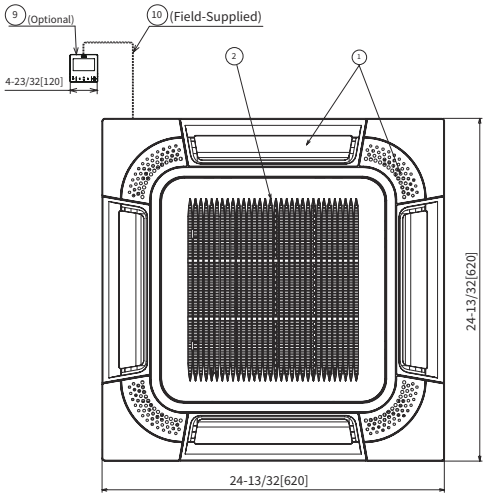


Lifting Drain Piping



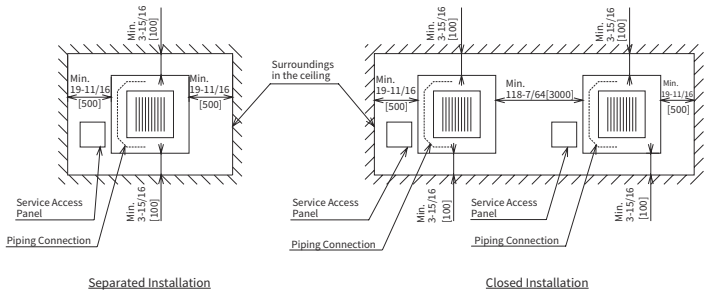


Viewed from C



Viewed from A

Service Panel



Separated Installation

Closed Installation

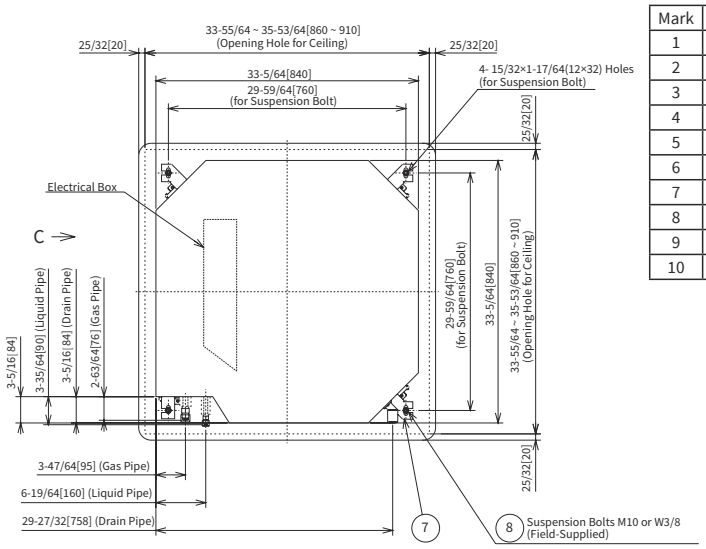
NOTE:

Distance between the wall and panel edge must be min. 59-1/16inches(1500mm) to prevent short circuiting.

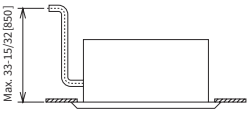
< 4-Way Cassette Type >

Model: PCI-B18UFA1DQ with Air Panel PHKF160PAQ1

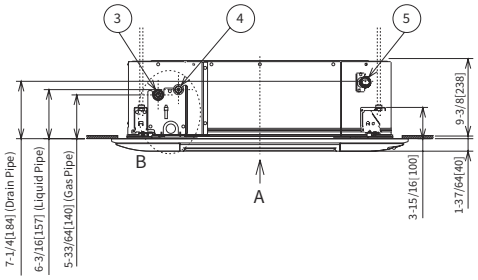
Unit: in.[mm]

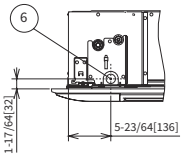


Mark	Name	Remark
1	Air Outlet	4-Way
2	Air Inlet	
3	Refrigerant Gas Pipe Connection	with ø1/2(12.7) Flare Nut
4	Refrigerant Liquid Pipe Connection	with ø1/4(6.35) Flare Nut
5	Drain Pipe Connection	VP25
6	Wiring Hole	ø1-3/16(30) Hole
7	Suspension Bracket	
8	Suspension Bolt	4-M10 or W3/8
9	Wired Remote Controller (CIW03-H)	without Cable
10	Shielded Twist-Pair Cable for CIW03-H	Min. 18AWG(0.75mm^2), Field-Supplied

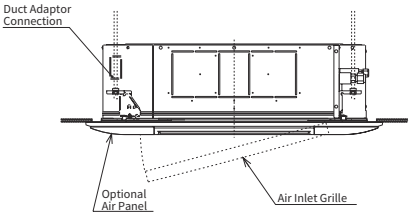


Lifting Drain Piping

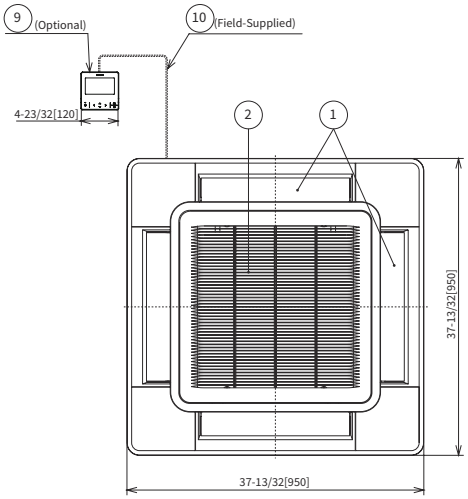




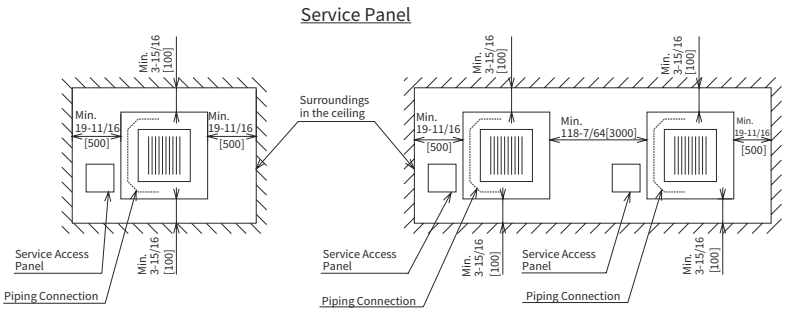
Viewed from B



Viewed from C



Viewed from A



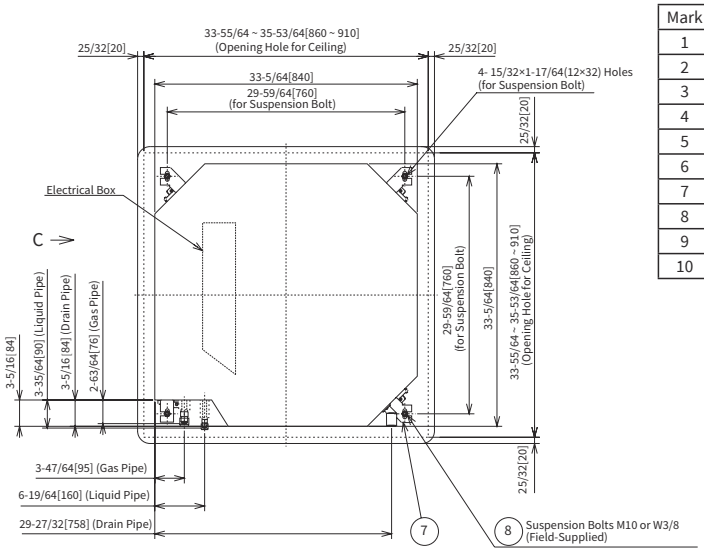
NOTE:

Distance between the wall and panel edge must be min. 59-1/16inches(1500mm) to prevent short circuiting.

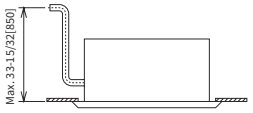
DIMENSIONAL DATA

Models: PCI-B24~36UFA1DQ with Air Panel PHKF160PAQ1

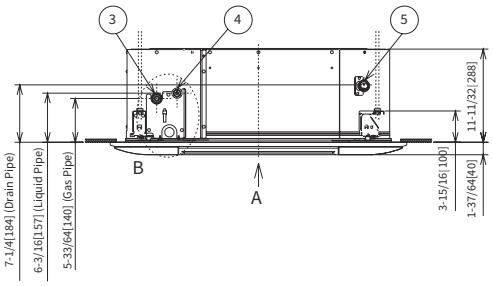
Unit: in.[mm]

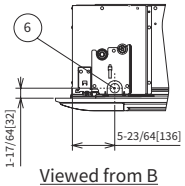


Mark	Name	Remark
1	Air Outlet	4-Way
2	Air Inlet	
3	Refrigerant Gas Pipe Connection	with ø5.8(15.88) Flare Nut
4	Refrigerant Liquid Pipe Connection	with ø3/8(9.53) Flare Nut
5	Drain Pipe Connection	VP25
6	Wiring Hole	ø1-3/16(30) Hole
7	Suspension Bracket	
8	Suspension Bolt	4-M10 or W3/8
9	Wired Remote Controller (CIW03-H)	without Cable
10	Shielded Twist-Pair Cable for CIW03-H	Min. 18AWG(0.75mm^2), Field-Supplied

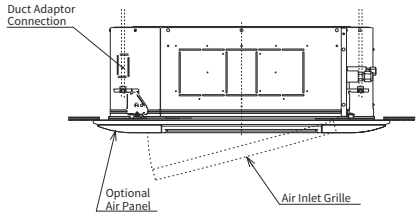


Lifting Drain Piping

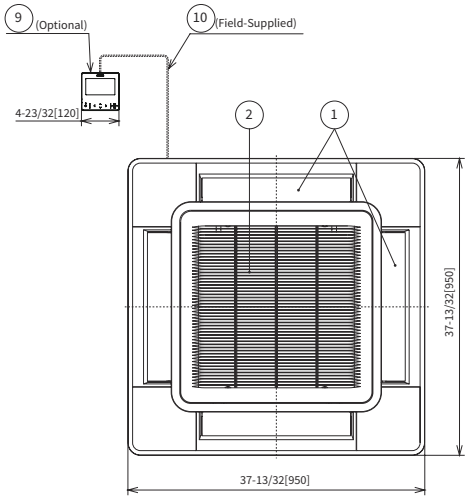




Viewed from B

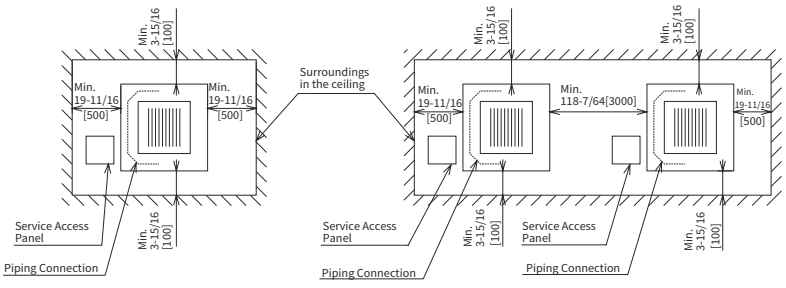


Viewed from C



Viewed from A

Service Panel



Separated Installation

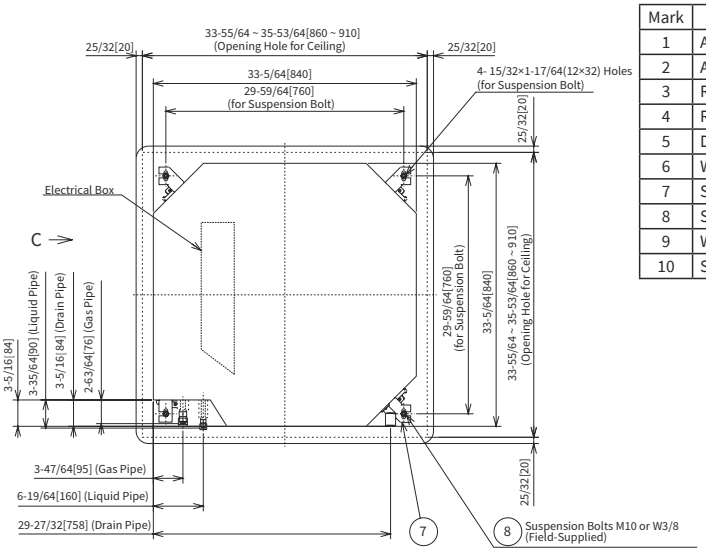
Closed Installation

NOTE:

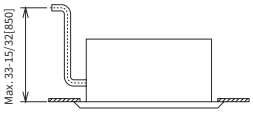
Distance between the wall and panel edge must be min. 59-1/16inches(1500mm) to prevent short circuiting.

Model: PCI-B18UFA1DQ with Air Panel P-AP160NAE1

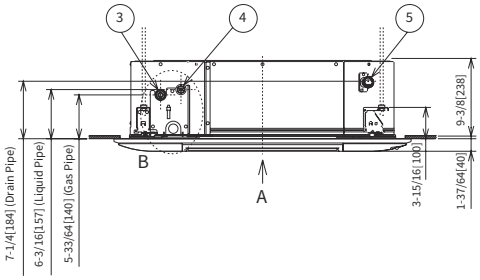
Unit: in[mm]

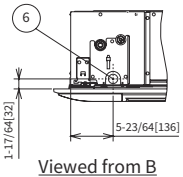


Mark	Name	Remark
1	Air Outlet	4-Way
2	Air Inlet	
3	Refrigerant Gas Pipe Connection	with ø1/2(12.7) Flare Nut
4	Refrigerant Liquid Pipe Connection	with ø1/4(6.35) Flare Nut
5	Drain Pipe Connection	VP25
6	Wiring Hole	ø1-3/16(30) Hole
7	Suspension Bracket	
8	Suspension Bolt	4-M10 or W3/8
9	Wired Remote Controller (CIW03-H)	without Cable
10	Shielded Twist-Pair Cable for CIW03-H	Min. 18AWG(0.75mm^2), Field-Supplied

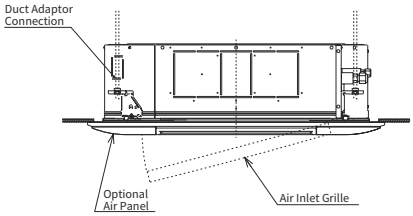


Lifting Drain Piping

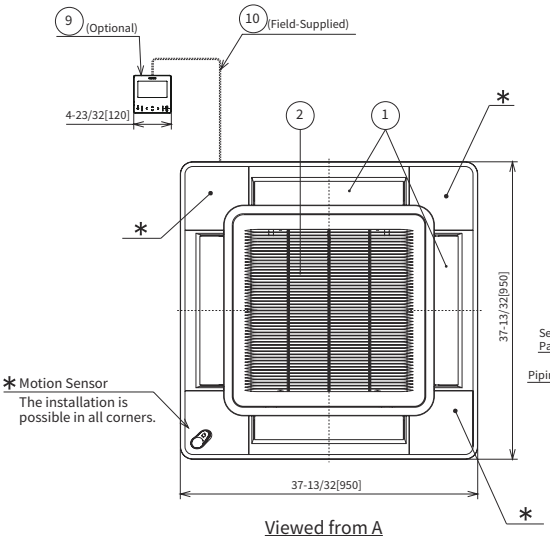




Viewed from B

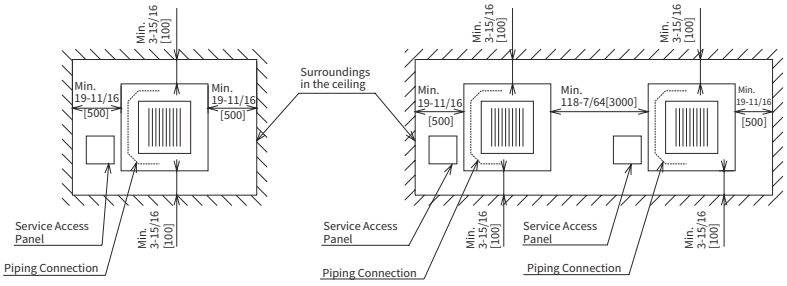


Viewed from C



Viewed from A

Service Panel



Separated Installation

Closed Installation

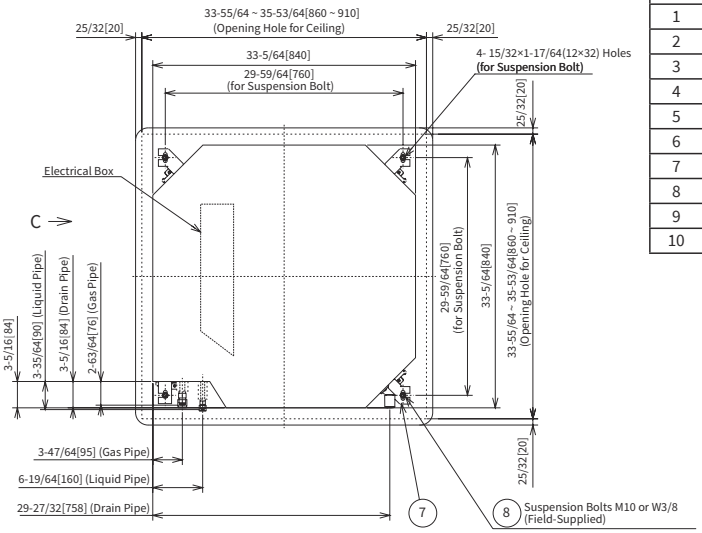
NOTE:

Distance between the wall and panel edge must be min. 59-1/16inches(1500mm) to prevent short circuiting.

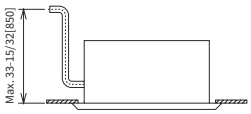
DIMENSIONAL DATA

Models: PCI-B24~36UFA1DQ with Air Panel P-AP160NAE1

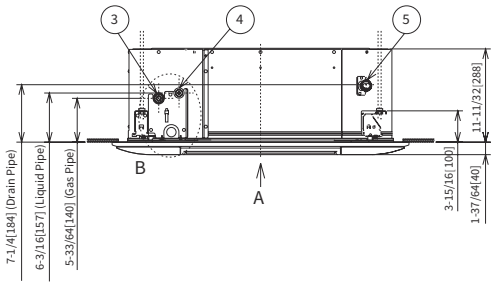
Unit: in[mm]

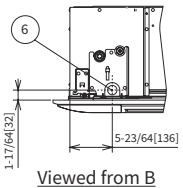


Mark	Name	Remark
1	Air Outlet	4-Way
2	Air Inlet	
3	Refrigerant Gas Pipe Connection	with ø5.8(15.88) Flare Nut
4	Refrigerant Liquid Pipe Connection	with ø3/8(9.53) Flare Nut
5	Drain Pipe Connection	VP25
6	Wiring Hole	ø1-3/16(30) Hole
7	Suspension Bracket	
8	Suspension Bolt	4-M10 or W3/8
9	Wired Remote Controller (CIW03-H)	without Cable
10	Shielded Twist-Pair Cable for CIW03-H	Min. 18AWG(0.75mm^2), Field-Supplied

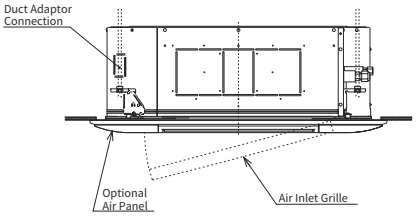


Lifting Drain Piping

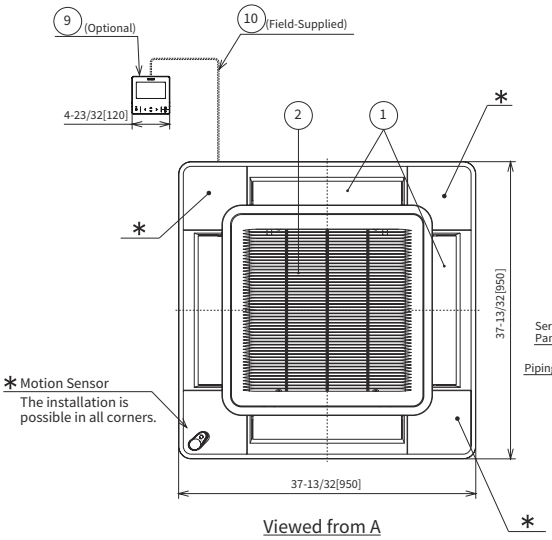




Viewed from B

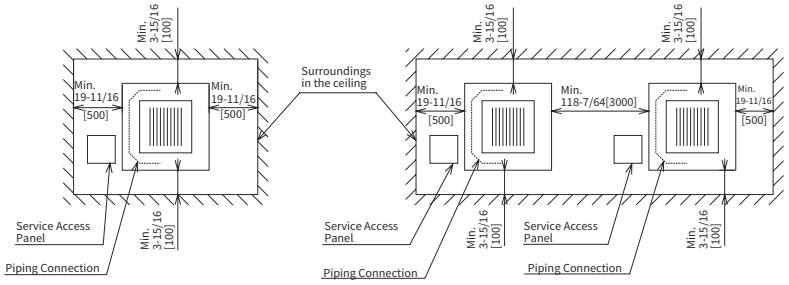


Viewed from C



Viewed from A

Service Panel



Separated Installation

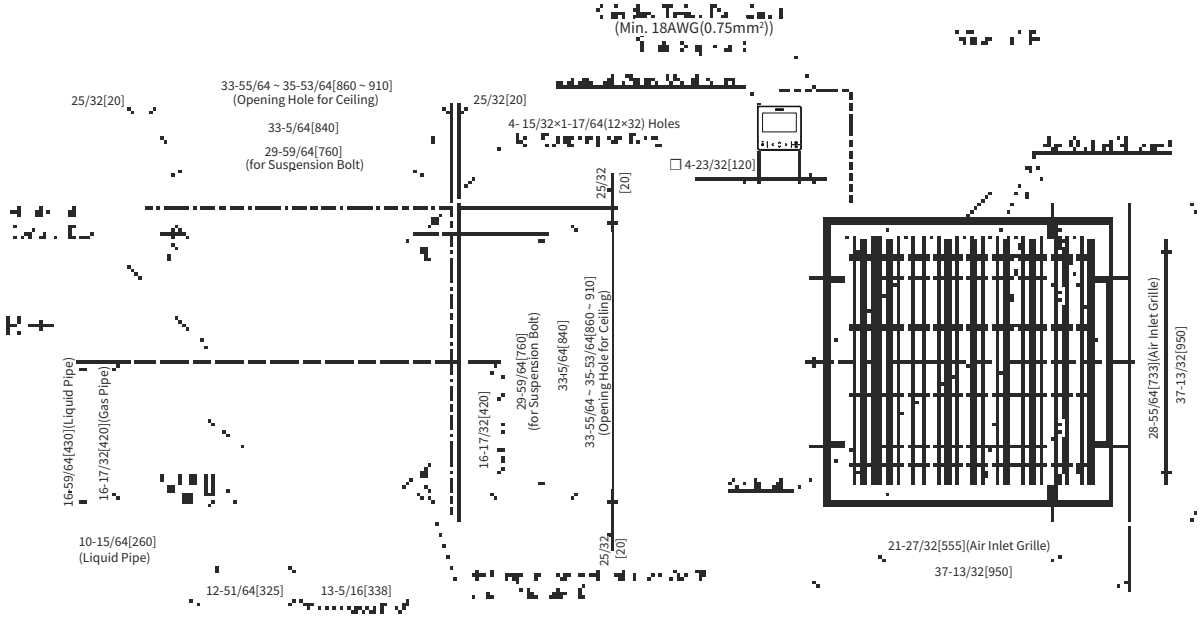
Closed Installation

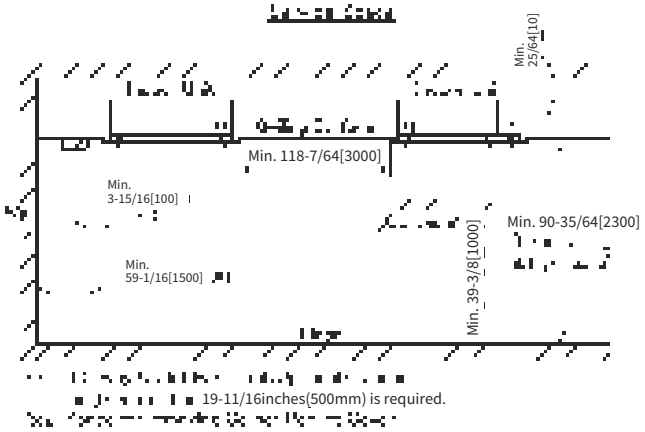
NOTE:

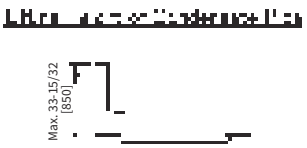
Distance between the wall and panel edge must be min. 59-1/16inches(1500mm) to prevent short circuiting.

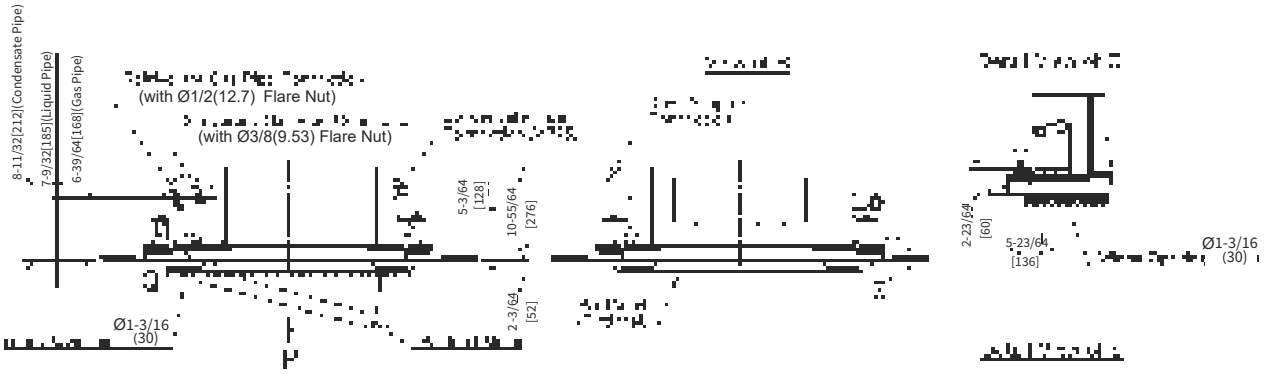
Model: PCI-B18UFA1DQ with Air Panel P-GP160NAP*US

Unit: in[mm]





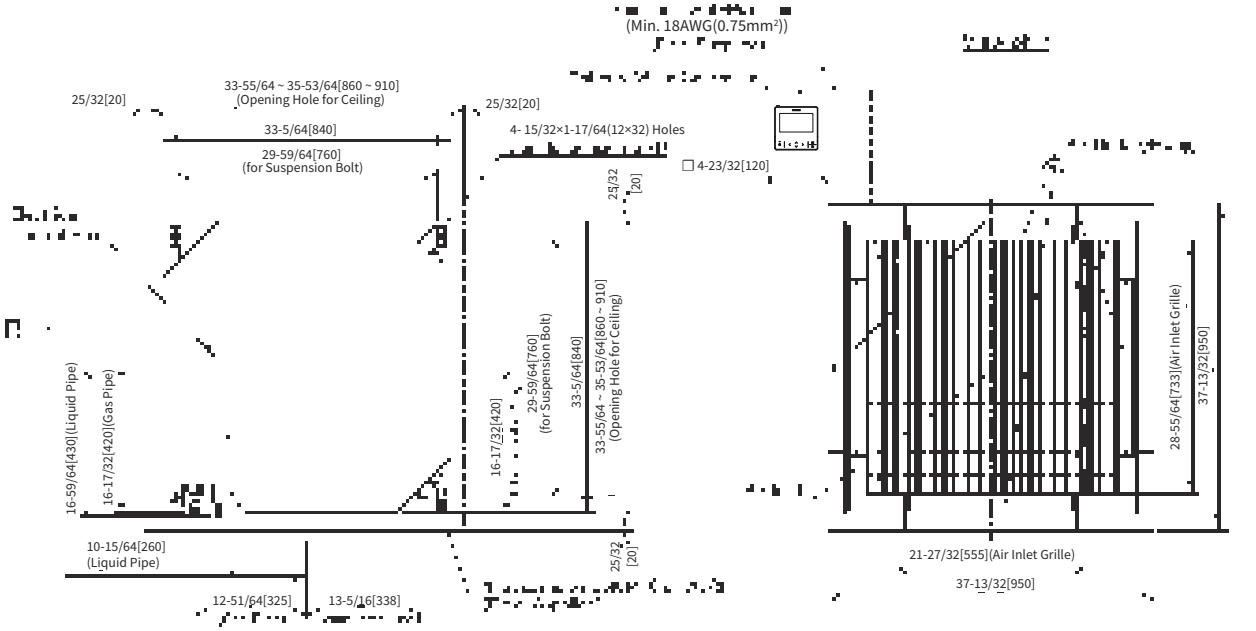


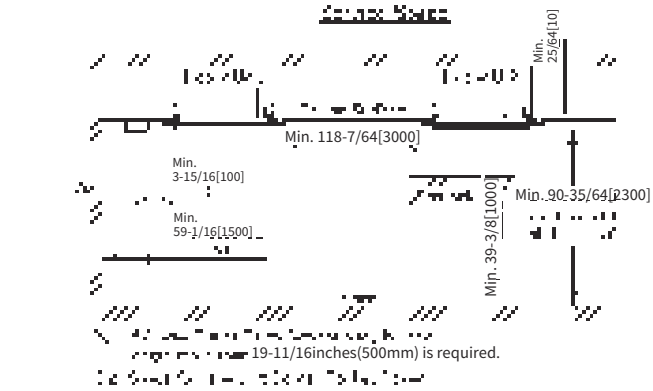


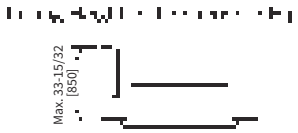
DIMENSIONAL DATA

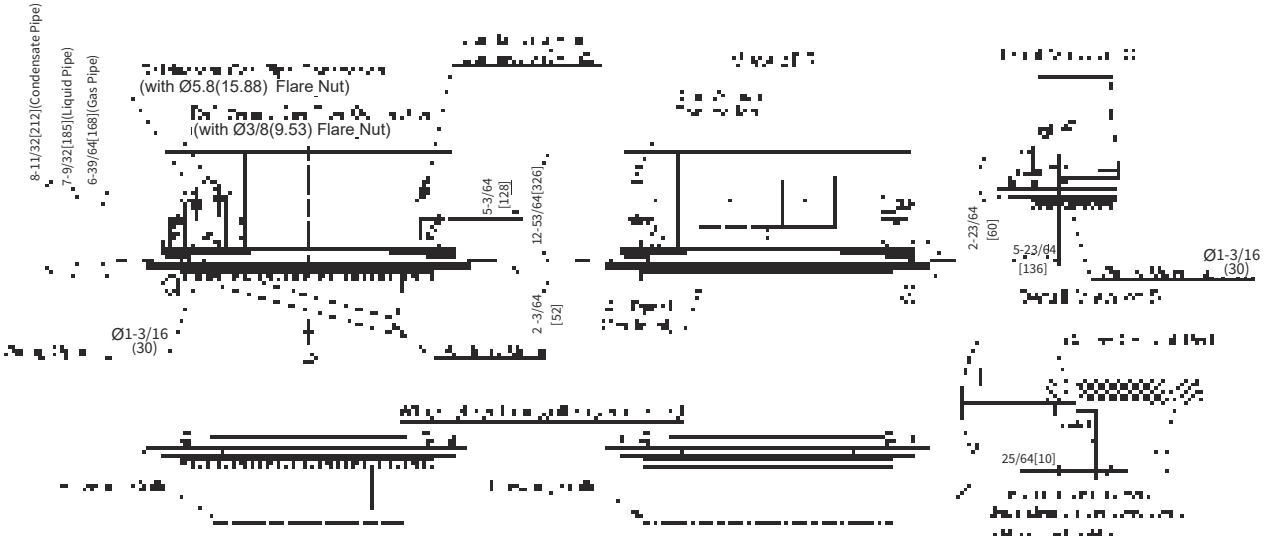
Models: PCI-B24~36UFA1DQ with Air Panel P-GP160NAP*US

Unit: in[mm]





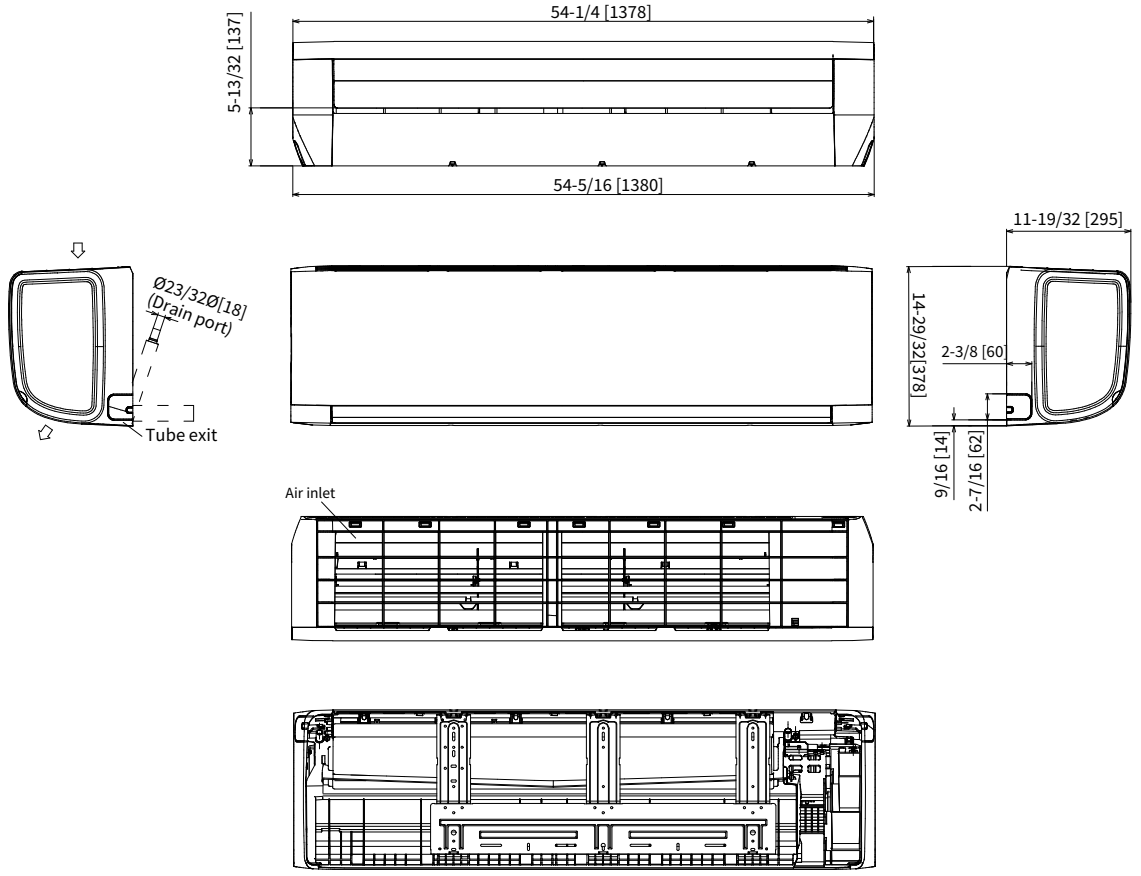




< High-wall Type >

Model: PPK-B30UFA1DQ

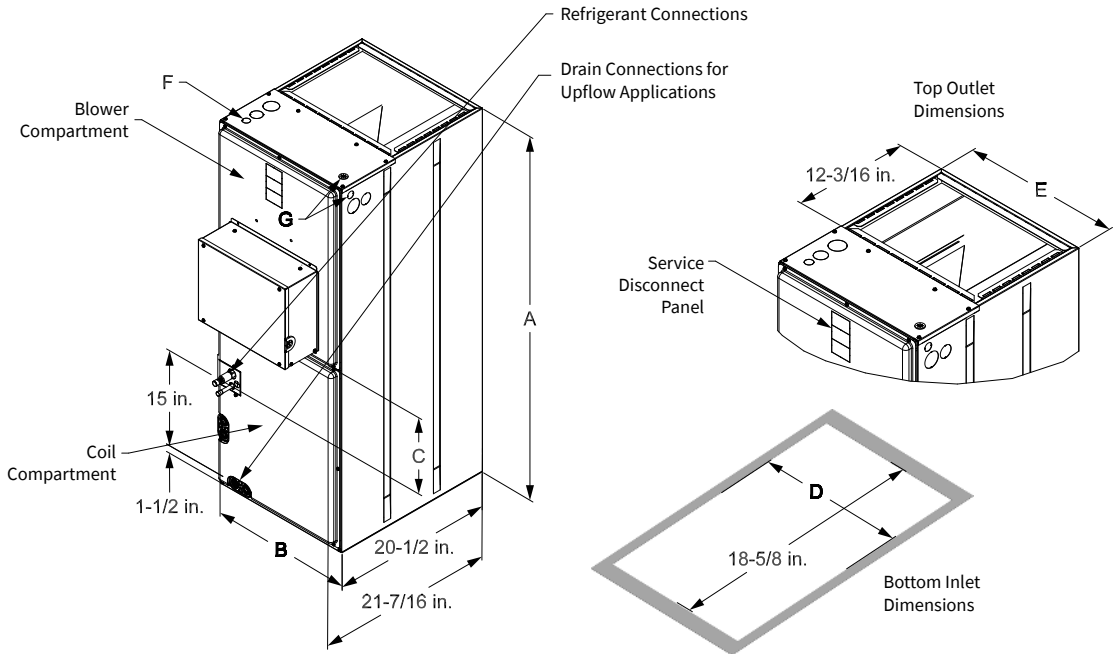
Unit: in.[mm]



DIMENSIONAL DATA

< Air Handlers Type >

Models: JPE18B3XB2HS1A/JPE24B3XC2HS1A/JPE36B3XD2HS1A



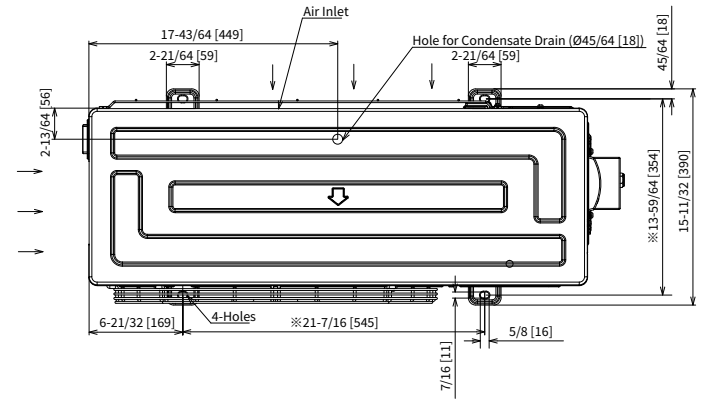
Unit: inch.

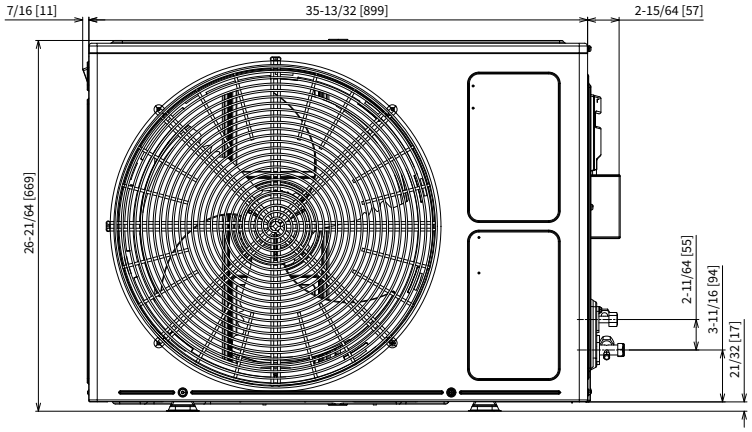
Models	Dimensions					Wiring knockouts (actual conduit size)		Refrigerant connections line size	
	A	B	C	D	E	F	G		
	Height	Width	Opening widths			Power	Control	Liquid	Vapor
JPE18B3XB2HS1A	45-5/8	17-1/2	7-1/2	16-1/2	16-1/2	7/8 (1/2) 1 3/8 (1) 1 23/32 (1 1/4)	7/8 (1/2)	3/8	3/4
JPE24B3XC2HS1A	48-3/8	17-1/2	10	16-1/2	16-1/2				
JPE36B3XD2HS1A	48-3/8	17-1/2	10	16-1/2	16-1/2				

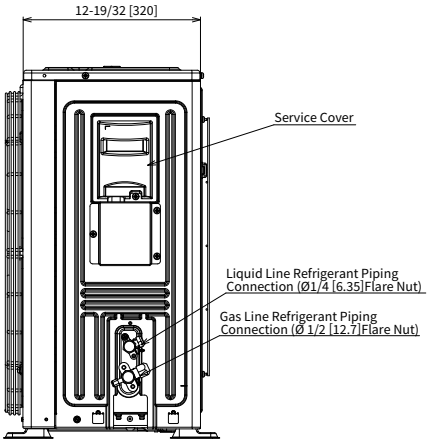
3.2 Outdoor Units

Models: PAS-12~18BLFASDQ1

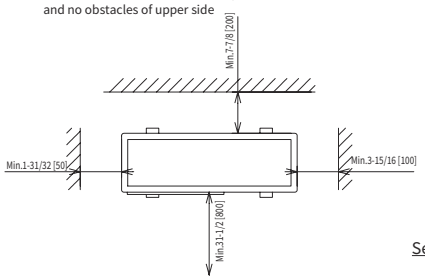
Unit: in. [mm]



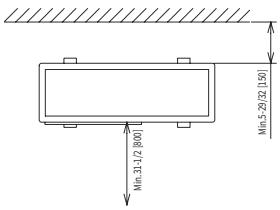




● In case of obstacles on both sides, and no obstacles of upper side



● In case of NO obstacles on both sides, and no obstacles of upper side



Service Space

Drain Water

Drain water is caused during a defrosting operation.

1. Choose a place where well drainage is available. Provide a groove for drain.
2. Do not provide an upward slope from the unit to avoid reverse flow of the drain. Provide a second drain pan under the outdoor unit to collect drain water securely.

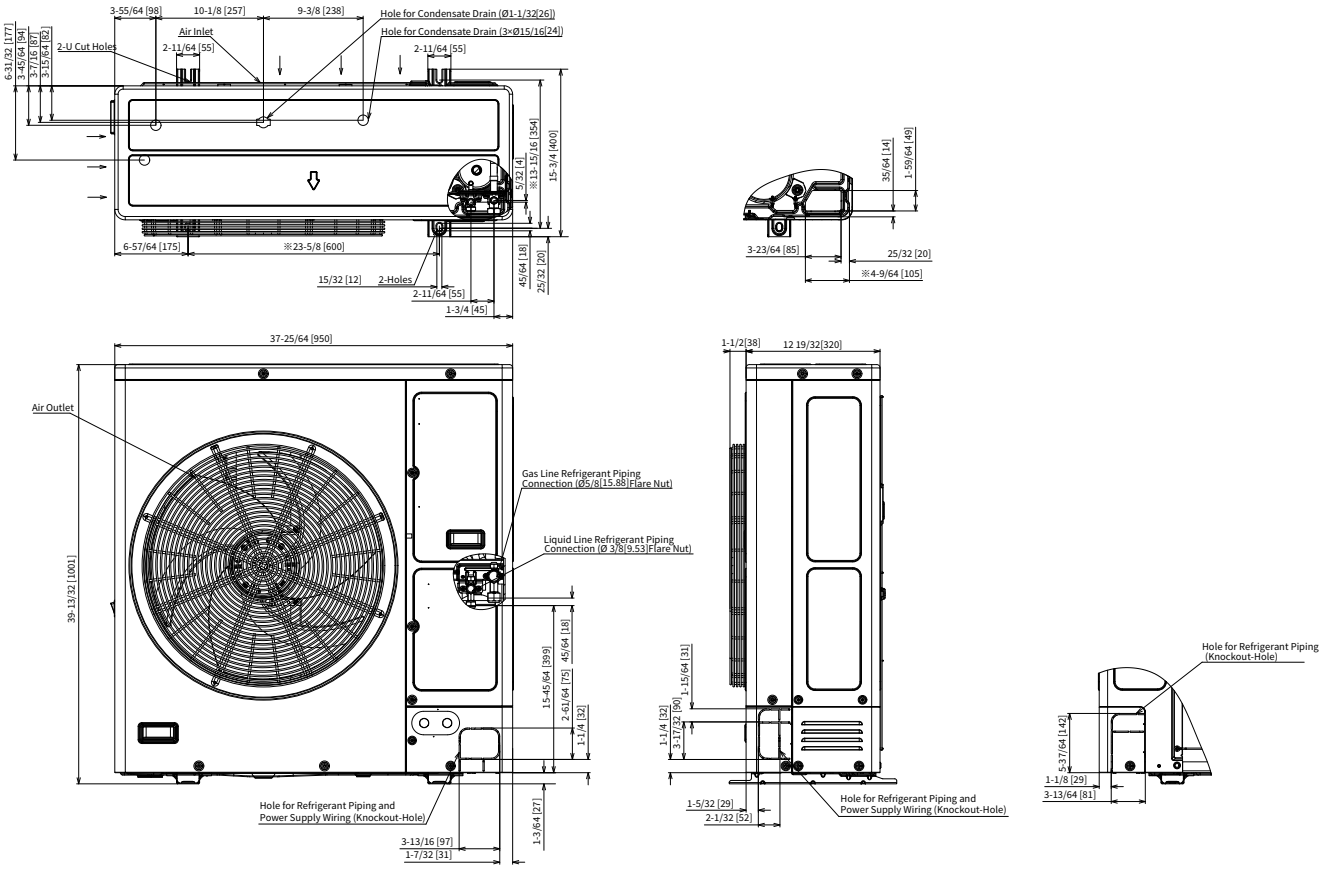
NOTES:

1. Refrigerant is factory charged for actual piping length and no additional charge less than 118-7/64 inches(3000mm) is required in the field. Additional charge more than 118-7/64 inches(3000mm) is required in the field.
2. The dimension marked with ※ indicates the mounting pitch dimension for anchor bolts.

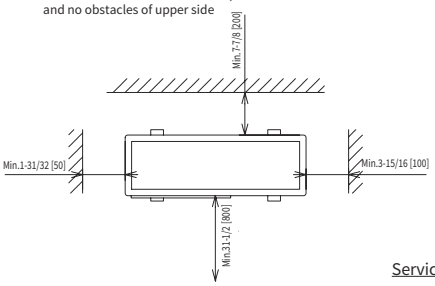
DIMENSIONAL DATA

Models: PAS-24~30BLFASDQ1

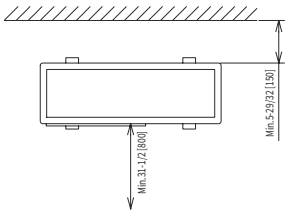
Unit: in. [mm]



● In case of obstacles on both sides, and no obstacles of upper side



● In case of NO obstacles on both sides, and no obstacles of upper side



Service Space

Drain Water

Drain water is caused during a defrosting operation.

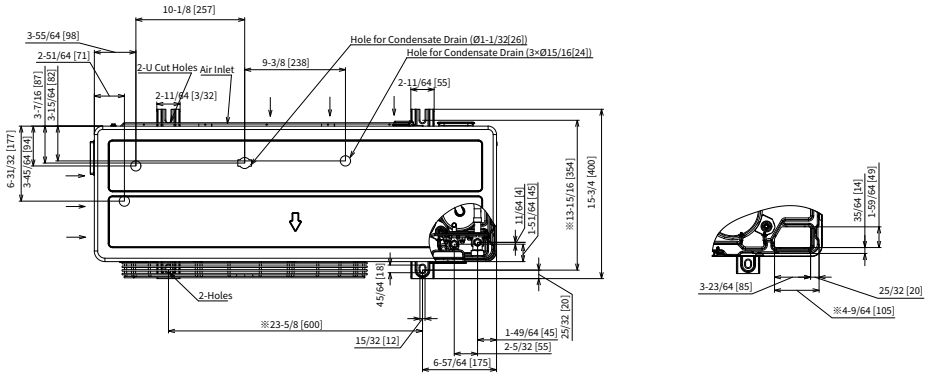
1. Choose a place where well drainage is available. Provide a groove for drain.
2. Do not provide an upward slope from the unit to avoid reverse flow of the drain. Provide a second drain pan under the outdoor unit to collect drain water securely.

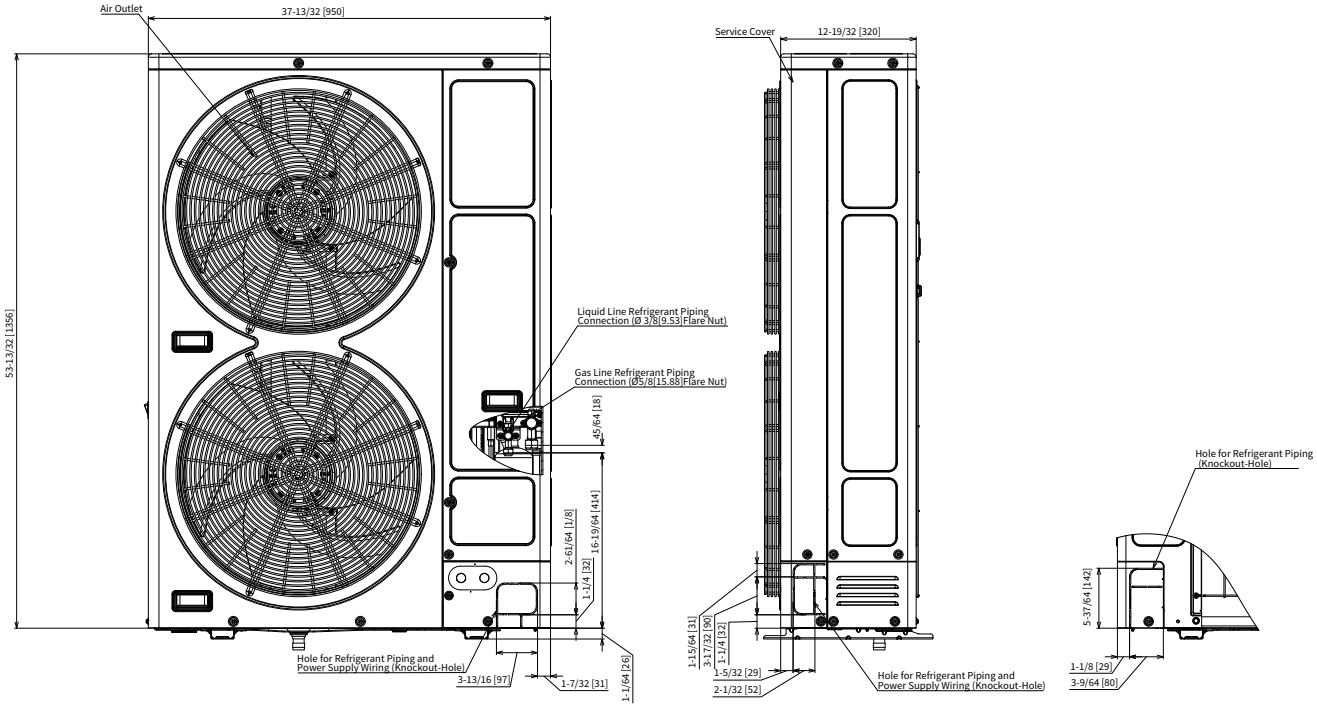
NOTES:

1. Refrigerant is factory charged for actual piping length and no additional charge less than 118-7/64 inches(3000mm) is required in the field. Additional charge more than 118-7/64 inches(3000mm) is required in the field.
2. In the case that dimension of 105 marked with ※※ is provides, it is possible to perform piping work from the bottom without interference such as foundation, etc.
3. The dimension marked with ※ indicates the mounting pitch dimension for anchor bolts.

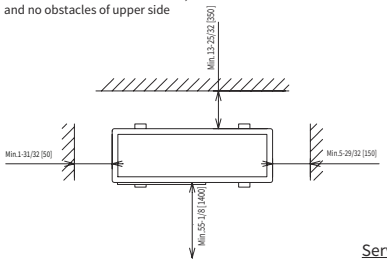
Model: PAS-36BLFASDQ1

Unit: in. [mm]

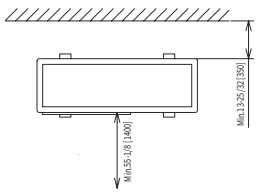




● In case of obstacles on both sides, and no obstacles of upper side



● In case of NO obstacles on both sides, and no obstacles of upper side



Service Space

Drain Water

Drain water is caused during a defrosting operation.

1. Choose a place where well drainage is available. Provide a groove for drain.
2. Do not provide an upward slope from the unit to avoid reverse flow of the drain. Provide a second drain pan under the outdoor unit to collect drain water securely.

NOTES:

1. Refrigerant is factory charged for actual piping length and no additional charge less than 118-7/64 inches(3000mm) is required in the field. Additional charge more than 118-7/64 inches(3000mm) is required in the field.
2. In the case that dimension of 105 marked with ※※ is provides, it is possible to perform piping work from the bottom.
3. The dimension marked with ※ indicates the mounting pitch dimension for anchor bolts.

4. Selection Data

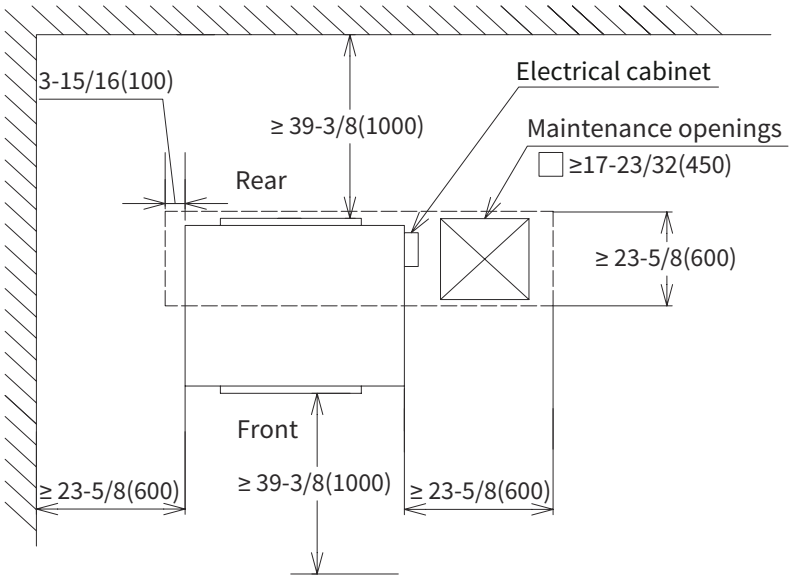
4.1 Service Space

4.1.1 Indoor Units

< MESP Ducted Type >

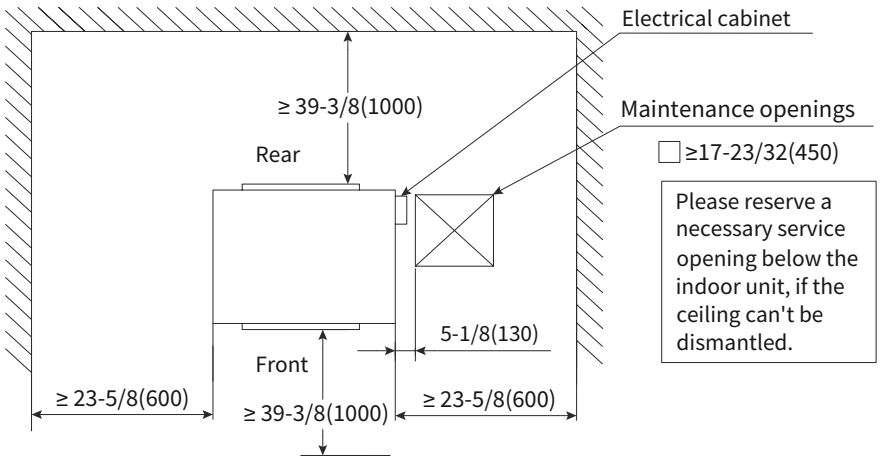
Models: PPIM-B12~B30UFA1DQ

Unit: in. (mm)



Model: PPIM-B36UFA1DQ

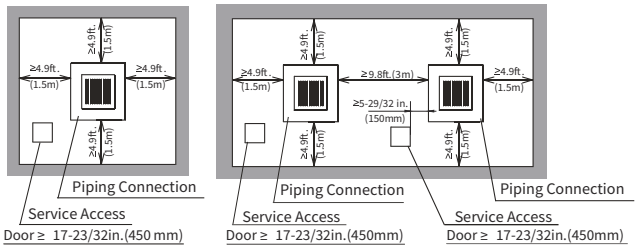
Unit: in. (mm)



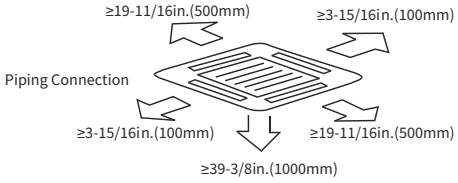
< 4-Way Mini Cassette Type >

Model: PCIM-B12UFA1DQ

Unit: in.(mm)



Distance from Wall Side

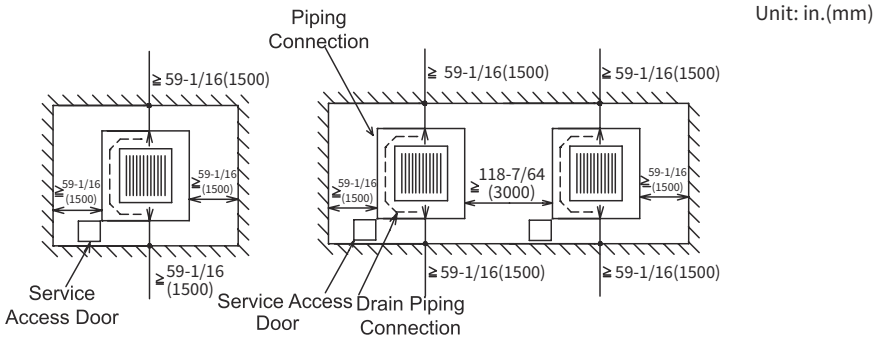


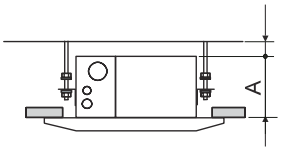
Service Space

< 4-Way Cassette Type >

Models: PCI-B18~B36UFA1DQ

Unit: in.(mm)



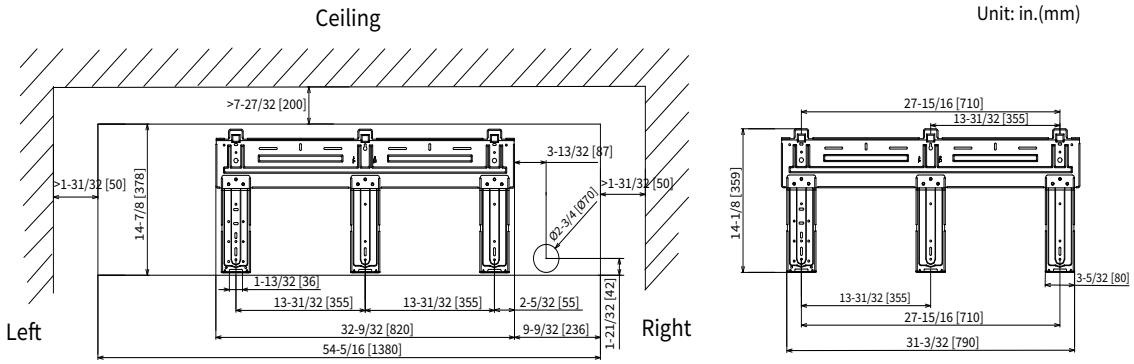


Unit (KBtu)	A [in.(mm)]
PCI-B18UFA1DQ	9-3/8(238)
PCI-B24~36UFA1DQ	11-11/32(288)

< High-wall Type >

Model: PPK-B30UFA1DQ

Unit: in.(mm)



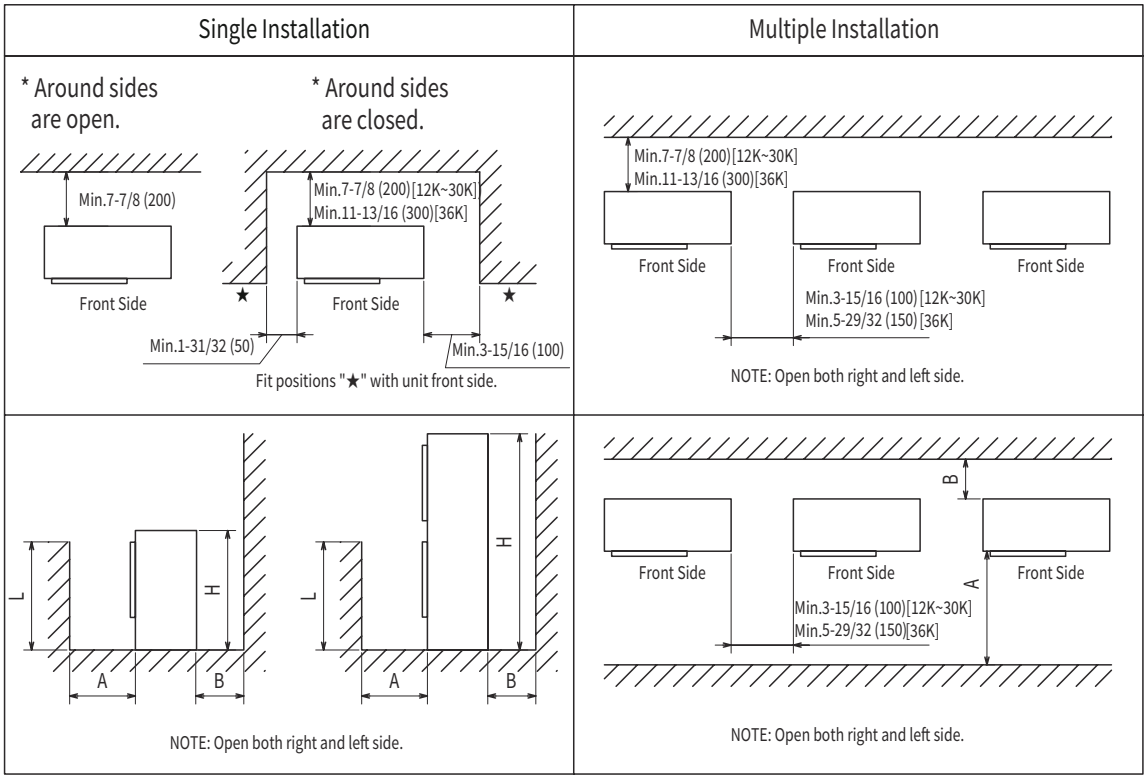
4.1.2 Outdoor Units

Install the outdoor unit with a sufficient space around the outdoor unit for operation and maintenance as shown below.

(1) Obstacles on Inlet Side

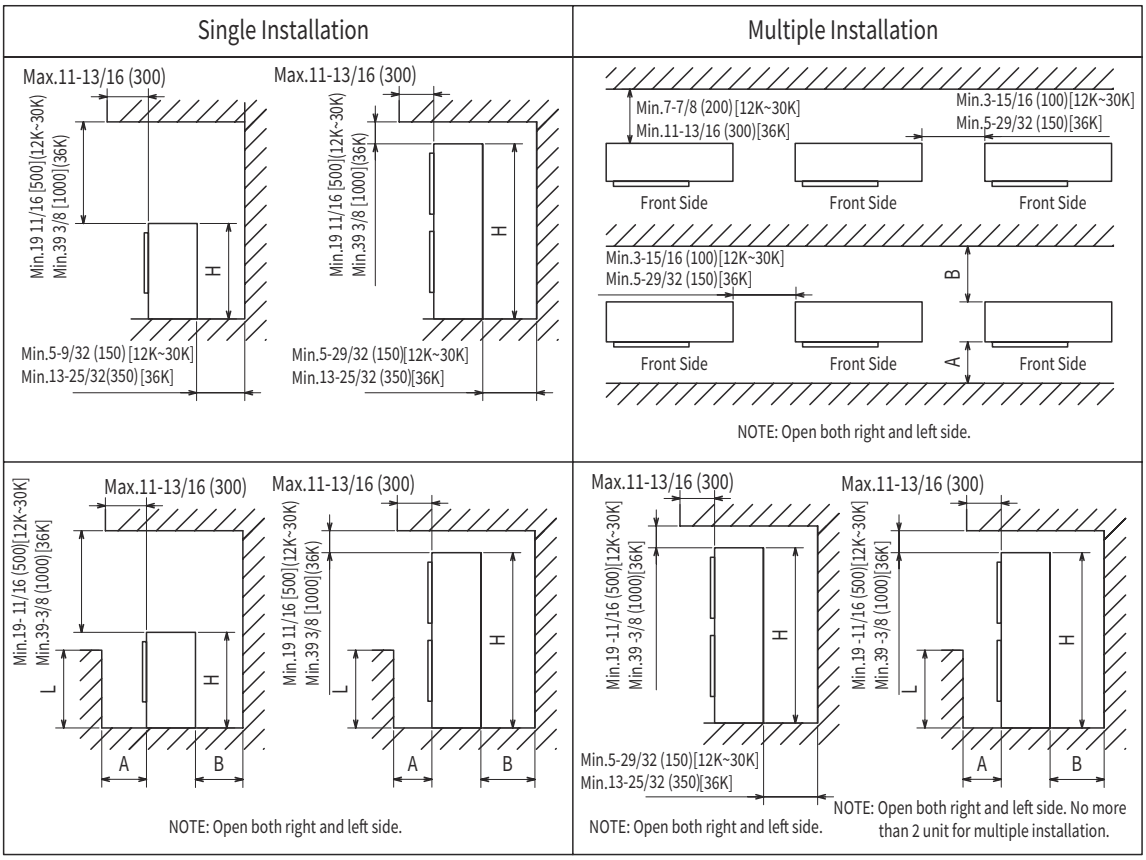
(a) Upper Side is Open.

Unit: in.(mm)



(b) Obstacles in Above

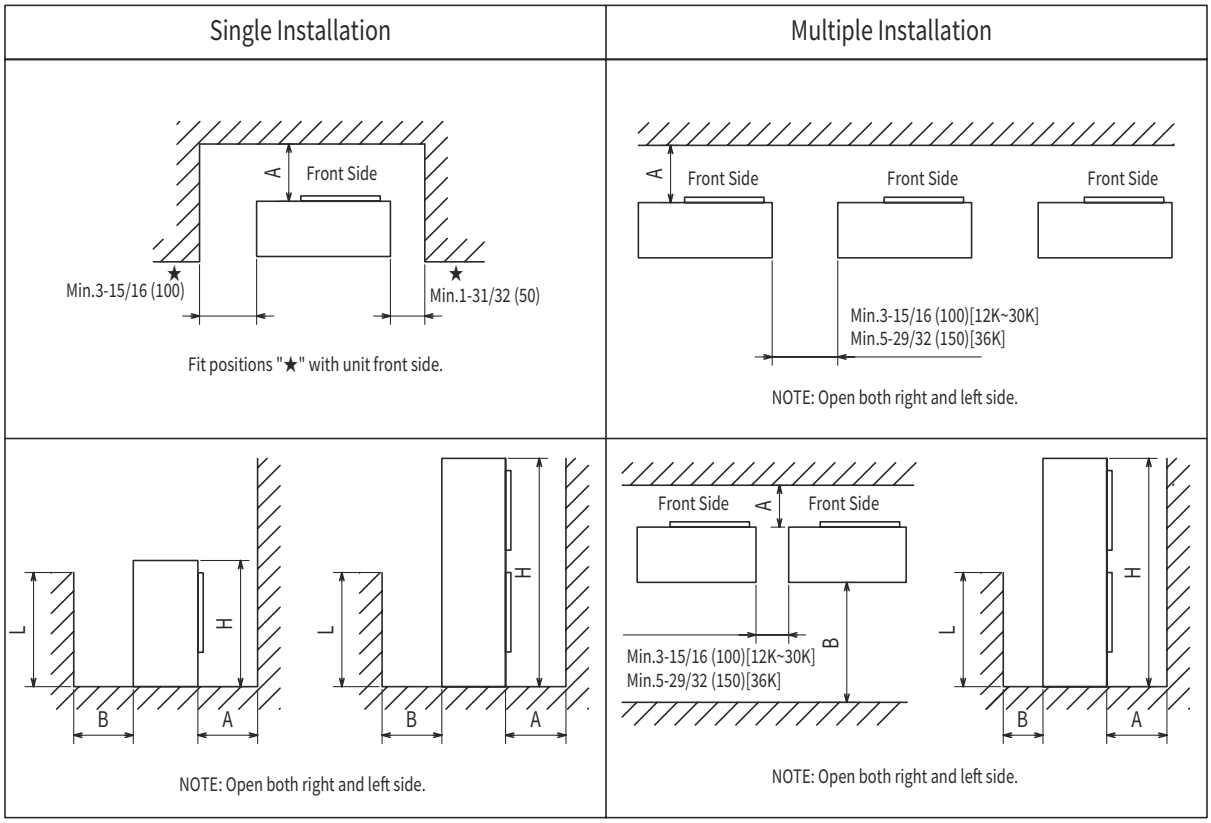
Unit: in.(mm)



(2) Obstacles on Discharge Side

(a) Upper Side is Open.

Unit: in.(mm)

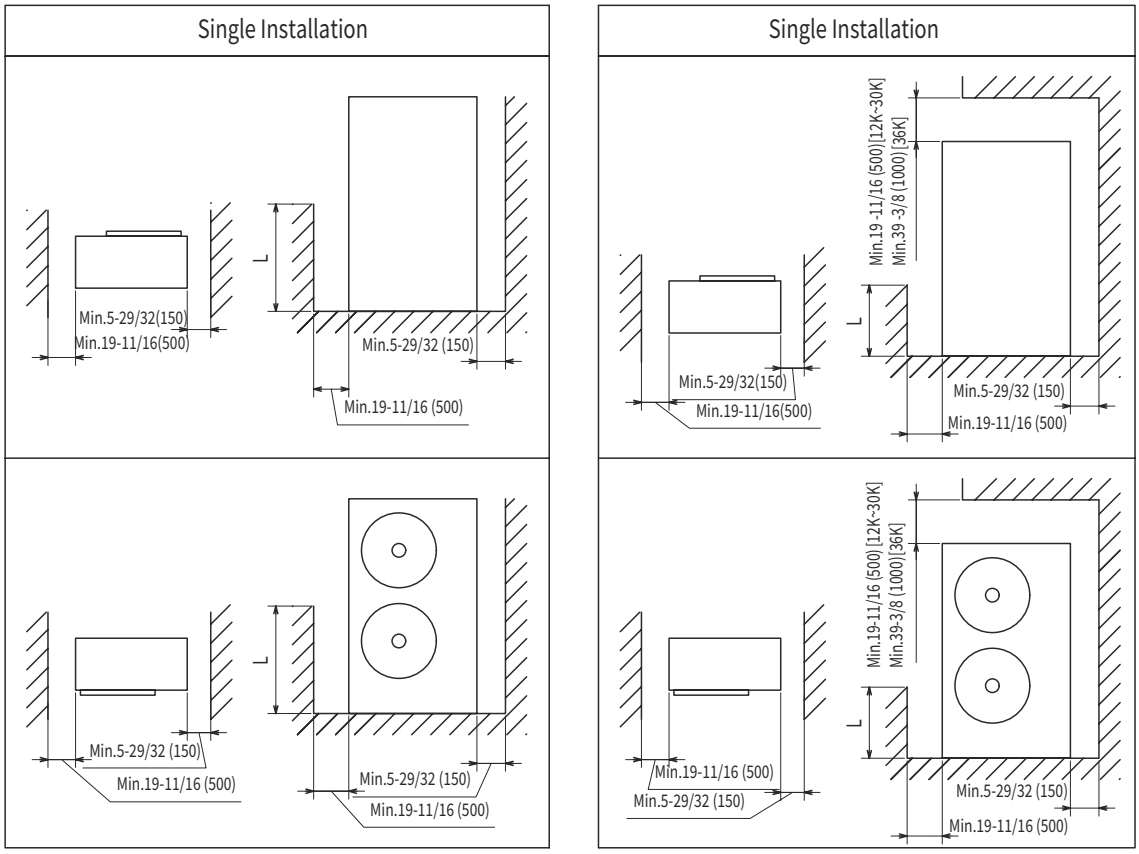


(3) Obstacles in Right and Left

(a) Upper Side is Open.

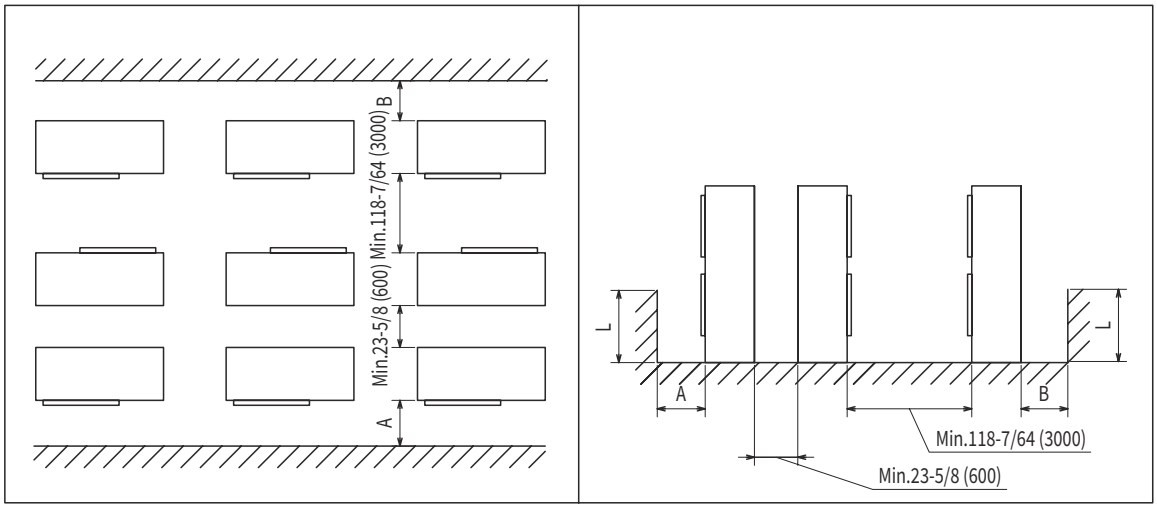
(b) Obstacles in Above

Unit: in.(mm)



(4) Multi-Row and Multiple Installations

Unit: in.(mm)



NOTE:

- If L is larger than H, mount the units on a base so that H is greater or equal to L.
  In this situation ensure that the base is closed and does not allow the airflow to short circuit.
  In each case, install the outdoor unit so that the discharge flow is not short-circuited.

Unit: in.(mm)

L	A	B
0 < L ≤ 1/2H	23-5/8(600) or more	11-13/16(300) or more
1/2H < L ≤ H	55-1/8(1400) or more	13-25/32(350) or more

4.2 Meaning of Model Name

(1) Meaning of Model Name for Indoor Unit

Example: PPIM - B12 U F A1 D Q

- Factory (Q:HAPQ)
- Power Supply (208/230V~,60Hz)
- Design Generation and Design Version
- Refrigerant: R32
- Standard ambient HP (T1 Condition)
- 12 kBtu/hr
- Unit Type: PPIM: MESP Ducted Type
  PCIM: 4-Way Mini Cassette Type
  PCI: 4-Way Cassette Type
  PPK: High-wall Type

Example: J P E 18 B 3 X B 2 H S 1 A

- Style letter (minor revision): Style A
- Generation (major revision): First generation
- Accessories: A2L sensor
- Control Strategy: Hitachi PAC Controller
- Voltage (voltage-phase-hertz): 208/230-1-60
- Slab Size: B: 2R-16-18 C: 2R-20-18 D: 3R-20-14
- Metering Device: No valve
- Refrigerant: R32
- Cabinet width: 17.5 in.
- Nominal capacity: 18: 1.5 ton 24: 2.0 ton 36: 3.0 ton
- Motor type: Constant torque
- Air handler type: Hitachi PAC
- Product type: Air handler

(2) Meaning of Model Name for Outdoor Unit

Example: PAS - 12B L F A S D Q 1

- Version
- Factory (Q:HAPQ)
- Power Supply (208/230V~,60Hz)
- Market Position
- Generation
- Refrigerant: R32
- Low ambient HP (T1 Condition)
- 12 kBtu/hr
- Unit Type (PAS: Outdoor Unit)

4.3 Capacity Ratio Tables

The following charts show the characteristics of unit capacity ratio which corresponds with the operation ambient temperature.

Conditions:

Pipe length/height difference:25ft (7.5m)/0ft (0m);

Fan speed at high fan speed.

4.3.1 Cooling Capacity Ratio

Model	Rated Capacity (Btu/h)	Indoor intake air DB °F(°C)	Indoor intake air WB °F(°C)	Outdoor intake air DB °F(°C)					
				68°F(20°C)	77°F(25°C)	86°F(30°C)	95°F(35°C)	104°F(40°C)	115°F(46°C)
12K	12000	72°F(22°C)	61°F(16°C)	1.08	1.07	1.02	0.97	0.94	0.91
		77°F(25°C)	64°F(18°C)	1.14	1.13	1.08	1.03	1.00	0.94
		81°F(27°C)	66°F(19°C)	1.19	1.17	1.12	1.07	1.04	0.97
		86°F(30°C)	68°F(20°C)	1.23	1.21	1.17	1.12	1.08	1.03
		90°F(32°C)	73°F(23°C)	1.32	1.29	1.25	1.20	1.15	1.10
18K	18000	72°F(22°C)	61°F(16°C)	1.07	1.05	1.01	0.97	0.94	0.88
		77°F(25°C)	64°F(18°C)	1.13	1.11	1.07	1.03	0.99	0.92
		81°F(27°C)	66°F(19°C)	1.18	1.15	1.10	1.06	1.03	0.95
		86°F(30°C)	68°F(20°C)	1.21	1.19	1.15	1.10	1.08	1.02
		90°F(32°C)	73°F(23°C)	1.30	1.28	1.24	1.19	1.15	1.08
24K	24000	72°F(22°C)	61°F(16°C)	1.09	1.07	1.03	1.00	0.98	0.95
		77°F(25°C)	64°F(18°C)	1.16	1.14	1.09	1.07	1.04	0.98
		81°F(27°C)	66°F(19°C)	1.20	1.17	1.13	1.10	1.08	1.03
		86°F(30°C)	68°F(20°C)	1.28	1.22	1.17	1.14	1.12	1.08
		90°F(32°C)	73°F(23°C)	1.36	1.31	1.26	1.22	1.18	1.12
30K	30000	72°F(22°C)	61°F(16°C)	0.99	0.97	0.93	0.90	0.88	0.83
		77°F(25°C)	64°F(18°C)	1.06	1.04	0.99	0.97	0.94	0.9
		81°F(27°C)	66°F(19°C)	1.10	1.07	1.03	1.00	0.98	0.94
		86°F(30°C)	68°F(20°C)	1.17	1.12	1.07	1.04	1.02	0.97
		90°F(32°C)	73°F(23°C)	1.24	1.19	1.14	1.10	1.06	1.02
36K	36000	72°F(22°C)	61°F(16°C)	1.04	1.01	0.98	0.94	0.90	0.85
		77°F(25°C)	64°F(18°C)	1.10	1.07	1.04	1.00	0.95	0.91
		81°F(27°C)	66°F(19°C)	1.13	1.10	1.07	1.03	0.99	0.94
		86°F(30°C)	68°F(20°C)	1.19	1.15	1.11	1.06	1.03	0.98
		90°F(32°C)	73°F(23°C)	1.26	1.23	1.19	1.15	1.11	1.06

4.3.2 Heating Capacity Ratio

Model	Rated Capacity (Btu/h)	Indoor intake air DB °F(°C)	Outdoor intake air WB °F(°C)								
			-13°F(-25°C)	-4°F(-20°C)	5°F(-15°C)	14°F(-10°C)	23°F(-5°C)	32°F(0°C)	41°F(5°C)	50°F(10°C)	59°F(15°C)	68°F(20°C)
12K	14000	60°F(16°C)	0.68	0.79	1.04	1.04	1.04	1.04	1.04	1.14	1.29	1.42
		70°F(21°C)	0.64	0.75	1.00	1.00	1.00	1.00	1.00	1.10	1.25	1.38
		80°F(27°C)	0.60	0.71	0.96	0.96	0.96	0.96	0.96	1.06	1.21	1.34
18K	20000	60°F(16°C)	0.81	0.92	1.09	1.09	1.09	1.09	1.09	1.19	1.34	1.48
		70°F(21°C)	0.77	0.88	1.05	1.05	1.05	1.05	1.05	1.15	1.30	1.44
		80°F(27°C)	0.73	0.84	1.01	1.01	1.01	1.01	1.01	1.11	1.26	1.40
24K	24000	60°F(16°C)	0.78	0.89	1.07	1.07	1.07	1.07	1.07	1.12	1.34	1.47
		70°F(21°C)	0.74	0.85	1.03	1.03	1.03	1.03	1.03	1.08	1.30	1.43
		80°F(27°C)	0.70	0.81	0.99	0.99	0.99	0.99	0.99	1.04	1.26	1.39
30K	32000	60°F(16°C)	0.69	0.79	1.04	1.04	1.04	1.04	1.04	1.14	1.32	1.51
		70°F(21°C)	0.65	0.75	1.00	1.00	1.00	1.00	1.00	1.10	1.28	1.47
		80°F(27°C)	0.61	0.71	0.96	0.96	0.96	0.96	0.96	1.06	1.24	1.43
36K	38000	60°F(16°C)	0.77	0.87	1.04	1.04	1.04	1.04	1.04	1.14	1.31	1.48
		70°F(21°C)	0.73	0.83	1.00	1.00	1.00	1.00	1.00	1.10	1.27	1.44
		80°F(27°C)	0.69	0.79	0.96	0.96	0.96	0.96	0.96	1.06	1.23	1.40

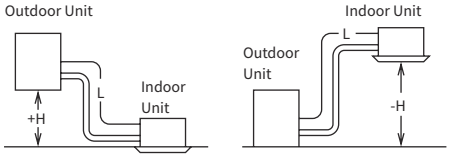
4.4 Correction Factor According to Piping Length

4.4.1 Correction Factor for Cooling Capacity

The correction factors are shown in the following figure.

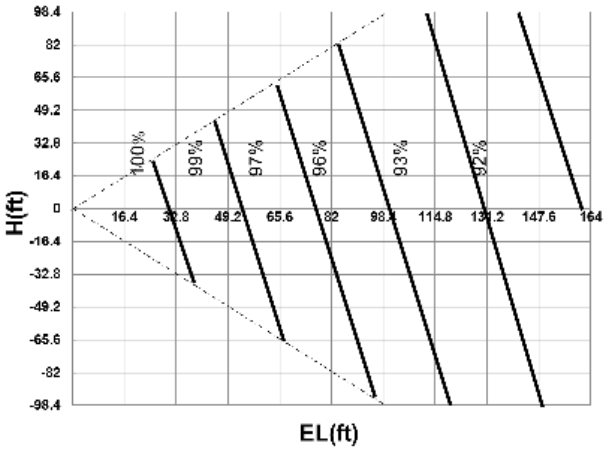
Equivalent Piping Length for

- One 90° Elbow is 1.6ft(0.5m).
- One 180° Bend is 4.9ft(1.5m).

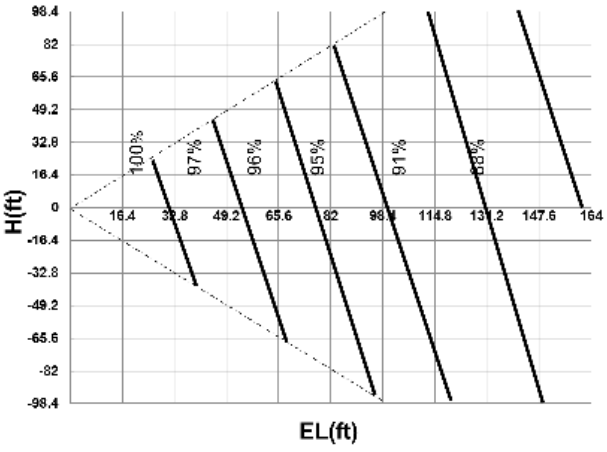


H: Vertical Distance Between Indoor Unit and Outdoor Unit
EL: Equivalent Total Distance Between Indoor Unit and Outdoor Unit (Equivalent One-Way Piping Length)
H>0: Position of Outdoor Unit Higher Than Position of Indoor Unit
L: Actual One-Way Piping Length Between Indoor Unit and Outdoor Unit

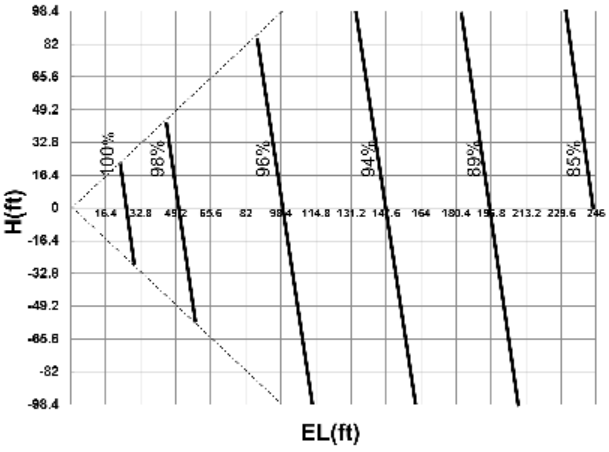
PAS-12BLFASDQ1



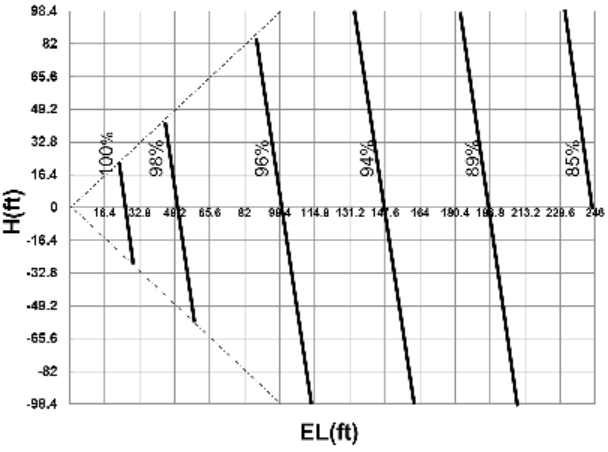
PAS-18BLFASDQ1



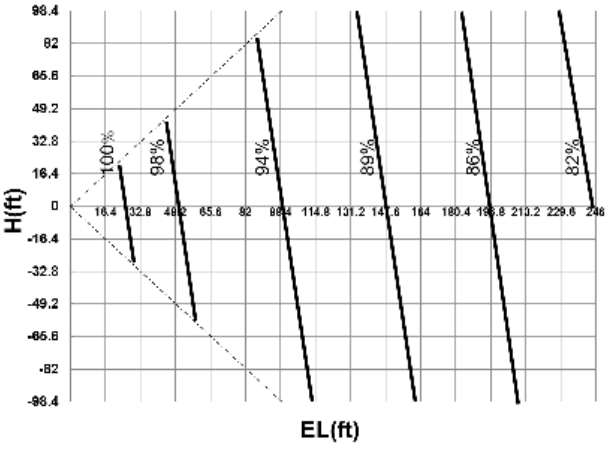
PAS-24BLFASDQ1



PAS-30BLFASDQ1



PAS-36BLFASDQ1

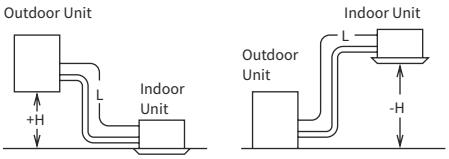


4.4.2 Correction Factor for Heating Capacity

The correction factors are shown in the following figure.

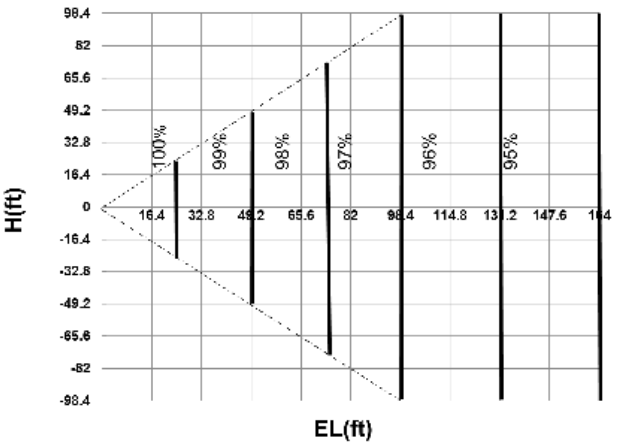
Equivalent Piping Length for

- One 90° Elbow is 1.6ft(0.5m).
- One 180° Bend is 4.9ft(1.5m).



H: Vertical Distance Between Indoor Unit and Outdoor Unit
EL: Equivalent Total Distance Between Indoor Unit and Outdoor Unit (Equivalent One-Way Piping Length)
H>0: Position of Outdoor Unit Higher Than Position of Indoor Unit
L: Actual One-Way Piping Length Between Indoor Unit and Outdoor Unit

PAS-12BLFASDQ1



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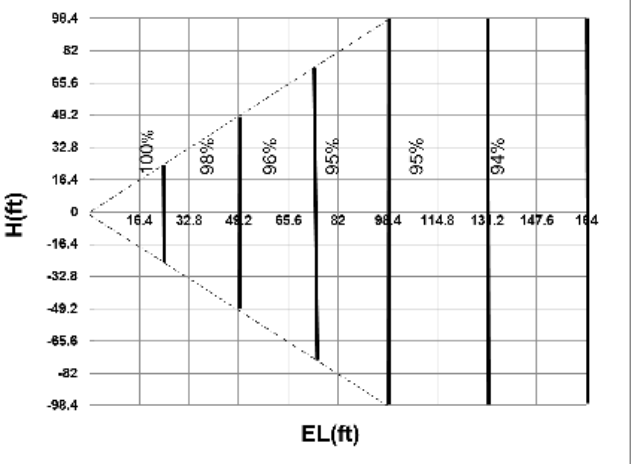
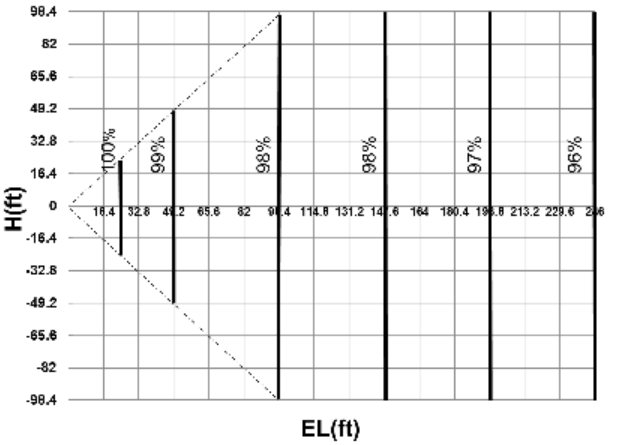
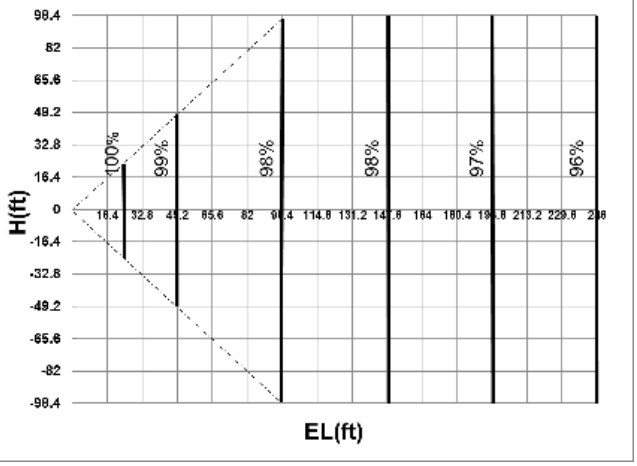


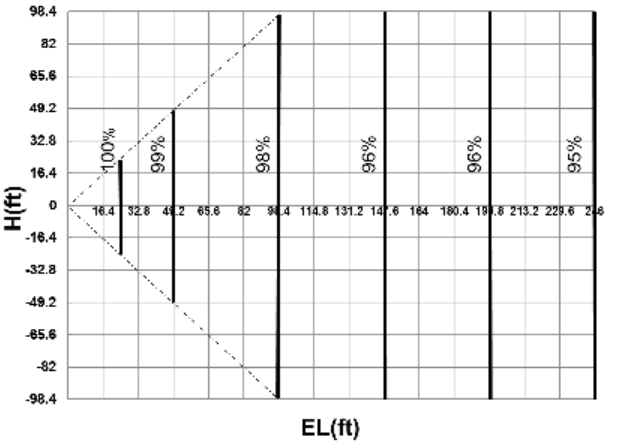
PAS-24BLFASDQ1



PAS-30BLFASDQ1



PAS-36BLFASDQ1



4.4.3 Addition of Refrigerant

Additional charging is not necessary if the refrigerant piping length does not exceed 98.4ft(30m).
If the refrigerant piping length exceeds 98.4ft(30m), charge the unit with additional R32 refrigerant according to the permitted piping length in the chart below.

- When the unit is stopped, charge the unit with the additional refrigerant through the liquid stop valve after the pipe extensions and indoor unit have been vacuumized.
- When the unit is operating, add refrigerant to the gas check valve using a safety charger. Do not add liquid refrigerant directly to the check valve.

After charging the unit with refrigerant, note the added refrigerant amount on the service label (attached to the unit).

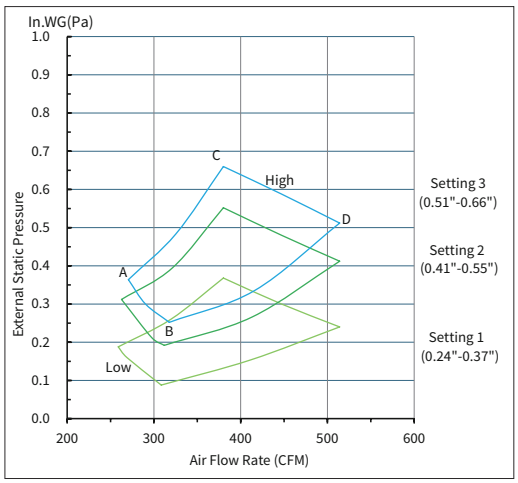
Model	Max. piping length	Max. height difference	Additional refrigerant charging amount
PAS-12BLFASDQ1	164ft (50m)	98.4ft (30m)	0.194oz/ft (18g/m)
PAS-18BLFASDQ1	164ft (50m)	98.4ft (30m)	0.194oz/ft (18g/m)
PAS-24BLFASDQ1	246ft (75m)	98.4ft (30m)	0.376oz/ft (35g/m)
PAS-30BLFASDQ1	246ft (75m)	98.4ft (30m)	0.376oz/ft (35g/m)
PAS-36BLFASDQ1	246ft (75m)	98.4ft (30m)	0.376oz/ft (35g/m)

NOTE:
When the 18K outdoor unit is connected to the AHU unit, the additional refrigerant charging amount is 0.376oz/ft (35g/m).

4.5 Fan Performance

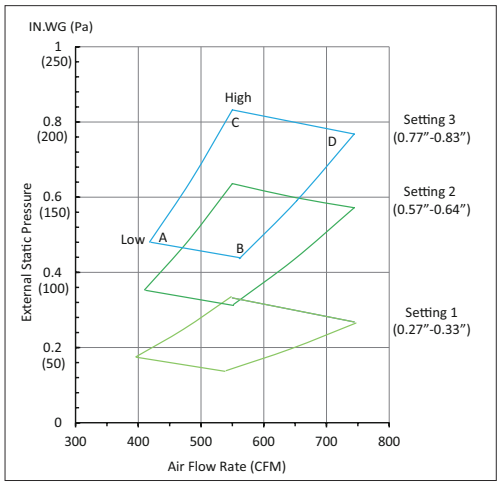
< MESP Ducted Type >

< PPIM-B12UFA1DQ >



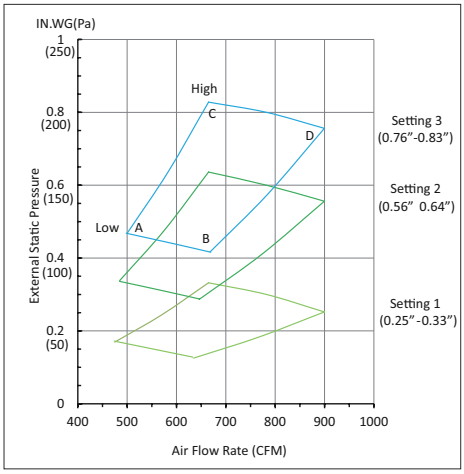
Indoor Unit ESP Setting	Point A		Point B		Point C		Point D	
	IN.WG	CFM	IN.WG	CFM	IN.WG	CFM	IN.WG	CFM
1 (0.24"-0.37")	0.19	259	0.09	308	0.37	380	0.24	514
2 (0.41"-0.55")	0.31	263	0.19	312	0.55	380	0.41	514
3 (0.51"-0.66")	0.36	271	0.25	318	0.66	380	0.51	514

< PPIM-B18UFA1DQ >



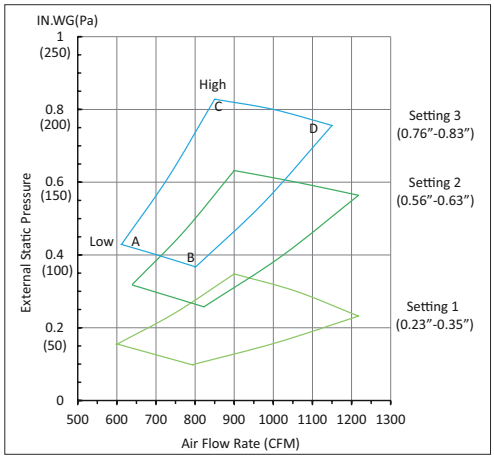
Indoor Unit ESP Setting	Point A		Point B		Point C		Point D	
	IN.WG	CFM	IN.WG	CFM	IN.WG	CFM	IN.WG	CFM
1 (0.27"-0.33")	0.17	397	0.14	538	0.33	550	0.27	744
2 (0.57"-0.64")	0.35	412	0.31	552	0.64	550	0.57	744
3 (0.77"-0.83")	0.48	420	0.44	563	0.83	550	0.77	744

< PPIM-B24UFA1DQ >



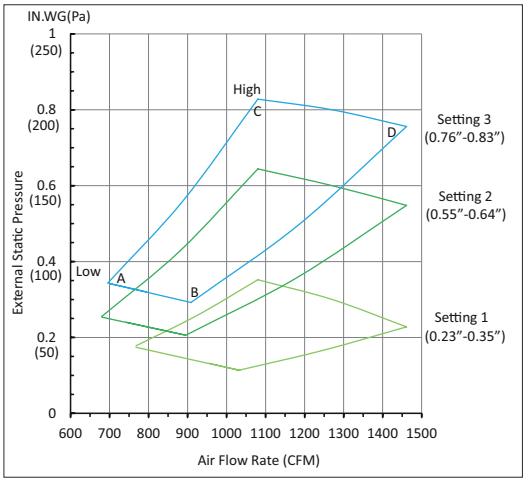
Indoor Unit ESP Setting	Point A		Point B		Point C		Point D	
	IN.WG	CFM	IN.WG	CFM	IN.WG	CFM	IN.WG	CFM
1 (0.25"-0.33")	0.17	474	0.13	633	0.33	665	0.25	900
2 (0.56"-0.64")	0.34	485	0.29	646	0.64	665	0.56	900
3 (0.76"-0.83")	0.47	498	0.42	669	0.83	665	0.76	900

< PPIM-B30UFA1DQ >



Indoor Unit ESP Setting	Point A		Point B		Point C		Point D	
	IN.WG	CFM	IN.WG	CFM	IN.WG	CFM	IN.WG	CFM
1 (0.23"-0.35")	0.16	598	0.10	795	0.35	900	0.23	1218
2 (0.56"-0.63")	0.32	640	0.26	824	0.63	900	0.56	1218
3 (0.76"-0.83")	0.43	610	0.37	799	0.83	850	0.76	1150

< PPIM-B36UFA1DQ >



Indoor Unit ESP Setting	Point A		Point B		Point C		Point D	
	IN.WG	CFM	IN.WG	CFM	IN.WG	CFM	IN.WG	CFM
1 (0.23"-0.35")	0.17	768	0.11	1034	0.35	1080	0.23	1461
2 (0.55"-0.64")	0.25	681	0.21	895	0.64	1080	0.55	1461
3 (0.76"-0.83")	0.34	699	0.29	910	0.83	1080	0.76	1461

5. Electrical Data

5.1 Indoor Units

Model		Unit Main Power			Application Voltage(V)		MCA(A)	MOP(A)	MAX Current(A)	Max Power Input(kW)
		VOL	PH	HZ	Maximum	Minimum				
MESP Ducted	PPIM-B12UFA1DQ	AC 208/230V	1	60	253	187	1.54	15	1.23	0.193
	PPIM-B18UFA1DQ						1.75	15	1.56	0.220
	PPIM-B24UFA1DQ						2.05	15	1.83	0.262
	PPIM-B30UFA1DQ						2.39	15	2.12	0.310
	PPIM-B36UFA1DQ						3.14	15	2.78	0.417
4-Way Mini Cassette	PCIM-B12UFA1DQ	AC 208/230V	1	60	253	187	0.84	15	0.67	0.041
4-Way Cassette	PCI-B18UFA1DQ	AC 208/230V	1	60	253	187	0.49	15	0.41	0.039
	PCI-B24UFA1DQ						0.61	15	0.51	0.051
	PCI-B30UFA1DQ						0.93	15	0.77	0.090
	PCI-B36UFA1DQ						1.36	15	1.11	0.140
High-wall	PPK-B30UFA1DQ	AC 208/230V	1	60	253	187	0.80	15	0.64	0.082

VOL: Rated Unit Power Supply Voltage (Plated)(V)
PH: Phase (ϕ)
HZ: Frequency (Hz)
MCA: Minimum Circuit Ampacity (A)
MOP: Maximum Overcurrent Protection (A)

Air Handlers Type:

Electrical data for single source power supply: 1 phase(208/230-1-60)

Air handler models	Heater Models[1,2]	Heater Amps @240V	Field Wiring			
			Min. Circuit Ampacity		MOP.[3]	
			208V	230V	208V	230V
JPE18B3XB2HS1A	8HK(0,1)6500206	10.0	14.1	15.2	15	20
	8HK(0,1)6500506	20.0	24.9	27.2	25	30
	8HK(0,1)6500806	32.1	38.1	41.8	40	45
	8HK(0,1)6501006	40.0	46.5	51.1	50	60
JPE24B3XC2HS1A	8HK(0,1)6500206	10.0	14.1	15.2	15	20
	8HK(0,1)6500506	20.0	24.9	27.2	25	30
	8HK(0,1)6500806	32.1	38.1	41.8	40	45
	8HK(0,1)6501006	40.0	46.5	51.1	50	60
	8HK(1,2)6501506	60.0	68.2	75	70	80

Air handler models	Heater Models[1,2]	Heater Amps @240V	Field Wiring			
			Min. Circuit Ampacity		MOP.[3]	
			208V	230V	208V	230V
JPE36B3XD2HS1A	8HK(0,1)6500206	10.0	15.6	16.7	20	20
	8HK(0,1)6500506	20.0	26.4	28.7	30	30
	8HK(0,1)6500806	32.1	39.6	43.3	40	45
	8HK(0,1)6501006	40.0	48	52.6	50	60
	8HK(1,2)6501506	60.0	69.7	76.5	70	80
	8HK(1,2)6502006	80.0	91.3	100.4	100	110

1 (0,1) - 0 = no service disconnect OR 1 = with service disconnect.

2 (1,2) - 1 = with service disconnect, no breaker jumper bar OR 2 = with service disconnect & breaker jumper bar.

3 MOP = Maximum Overcurrent Protection device; must be HACR type circuit breaker or time delay fuse. Refer to the latest edition of the National Electric Code or in Canada the Canadian electrical Code and local codes to determine correct wire sizing.

Electrical data for multi-source power supply: 208/230-1-60

Air handler models	Heater Models[1]	Heater Amps @240V	Min. circuit ampacity						MOP.[2]					
			208V			230V			208V			230V		
			Circuit						Circuit					
			1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
JPE24B3XC2HS1A	8HK16501506	60	24.7	43.5	–	26.9	48.1	–	25	45	–	30	50	–
JPE36B3XD2HS1A	8HK16501506	60	26.2	43.5	–	28.4	48.1	–	30	45	–	30	50	–
	8HK16502006	80	48.0	43.3	–	52.6	47.8	–	50	45	–	60	50	–

1 8HK1 = with service disconnect, no breaker jumper bar.

2 MOP = Maximum Overcurrent Protection device; must be HACR type circuit breaker or time delay fuse. Refer to the latest edition of the National Electric Code or in Canada the Canadian electrical Code and local codes to determine correct wire sizing.

5.2 Outdoor Units

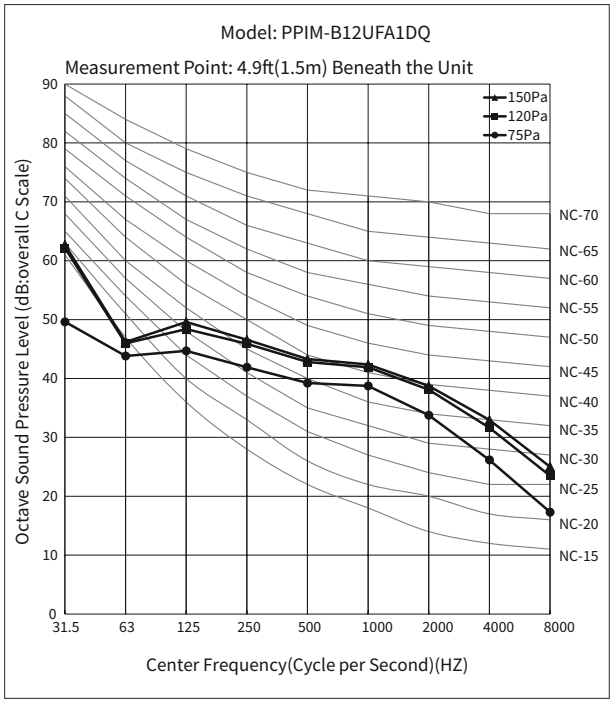
Model	Unit Main Power			Application Voltage(V)		MCA(A)	MOP(A)	MAX Current(A)	Max Power Input(kW)
	VOL	PH	HZ	Maximum	Minimum				
PAS-12BLFASDQ1	AC 208/230V	1	60	253	187	13.9	20	13.5	3.12
PAS-18BLFASDQ1						14.3	20	16.0	3.68
PAS-24BLFASDQ1						15.7	25	24.2	5.56
PAS-30BLFASDQ1						18.5	30	27.9	6.43
PAS-36BLFASDQ1						22.2	35	29.1	6.69

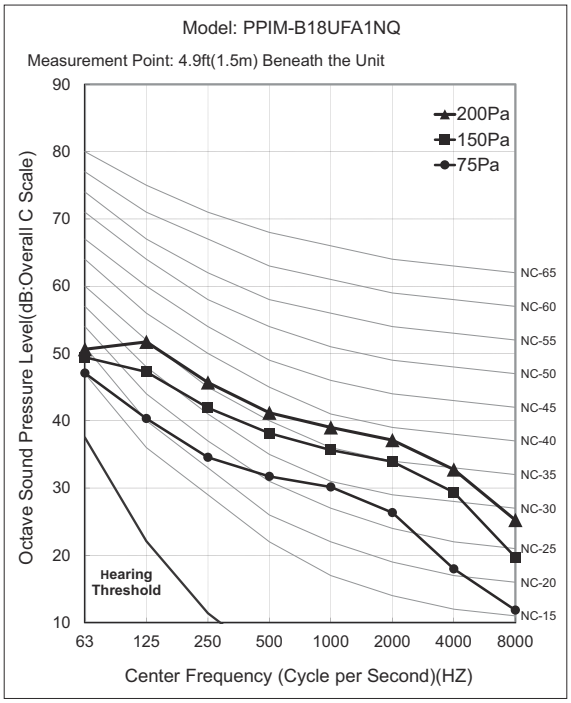
VOL: Rated Unit Power Supply Voltage (Plated)(V)
PH: Phase (ϕ)
HZ: Frequency (Hz)
MCA: Minimum Circuit Ampacity (A)
MOP: Maximum Overcurrent Protection (A)

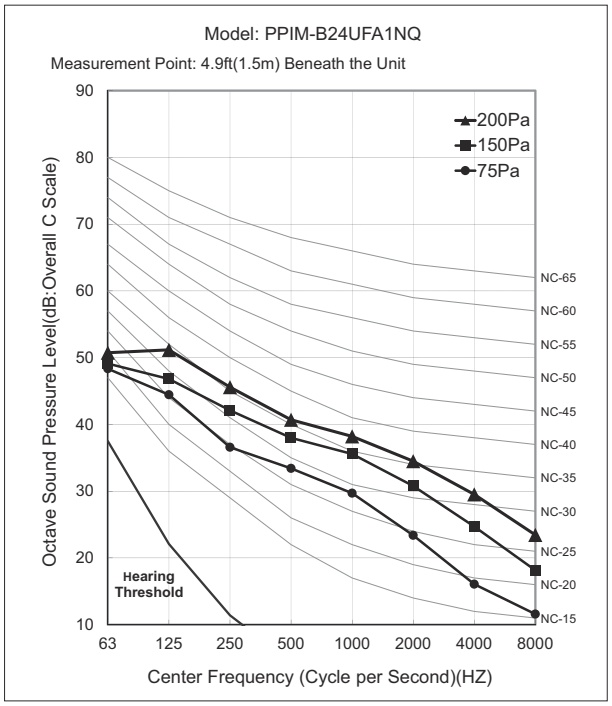
6. Sound Data

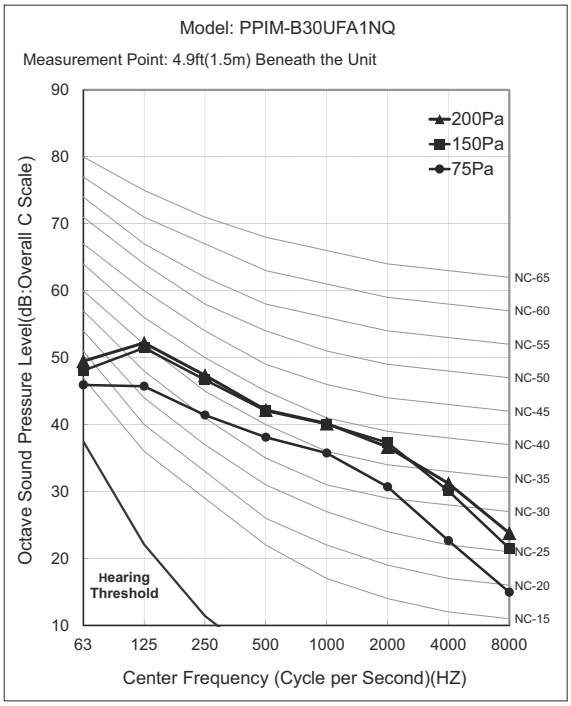
6.1 Indoor Units

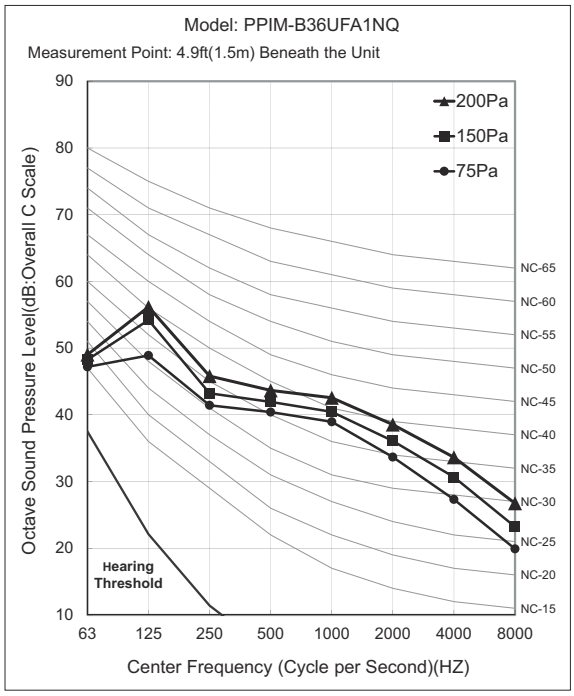
< MESP Ducted Type >







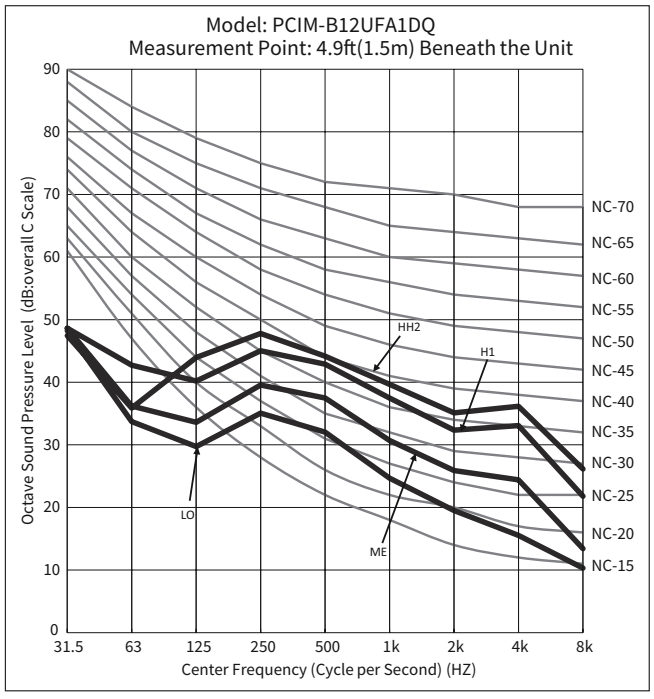




NOTES:

- Operation sound is equivalent to a semi-anechoic chamber.
- Noise level shall be increased by the surrounding noise and echoes.

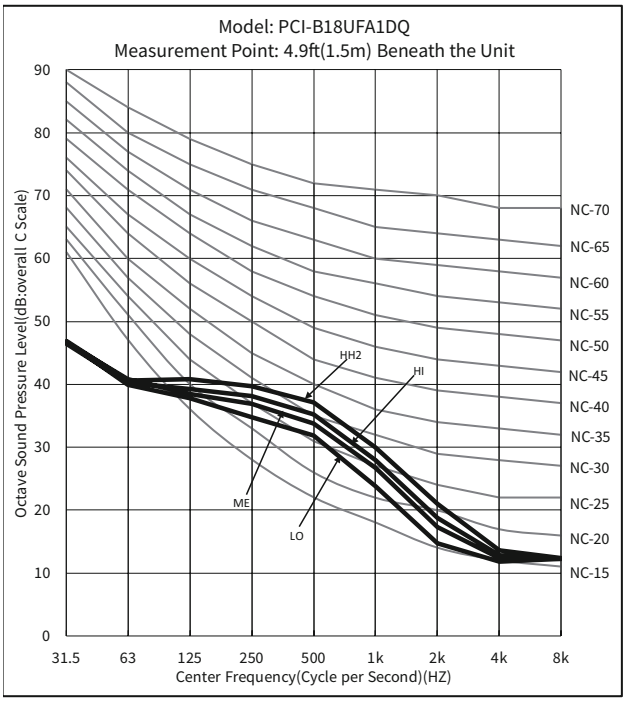
< 4-Way Mini Cassette Type >

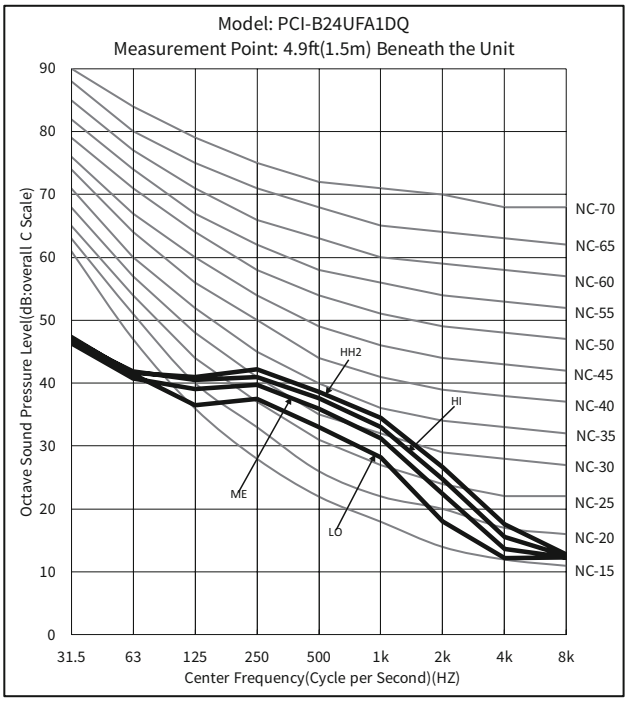


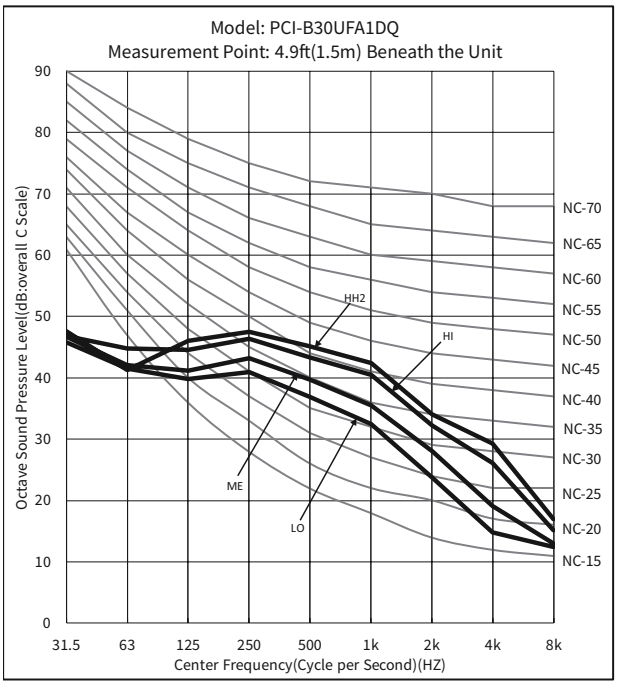
NOTES:

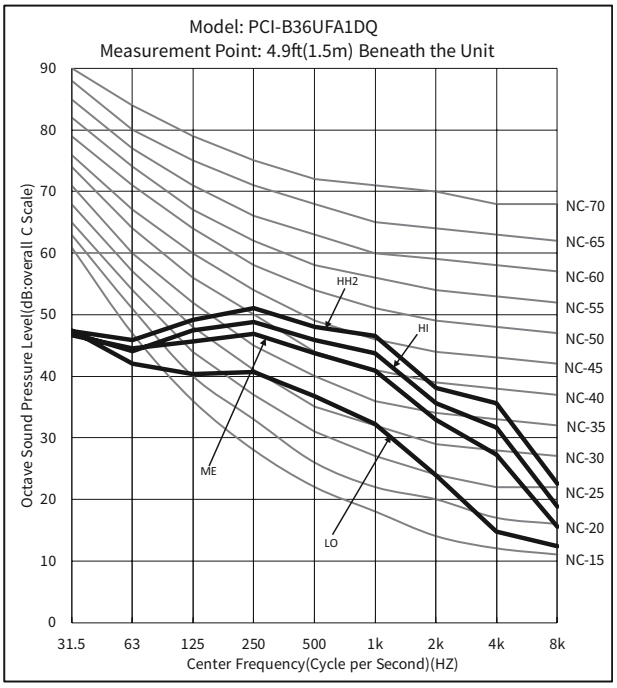
- Operation sound is equivalent to a semi-anechoic chamber.
- Noise level shall be increased by the surrounding noise and echoes.

< 4-Way Cassette Type >





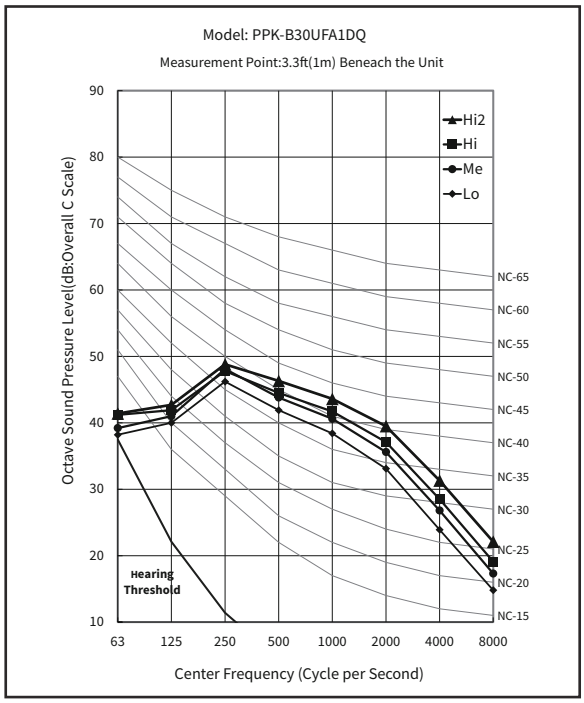




NOTES:

- Operation sound is equivalent to a semi-anechoic chamber.
- Noise level shall be increased by the surrounding noise and echoes.

< High-wall Type >



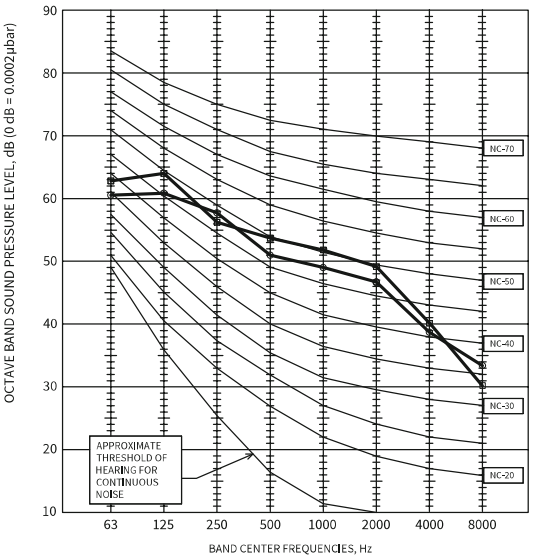
NOTES:

- Operation sound is equivalent to a semi-anechoic chamber.
- Noise level shall be increased by the surrounding noise and echoes.

6.2 Outdoor Units

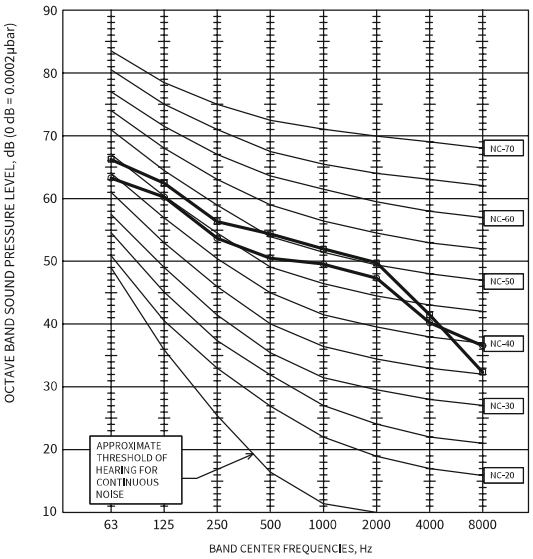
PAS-12BLFASDQ1

NOTCH	SPL(dB)	LINE
Cooling	52.3	
Heating	54.9	



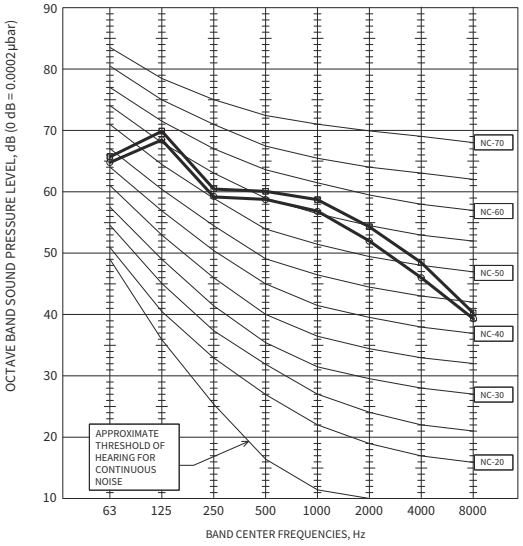
PAS-18BLFASDQ1

NOTCH	SPL(dB)	LINE
Cooling	51.9	
Heating	54.2	



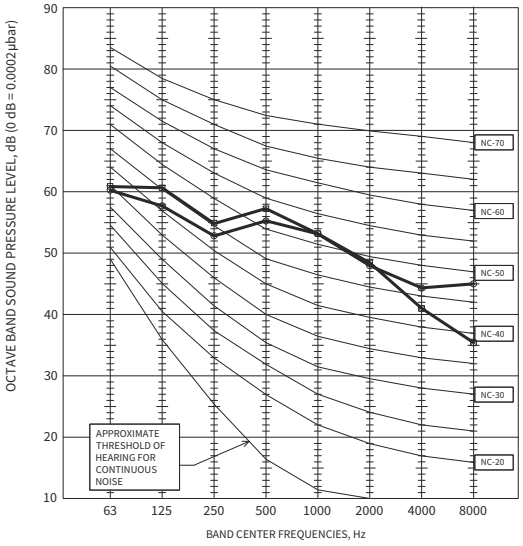
PAS-24BLFASDQ1

NOTCH	SPL(dB)	LINE
Cooling	55.1	
Heating	56.2	



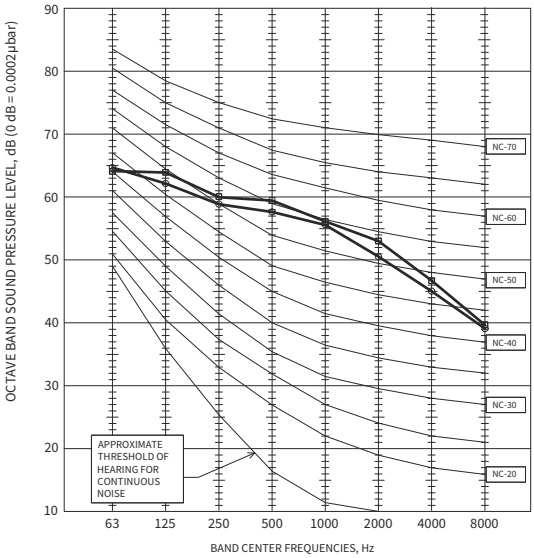
PAS-30BLFASDQ1

NOTCH	SPL(dB)	LINE
Cooling	55.3	
Heating	55.9	



PAS-36BLFASDQ1

NOTCH	SPL(dB)	LINE
Cooling	57.2	
Heating	58.8	



7. Working Range

Power Supply: 208/230V~, 60Hz
Working Voltage: 90% to 110% of the Rated Voltage
Voltage Imbalance: Within a 3% Deviation from Each Voltage at the Main Terminal
Starting Voltage: Higher than 85% of the Rated Voltage

Temperature Range
The temperature range are given in the following table.

[°F(°C)]

Operation Temperature Range		Maximum	Minimum
Cooling Operation	Indoor	89.6(32) DB/73.4(23) WB	69.8(21) DB/59(15) WB
	Outdoor	115(46) DB	0(-18) DB
Heating Operation	Indoor	80.6(27) DB	68.0(20) DB
	Outdoor	75(24) DB	-13(-25) DB

DB: Dry Bulb, WB: Wet Bulb

8. Optional Accessories

8.1 For Control Systems

HITACHI provides the optional accessories for indoor units.

Accessory	Model
Wired Remote Controller	CIW03-H
Wireless Remote Controller	PC-LH8QE
airCloud Adapter	GA-WFG-N
IR Receiver Kit	PC-ALH5Q
	PC-ALHC5Q
	PC-ALHZ5Q
Central Station	CCM01
	CCL01
Central Station EX	CCXL02
Remote Control Cable	PRC-5K
	PRC-10K
	PRC-15K

8.1.1 Wired Remote Controller: CIW03-H
Refer to chapter 1.5.1 for details.

8.1.2 Wireless Remote Controller: PC-LH8QE
Refer to chapter 1.5.2 for details.

8.1.3 airCloud Adapter: GA-WFG-N
Refer to chapter 1.5.3 for details.

8.1.4 IR Receiver Kit: PC-ALH5Q
Refer to chapter 1.5.4 for details.

8.1.5 IR Receiver Kit: PC-ALHC5Q
Refer to chapter 1.5.5 for details.

8.1.6 IR Receiver Kit: PC-ALHZ5Q
Refer to chapter 1.5.6 for details.

8.1.7 Central Station: CCM01
Refer to chapter 1.5.7 for details.

8.1.8 Central Station: CCL01
Refer to chapter 1.5.8 for details.

8.1.9 Central Station EX: CCXL02
Refer to chapter 1.5.9 for details.

8.1.10 Remote Control Cable: PRC-5K, PRC-10K, PRC-15K
Refer to chapter 1.5.10 for details.

8.2 For Indoor Units

HITACHI provides the optional accessories for indoor unit type.

Optional Accessories		Indoor Unit Model				
		PPIM-B**UFA1DQ	PCIM-B**UFA1DQ	PCI-B**UFA1DQ	PPK-B**UFA1DQ	JPE *******HS1A
Air Panel(Standard)	PHKF160PAQ1	×	×	○	×	×
Air Panel(Standard)	PHKM50PAQ1	×	○	×	×	×
Air Panel(with motion sensor and radiation sensor)	P-AP160NAE1	×	×	○	×	×
Silent-Iconic Panel(White)	P-GP160NAP*US	×	×	○	×	×
airCloud Adapter	GA-WFG-N	○	○	○	○	×
IR Receiver Kit	PC-ALH5Q	×	×	○	×	×
	PC-ALHC5Q	×	○	×	×	×
	PC-ALHZ5Q	○	×	×	×	×
Motion Sensor Kit	SOR-NEZ*US	○	○	×	○	×
Air Filter(for ducted type)	KW-PP7Q#E KW-PP9Q#E KW-PP10Q#E	○	×	×	×	×
Filter Rack for MERV13	FB-12PIE FB-30PIE FB-48PIE	○	×	×	×	×
Remote Sensor	THM-R2A	○	○	○	○	×
Electric heaters	8HK	×	×	×	×	○
Breaker moisture seal accessory	S1-02435672000	×	×	×	×	○
Filter rack	1BR01117 1BR01121 1BR01124	×	×	×	×	○

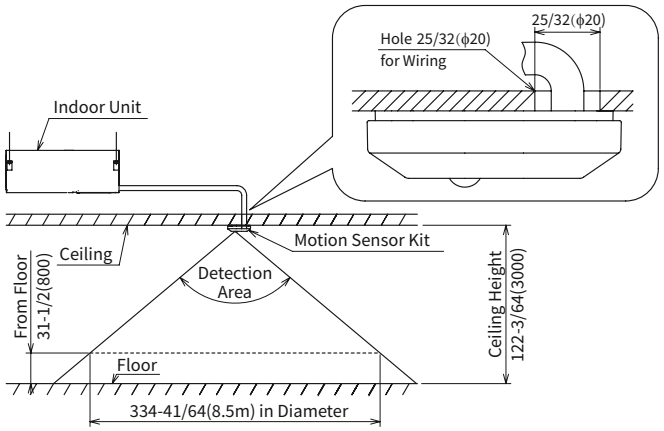
○: Available ×: Not Available

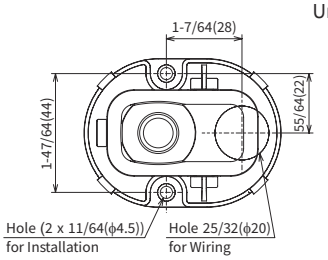
8.2.1 For MESP Ducted Type

8.2.1.1 Motion Sensor Kit: SOR-NEZ*US

Install the motion sensor kit in the center of the room as much as possible. When the motion sensor is installed after the indoor unit's installation, be sure to turn off the power supply completely before starting installation.

Unit: in.(mm)





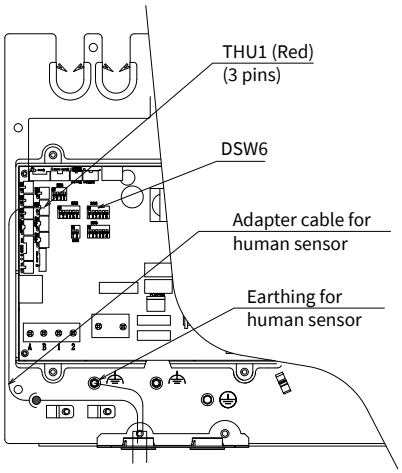
<Specification>

Model		SOR-NEZ*US
Applied Indoor Unit Model	-	PPIM-B12~B36UFA1DQ
Material	-	PS
Size(H×W×D)	in.(mm)	45/64 × 3-5/64 × 2-23/64(17.7×78×60)
Cord Length	in.(mm)	3-35/64(90)

<Electrical Wiring>

For PPIM-B12~B36UFA1DQ indoor unit, connecting cable to THU1 of PCB in the electrical box. (*1)

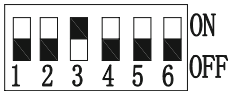
Fix the earth wiring to screw for earth wiring connection as the following figure.



(*1) Use a 5pin to 3pin conversion cable to connect THU1 of PCB.

<DSW Setting for Indoor Unit>

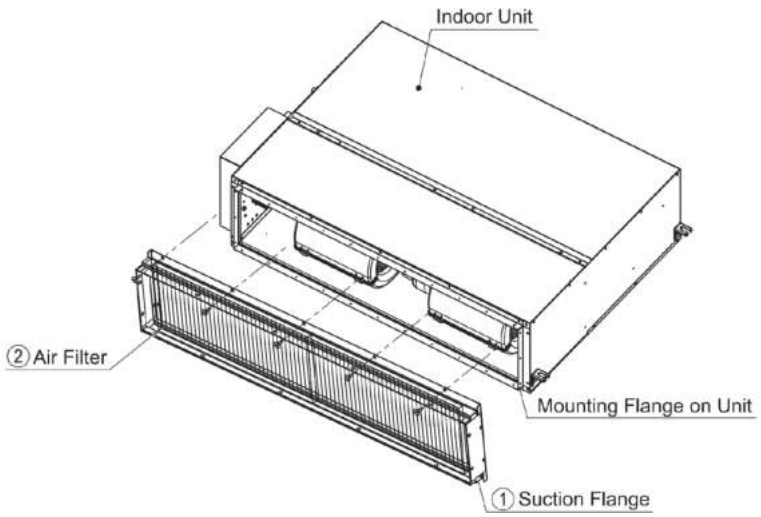
Setting the DSW6 on the indoor unit PCB. (*1)



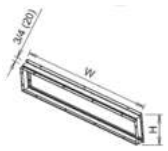
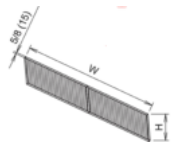
(*1): DSW6 all be set to OFF in the factory. Setting the No.3 digit to ON when installing the Motion Sensor Kit: SOR-NEZ*US in PPIM-B12~B36UFA1DQ indoor unit.

8.2.1.2 Air Filter: KW-PP7Q#E/KW-PP8Q#E/KW-PP9Q#E/KW-PP10Q#E

<Installation Position>



<Specification>

Model			KW-PP7Q#E	KW-PP9Q#E	KW-PP10Q#E
Applied Indoor Unit Model		-	PPIM-B12UFA1DQ	PPIM-B18~B30UFA1DQ	PPIM-B36UFA1DQ
Suction Flange 	W*H	in.(mm)	[25-7/16] × [10-7/16] (646 × 265)	[43-17/64] × [11-21/32] (1099 ×296)	[55-5/64] ×[11-21/32] (1399 × 296)
Air Filter 	W*H	in.(mm)	[24-1/64] × [9-17/32] (610 × 242)	[41-27/32] × [10-45/64] 1063 × 272	[53-5/8] × [10-45/64] 1362 × 272

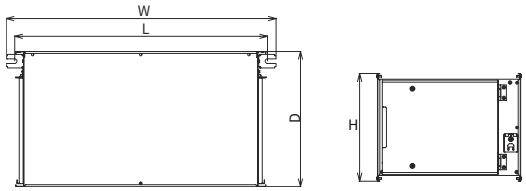
8.2.1.3 airCloud Adapter: GA-WFG-N

Refer to chapter 1.5.3 for details.

8.2.1.4 IR Receiver Kit: PC-ALHZ5Q

Refer to chapter 1.5.6 for details.

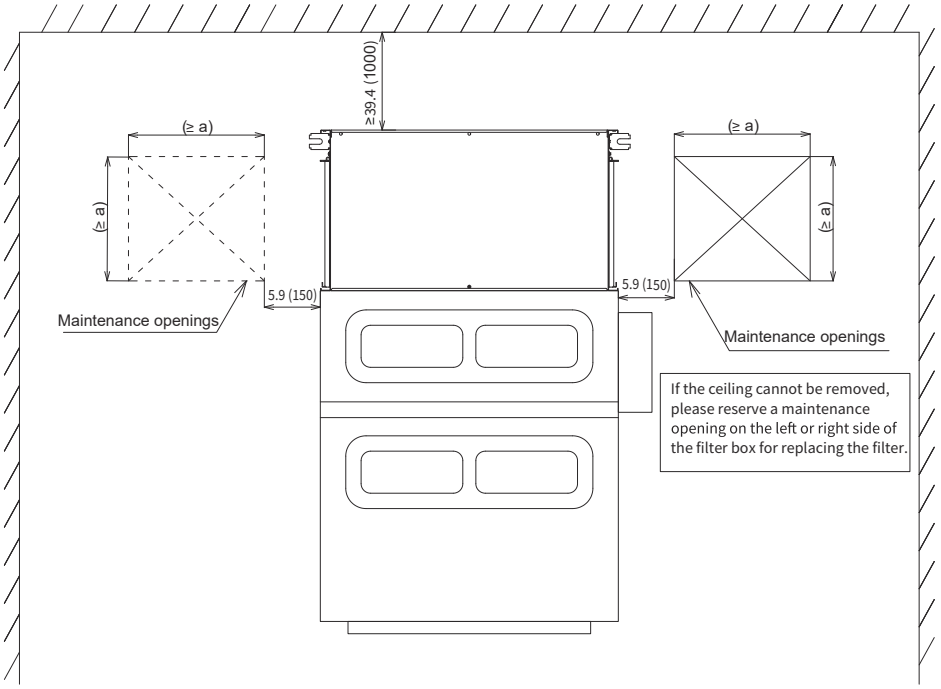
8.2.1.5 Filter Rack for MERV13: FB-12PIE/FB-30PIE/FB-48PIE



Filter Box Dimension

[unit:inch(mm)]

Filter Box Model	Indoor Unit Model	Filter Box Dimension				Filter Dimension (Recommended)	Filter Q'ty
		H	W	D	L		
FB-12PIE	PPIM-B12UFA1DQ	10.4 (265)	27.6 (700)	13.8 (350)	25.8 (655)	12x12x2 (304.8x304.8x50.8)	2
FB-30PIE	PPIM-B18UFA1DQ PPIM-B24UFA1DQ PPIM-B30UFA1DQ	11.6 (295)	45.3 (1150)	13.8 (350)	43.7 (1110)	12x20x2 (304.8x508x50.8)	2
FB-48PIE	PPIM-B36UFA1DQ	11.6 (295)	57.0 (1450)	13.8 (350)	55.5 (1410)	12x26.5x2 (304.8x673.1x50.8)	2



Model	Dimension a（inch/mm)
FB-12PIE	15.7/400
FB-30PIE	23.6/600
FB-48PIE	31.5/800

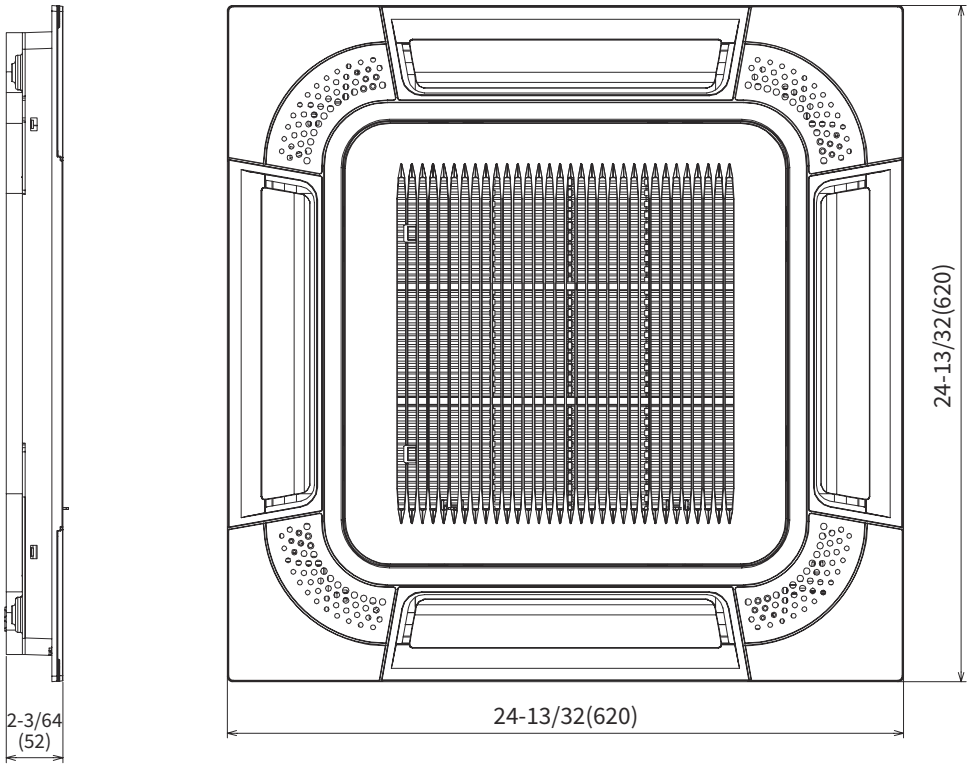
NOTES:

1. The current filter box is based on a structural design with a filter thickness of 2 inches. Filters of other thicknesses cannot be used.
2. Currently, the highest recommended filter level for airCore 700 series is MERV-13. The use of other, more efficient filters will affect reliability and comfort, so field installation of higher efficiency filters is not recommended.
3. After installing the filter, the air volume will decrease, so the external static pressure code should be selected from "C5=00", "C5=01" and "C5=02" according to the actual needs of the customer.

8.2.2 For 4-Way Mini Cassette Type

8.2.2.1 Air Panel (Standard): PHKM50PAQ1

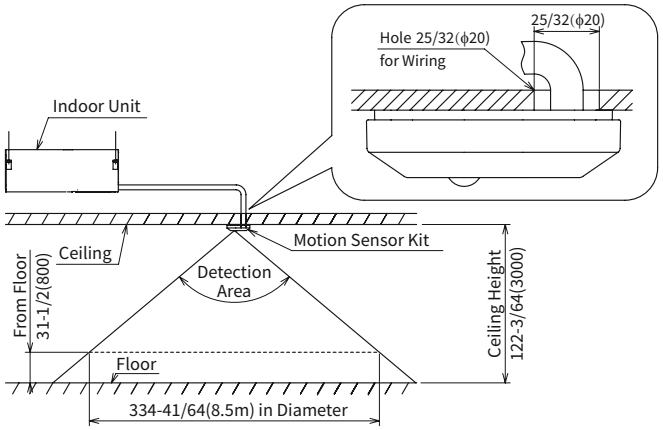
Unit: in.(mm)

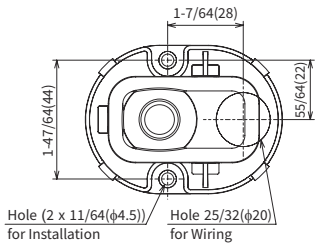


8.2.2.2 Motion Sensor Kit: SOR-NEZ*US

Install the motion sensor kit in the center of the room as much as possible. When the motion sensor is installed after the indoor unit's installation, be sure to turn off the power supply completely before starting installation.

Unit: in.(mm)





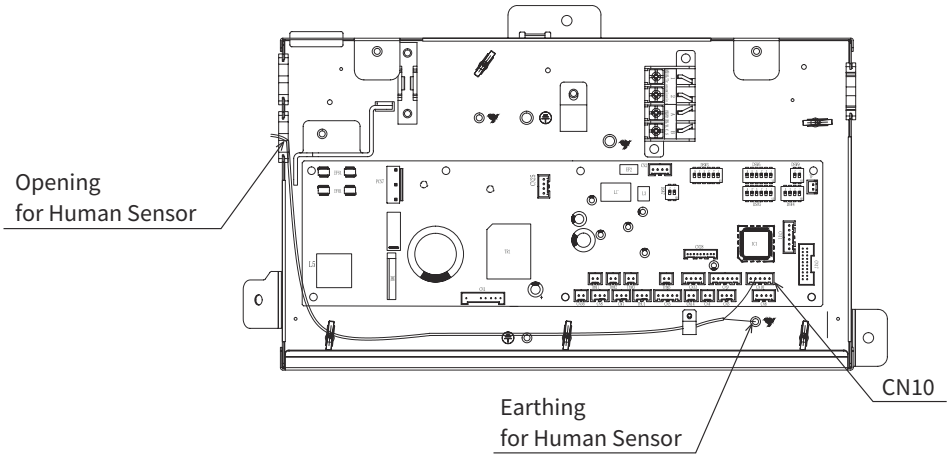
<Specification>

Model		SOR-NEZ*US
Applied Indoor Unit Model	-	PCIM-B12UFA1DQ
Material	-	PS
Size(H×W×D)	in.(mm)	45/64 × 3-5/64 × 2-23/64(17.7×78×60)
Cord Length	in.(mm)	3-35/64(90)

<Electrical Wiring>

For PCIM-B12UFA1DQ indoor unit, connecting cable to CN10 of PCB in the electrical box.

Fix the earth wiring to screw for earth wiring connection as the following figure.



8.2.2.3 airCloud Adapter: GA-WFG-N

Refer to chapter 1.5.3 for details.

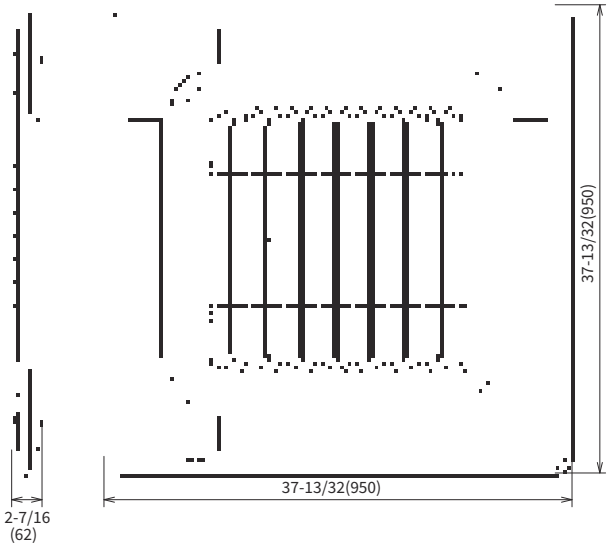
8.2.2.4 IR Receiver Kit: PC-ALHC5Q

Refer to chapter 1.5.5 for details.

8.2.3 For 4-Way Cassette Type

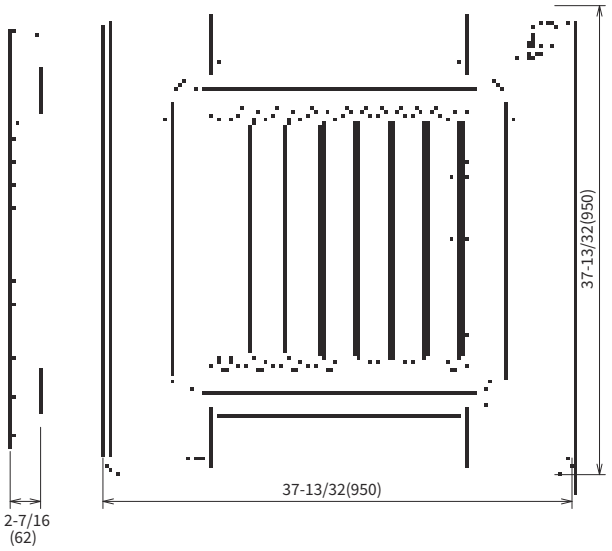
8.2.3.1 Air Panel (Standard): PHKF160PAQ1

Unit: in.(mm)



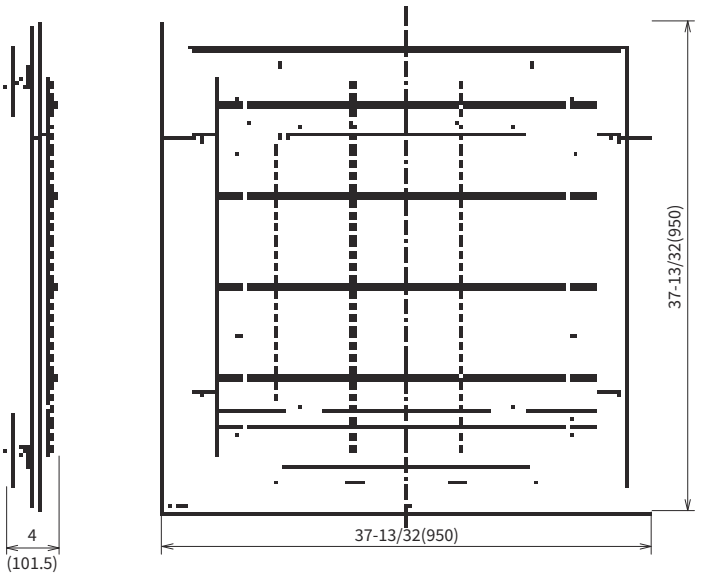
8.2.3.2 Air Panel (with motion sensor and radiation sensor): P-AP160NAE1

Unit: in.(mm)



8.2.3.3 Silent-Iconic Panel(White): P-GP160NAP*US

Unit: in.(mm)



8.2.3.4 airCloud Adapter: GA-WFG-N

Refer to chapter 1.5.3 for details.

8.2.3.5 IR Receiver Kit: PC-ALH5Q

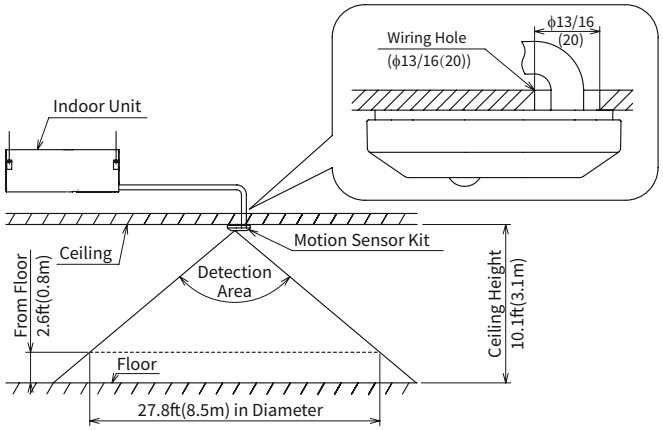
Refer to chapter 1.5.4 for details.

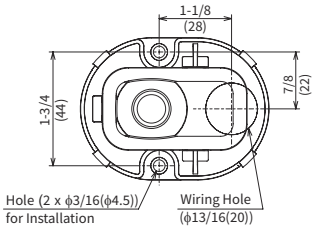
8.2.4 For High-wall Type

8.2.4.1 Motion Sensor Kit: SOR-NEZ*US

Install the motion sensor kit in the center of the room as much as possible. when the motion sensor is installed after the indoor unit's installation, be sure to turn off the power supply completely before starting installation.

Unit:in.(mm)





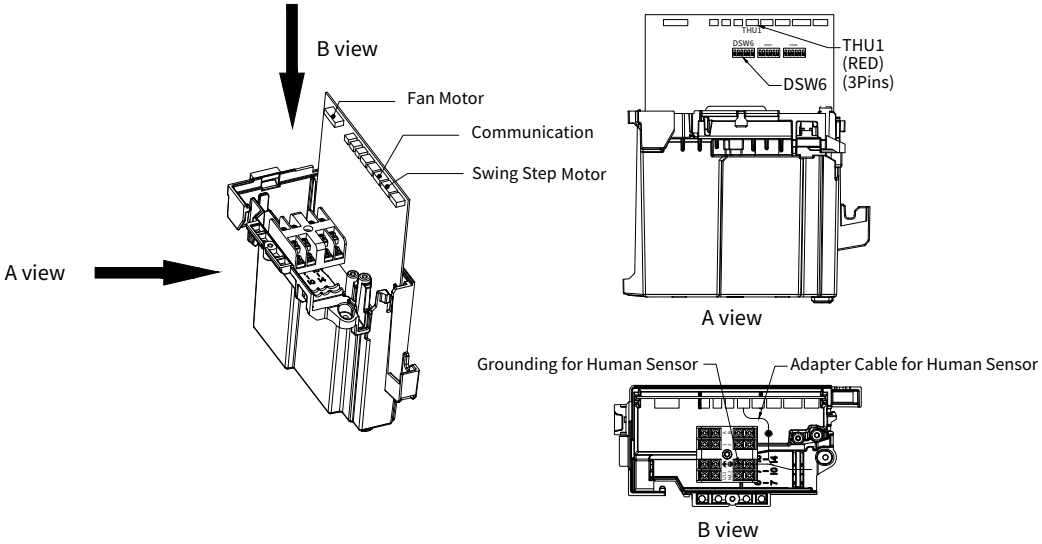
<Specification>

Model		SOR-NEZ*US
Applied Indoor Unit Model	-	PPK-B30UFA1DQ
Material	-	PS
Size(H*W*D)	in.(mm)	45/64 × 3-5/64 × 2-23/64(17.7×78×60)
Cord Length	in.(mm)	3-35/64(90)

<Electrical Wiring>

For PPK-B30UFA1DQ indoor unit, connecting cable to THU1 of PCB in the electrical box. (*1)

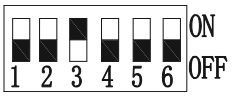
Fix the earth wiring to screw for earth wiring connection as the following figure.



(*1) Use a 5pin to 3pin conversion cable to connect THU1 of PCB.

<DSW Setting for Indoor Unit>

Setting the DSW6 on the indoor unit PCB. (*2)



(*2): DSW6 all be set to OFF in the factory. Setting the No.3 digit to ON when installing the Motion Sensor Kit: SOR-NEZ*US in PPK-B30UFA1DQ indoor unit.

8.2.4.2 airCloud Adapter: GA-WFG-N

Refer to chapter 1.5.3 for details.

8.2.5 For Air Handlers Type

8.2.5.1 Electric heaters

8HK models shown under electrical data include sequential operation and temperature dual limit switches for safe, efficient operation. Service disconnects are provided where shown.

For details, please refer to Installation & Maintenance Manual of the Air Handlers type.

Scan the QR code to get the manual.

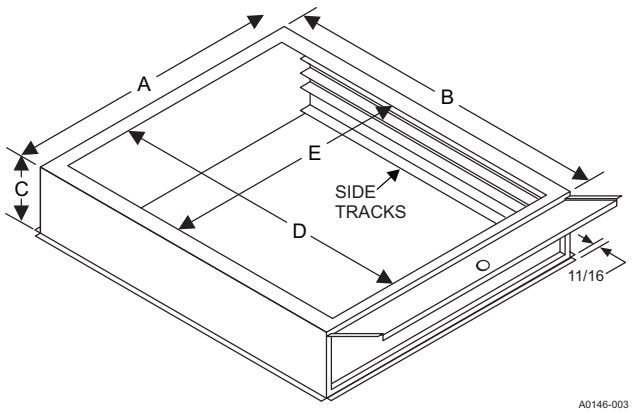
8.2.5.2 Breaker moisture seal accessory

A clear circuit breaker moisture barrier seals the breakers from humidity and dust. The flexibility of the clear cover allows circuit breakers to be turned ON or OFF without removing the cover.

The cover firmly attaches to the access panel around the circuit breakers with the use of double backed adhesive tape. To ensure that moisture or dust does not contaminate circuit breakers, an S1-02435672000, circuit breaker, cover seal may be ordered.

8.2.5.3 Filter rack

Filtration must be installed external to the unit using an accessory filter rack kit. See the filter rack dimensions below.



Unit: inch.

Galvanised model	A	B	C	D	E	Filter size
1BR01117	17.5	21.56	4	18.63	14.25	16 x 20 x 1 or 2
1BR01121	21	21.56	4	18.63	17.75	20 x 20 x 1 or 2
1BR01124	24.5	21.56	4	18.63	21.25	20 x 24 x 1 or 2

NOTE:

- The filter is not supplied.

9. Component Data

9.1 Indoor Heat Exchanger and Fan

< MESP Ducted Type >

Model		PPIM-B12UFA1DQ	PPIM-B18UFA1DQ	PPIM-B24UFA1DQ	PPIM-B30UFA1DQ	PPIM-B36UFA1DQ
Heat Exchanger Type		Multi-Pass Cross Finned Tube				
Tube Material		Copper Tube				
Tube Outer Diameter	in	9/32	9/32	9/32	9/32	9/32
	mm	7	7	7	7	7
Rows		3	3	3	3	3
Number of Tube/Coil		50	50	50	50	50
Fin Material		Aluminum				
Fin Pitch	in	5/64	5/64	5/64	5/64	5/64
	mm	1.8	1.8	1.8	1.8	1.8
Maximum Operating Pressure	Psig	602	602	602	602	602
	MPa	4.15	4.15	4.15	4.15	4.15
Total Face Area	ft^2	76.1	173.3	173.3	173.3	230.4
	m^2	7.07	16.1	16.1	16.1	21.4
Number of Coil/Unit		1	1	1	1	1
Revolution High Pressure Setting2	rpm	1486/1395/1275/ 1210/1025/920	1395/1280/1200/ 1130/1050/965	1425/1340/1235/ 1145/1085/1015	1462/1410/1285/ 1160/1100/1046	1510/1380/1250/ 1141/1025/930
Revolution High Pressure Setting1	rpm	1430/1344/1165/ 1115/950/860	1230/1155/1065/ 995/920/845	1265/1199/1090/ 1000/930/880	1340/1230/1130/ 990/940/900	1375/1255/1155/ 1025/925/845
Standard Pressure Setting	rpm	1230/1130/1000/ 950/820/735	925/865/795/ 740/695/645	965/930/835/ 765/705/680	1070/990/890/ 810/780/730	1110/1012/940/ 860/780/700
Nominal Air Flow High Pressure Setting2	CFM	450/390/350/ 335/280/245	650/590/550/ 510/460/420	780/740/670/ 600/560/530	1060/960/870/ 770/730/690	1270/1140/1040/ 950/830/740
	m^3/h	760/660/600/ 570/470/420	1100/1008/930/ 864/790/720	1330/1260/1140/ 1020/960/900	1800/1638/1476/ 1320/1250/1180	2160/1950/1770/ 1620/1410/1260
Nominal Air Flow High Pressure Setting1	CFM	450/390/350/ 335/280/245	650/590/550/ 510/460/420	780/740/670/ 600/560/530	1060/960/870/ 770/730/690	1270/1140/1040/ 950/830/740
	m^3/h	760/660/600/ 570/470/420	1100/1008/930/ 864/790/720	1330/1260/1140/ 1020/960/900	1800/1638/1476/ 1320/1250/1180	2160/1950/1770/ 1620/1410/1260
Standard Pressure Setting	CFM	450/390/350/ 335/280/245	650/590/550/ 510/460/420	780/740/670/ 600/560/530	1060/960/870/ 770/730/690	1270/1140/1040/ 950/830/740
	m^3/h	760/660/600/ 570/470/420	1100/1008/930/ 864/790/720	1330/1260/1140/ 1020/960/900	1800/1638/1476/ 1320/1250/1180	2160/1950/1770/ 1620/1410/1260
Indoor Fan		Multi-Blade Centrifugal Fan				
Number/Unit		2	2	2	2	2
Outer Diameter	in	7-3/32	7-7/8	7-7/8	7-7/8	7-7/8
	mm	180	200	200	200	200
Indoor Fan Motor		Drip-Proof Type Enclosure				
Starting Method		DC Motor				
Nominal Output	W	150	250	250	250	375
Quantity		1	1	1	1	1
Insulation Class		B	B	B	B	B

< 4-Way Mini Cassette Type & 4-Way Cassette Type >

Model		PCIM-B12UFA1DQ	PCI-B18UFA1DQ	PCI-B24UFA1DQ	PCI-B30UFA1DQ	PCI-B36UFA1DQ
Heat Exchanger Type		Multi-Pass Cross Finned Tube				
Tube Material		Copper Tube				
Tube Outer Diameter	in	13/64	13/64	13/64	13/64	13/64
	mm	5	5	5	5	5
Rows		3	3	3	3	3
Number of Tube/Coil		36	42	54	54	54
Fin Material		Aluminum				
Fin Pitch	in	3/64	3/64	3/64	3/64	3/64
	mm	1.3	1.3	1.3	1.3	1.3
Maximum Operating Pressure	psi	602	602	602	602	602
	MPa	4.15	4.15	4.15	4.15	4.15
Total Face Area	ft^2	25.8	51.8	66.6	66.6	66.6
	m^2	7.88	15.8	20.3	20.3	20.3
Number of Coil/Unit		1	1	1	1	1
Standard	rpm	830/755/ 610/510	450/420/ 400/375	500/470/ 445/410	670/580/ 515/470	710/645/ 590/470
Standard	CFM	425/390/ 305/250	650/600/ 570/530	780/740/ 700/630	1060/940/ 820/740	1170/1060/ 950/740
	m^3/h	720/660/ 520/420	1100/1030/ 970/900	1330/1260/ 1190/1080	1800/1600/ 1400/1260	1990/1800/ 1620/1260
Indoor Fan		Turbofan				
Number/Unit		1	1	1	1	1
Outer Diameter	in	12-43/64	19-19/64	19-19/64	19-19/64	19-19/64
	mm	322	490	490	490	490
Indoor Fan Motor		Drip-Proof Type Enclosure				
Starting Method		DC Motor				
Nominal Output	W	57	60	127	127	127
Quantity		1	1	1	1	1
Insulation Class		E	E	E	E	E

< High-wall Type >

Model		PPK-B30UFA1DQ
Heat Exchanger Type		Multi-Pass Cross Finned Tube
Tube Material		Copper Tube
Tube Outer Diameter	in	9/32
	mm	7
Rows		3
Number of Tube/Coil		60
Fin Material		Aluminum
Fin Pitch	in	1/16
	mm	1.6
Maximum Operating Pressure	psi	601.92
	MPa	4.15
Total Face Area	ft^2	220.01
	m^2	20.44
Number of Coil/Unit		1
Standard	rpm	1020/964/908/851
Standard	CFM	980/910/845/770
	m^3/h	1662/1544/1435/1309
Indoor Fan		Multi-Blade Centrifugal Fan
Number/Unit		4
Outer Diameter	in	6-3/8
	mm	162
Indoor Fan Motor		Drip-Proof Type Enclosure
Starting Method		DC Motor
Nominal Output	W	52
Quantity		1
Insulation Class		E

< Air Handlers Type >

Coil technical data

Model	Application	Refrigerant connection type	Face area (sq. ft.)	Rows deep	Fins per in.	Coil size (in.)	Tube geometry (in.)	Tube diameter (in.)	Fin type
JPE18B3XB2HS1A	Cooling /Heat Pump	Sweat/ Zoomlock	3.8	2	18	(2) 16 x 17	1 x 0.675	3/8	Lanced
JPE24B3XC2HS1A	Cooling /Heat Pump	Sweat/ Zoomlock	4.7	2	18	(2) 20 x 17	1 x 0.675	3/8	Lanced
JPE36B3XD2HS1A	Cooling /Heat Pump	Sweat/ Zoomlock	4.7	3	14	(2) 20 x 17	1 x 0.675	3/8	Lanced

Physical and electrical data

Model		JPE18B3XB2HS1A	JPE24B3XC2HS1A	JPE36B3XD2HS1A
Blower - Diameter x Width (in.)		11 x 8	11 x 8	11 x 8
Motor	HP	1/3 HP	1/3 HP	1/2 HP
	Nominal RPM	1050	1050	1050
Voltage (V)		208/230	208/230	208/230
Full Load Amps @230V		2.6	2.6	3.8
Filter	Type	DISPOSABLE OR CLEANABLE		
	Size (in.)	16 x 20 x 1	16 x 20 x 1	20 x 20 x 1
Shipping / Operating Weight (lbs.)		101/93	107/99	108/100

9.2 Outdoor Heat Exchanger and Fan

Model		PAS-12BLFASDQ1	PAS-18BLFASDQ1	PAS-24BLFASDQ1	PAS-30BLFASDQ1	PAS-36BLFASDQ1
Heat Exchanger Type		Multi-Pass Cross Finned Tube				
Tube Material		Copper Tube				
Tube Outer Diameter	in	9/32	9/32	9/32	9/32	9/32
	mm	7	7	7	7	7
Rows		2	2	3	3	3
Number of Tube/Coil		64	64	144	144	201
Fin Material		Aluminum				
Fin Pitch	in	1/16	1/16	1/16	1/16	1/16
	mm	1.4	1.4	1.4	1.4	1.4
Maximum Operating Pressure	Psig	602	602	602	602	602
	MPa	4.15	4.15	4.15	4.15	4.15
Number of Coil/Unit		1	1	1	1	1
Outdoor Fan		Direct Drive Propeller Fan				
Outdoor Fan Number		1	1	1	1	2
Outdoor Fan Outer Diameter	in	19-3/8	19-3/8	21-27/64	21-27/64	21-27/64
	mm	492	492	544	544	544
Nominal Air Flow	CFM	1935	1935	2823	2823	4823
	m^3/h	3290	3290	4800	4800	8200
Nominal Output	W	80	80	138	138	138+138
Insulation Class		E	E	E	E	E

Component Detailed Data

Compressor

Compressor Model		KTN150D42UFZD	KTM240D43UKT	ATH356SKRC9EQ
Applicable Model		PAS-12BLFASDQ1	PAS-18BLFASDQ1	PAS-24~36BLFASDQ1
Type		Rotary		
Air Tight Pressure Discharge	Psig	602	602	602
	MPa	4.15	4.15	4.15
Suction	Psig	321	321	321
	MPa	2.21	2.21	2.21
Motor Type Starting Method		Inverter-Driven		
Motor Poles		6	6	8
Insulation		E	E	B
Oil Type		ESTER OIL VG74	ESTER OIL VG74	RmM68EA

10. Control System

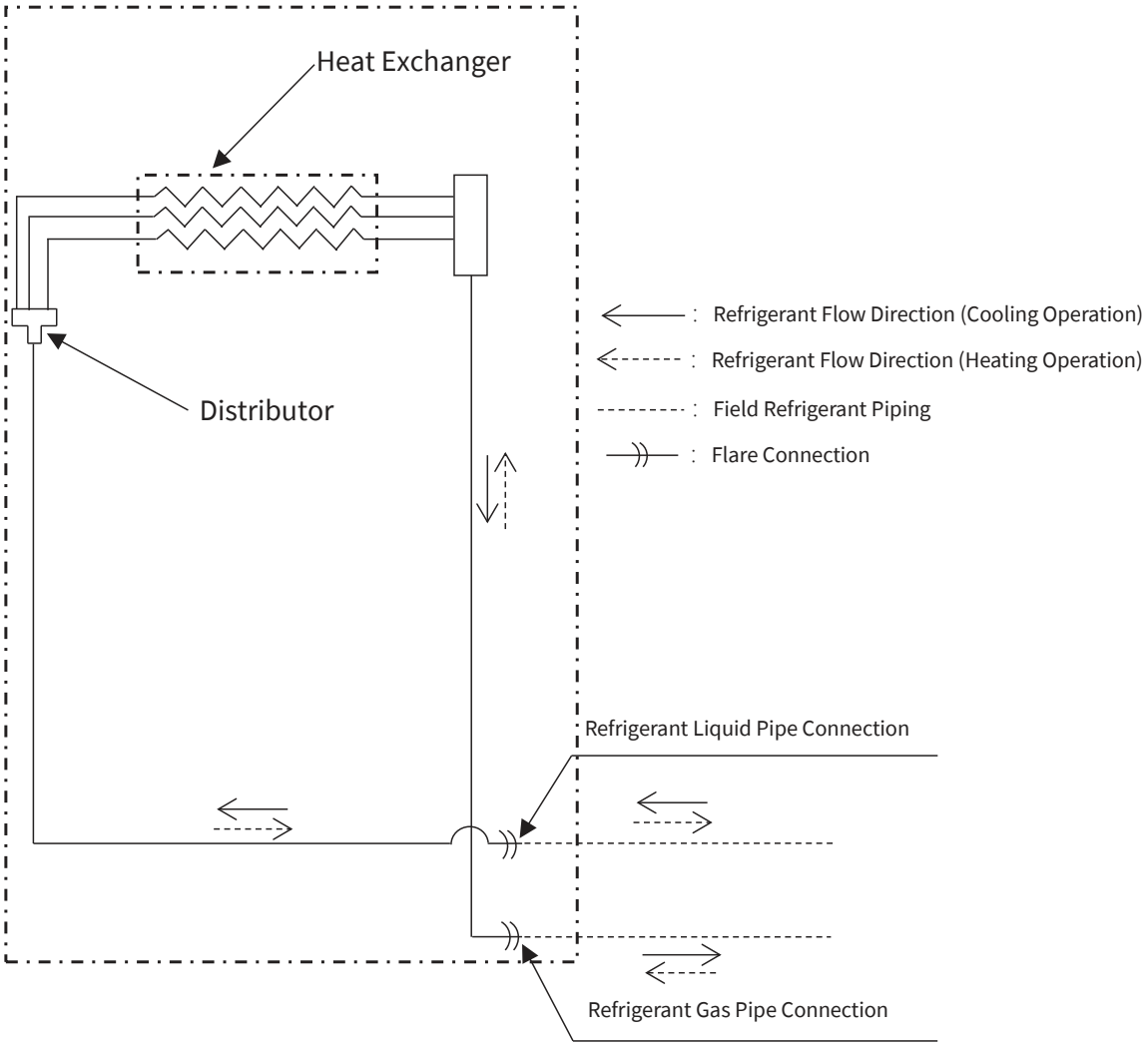
10.1 Refrigeration Cycle

10.1.1 Indoor Units

<MESP Ducted Type >

Models: PPIM-B12~B36UFA1DQ

INDOOR UNIT

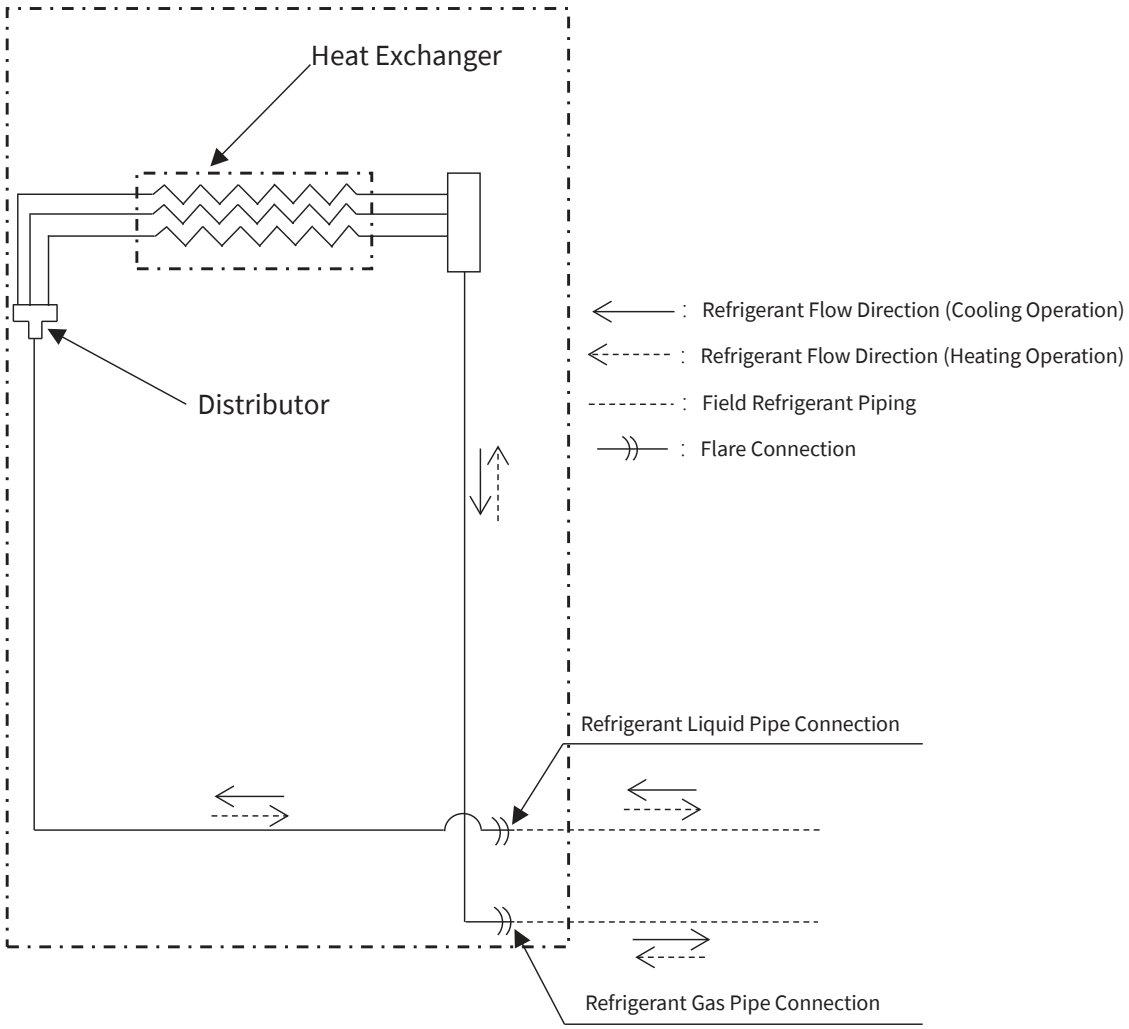


Model	PPIM-B12UFA1DQ	PPIM-B18UFA1DQ PPIM-B24UFA1DQ	PPIM-B30UFA1DQ PPIM-B36UFA1DQ
Distributor	4Pass	8Pass	8Pass
Liquid Pipe Connection [in.(mm)]	1/4(Ø6.35)	1/4(Ø6.35)	3/8(Ø9.53)
Gas Pipe Connection [in.(mm)]	1/2(Ø12.7)	1/2(Ø12.7)	5/8(Ø15.88)

< 4-Way Mini Cassette Type/4-Way Cassette Type >

Models: PCIM-B12UFA1DQ/PCI-B18~B36UFA1DQ

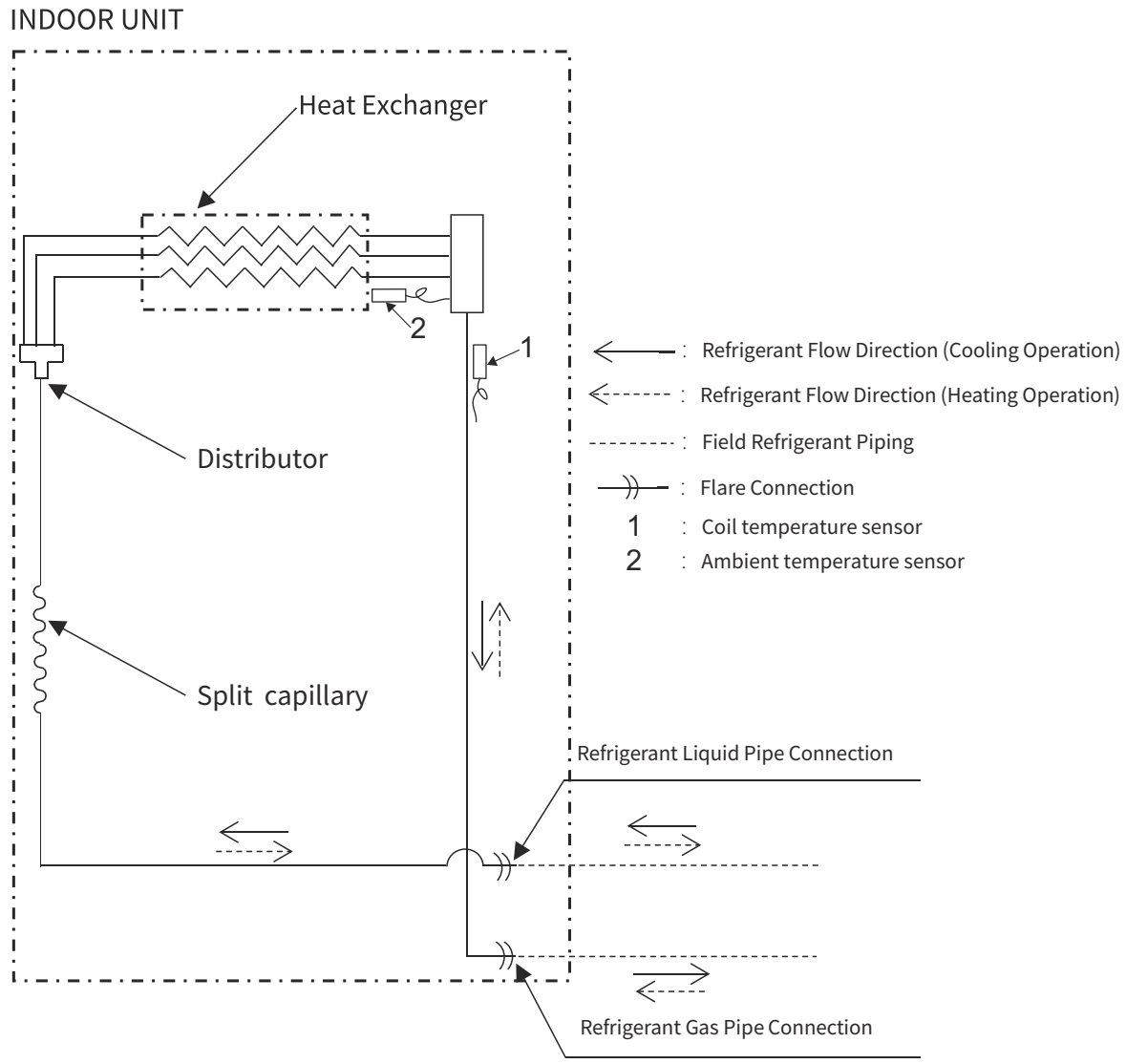
INDOOR UNIT



Model	PCIM-B12UFA1DQ	PCI-B18UFA1DQ	PCI-B24UFA1DQ	PCI-B30UFA1DQ PCI-B36UFA1DQ
Distributor	4Pass	7Pass	9Pass	9Pass
Liquid Pipe Connection [in.(mm)]	1/4(Ø6.35)	1/4(Ø6.35)	1/4(Ø6.35)	3/8(Ø9.53)
Gas Pipe Connection [in.(mm)]	1/2(Ø12.7)	1/2(Ø12.7)	1/2(Ø12.7)	5/8(Ø15.88)

< High-wall Type >

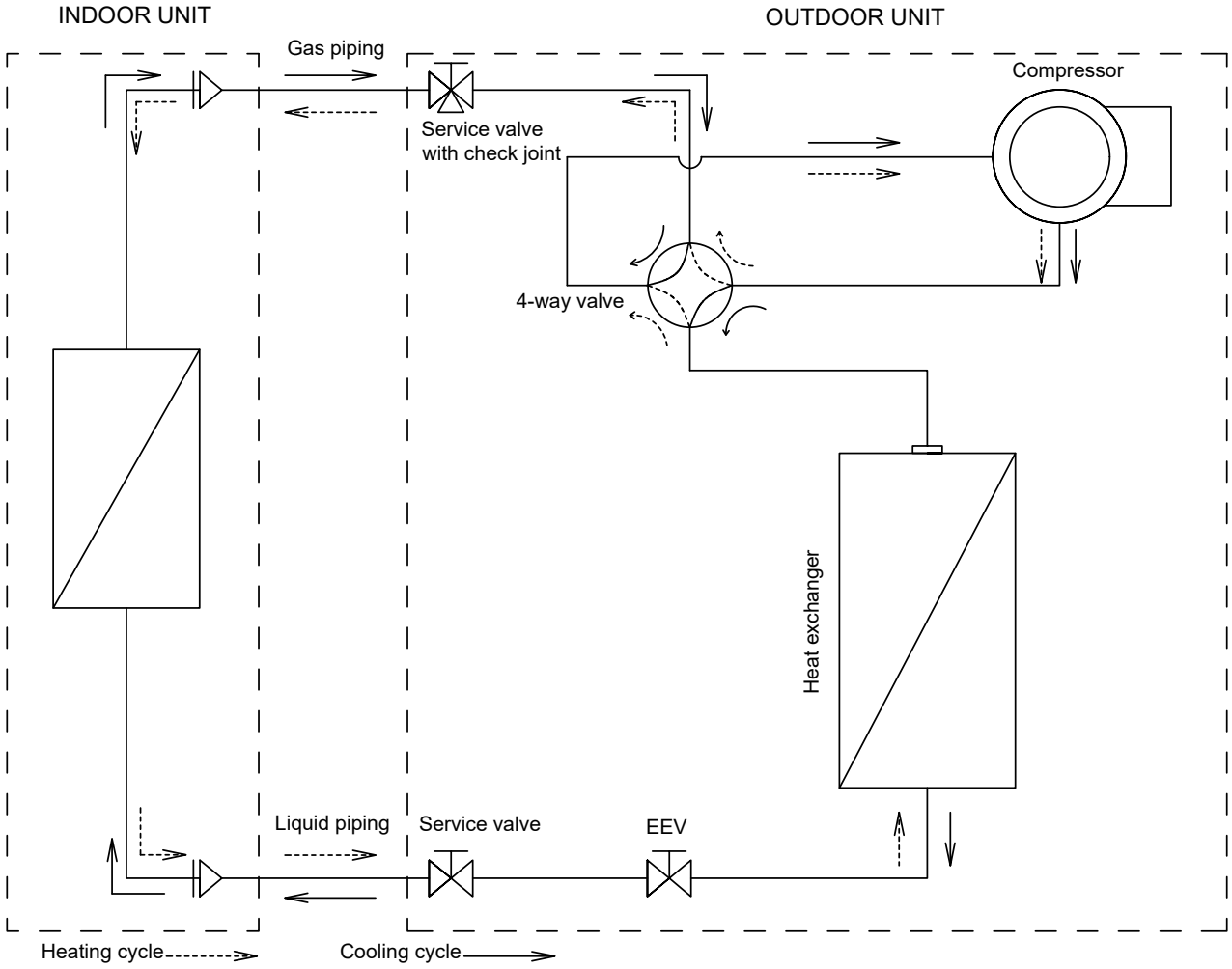
Model: PPK-B30UFA1DQ



Model	PPK-B30UFA1DQ
Distributor	6Pass
Liquid Pipe Connection [in.(mm)]	3/8(Ø9.53)
Gas Pipe Connection [in.(mm)]	5/8(Ø15.88)

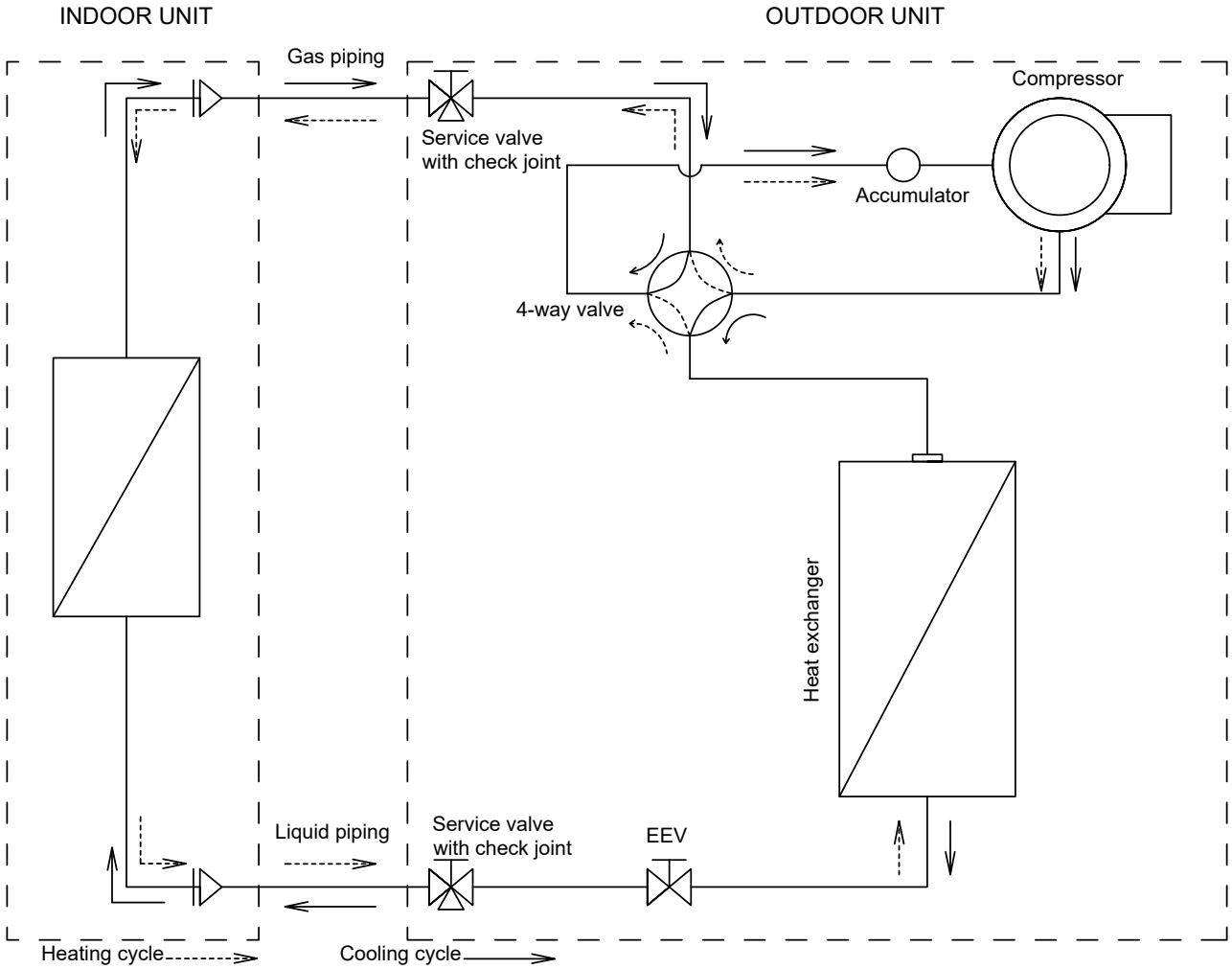
10.1.2 Outdoor Units

Models: PAS-12BLFASDQ1, PAS-18BLFASDQ1



Model	PAS-12BLFASDQ1	PAS-18BLFASDQ1
Liquid Pipe Connection [in.(mm)]	1/4(Φ6.35)	1/4(Φ6.35)
Gas Pipe Connection [in.(mm)]	1/2(Φ12.7)	1/2(Φ12.7)

Models: PAS-24BLFASDQ1, PAS-30BLFASDQ1, PAS-36BLFASDQ1

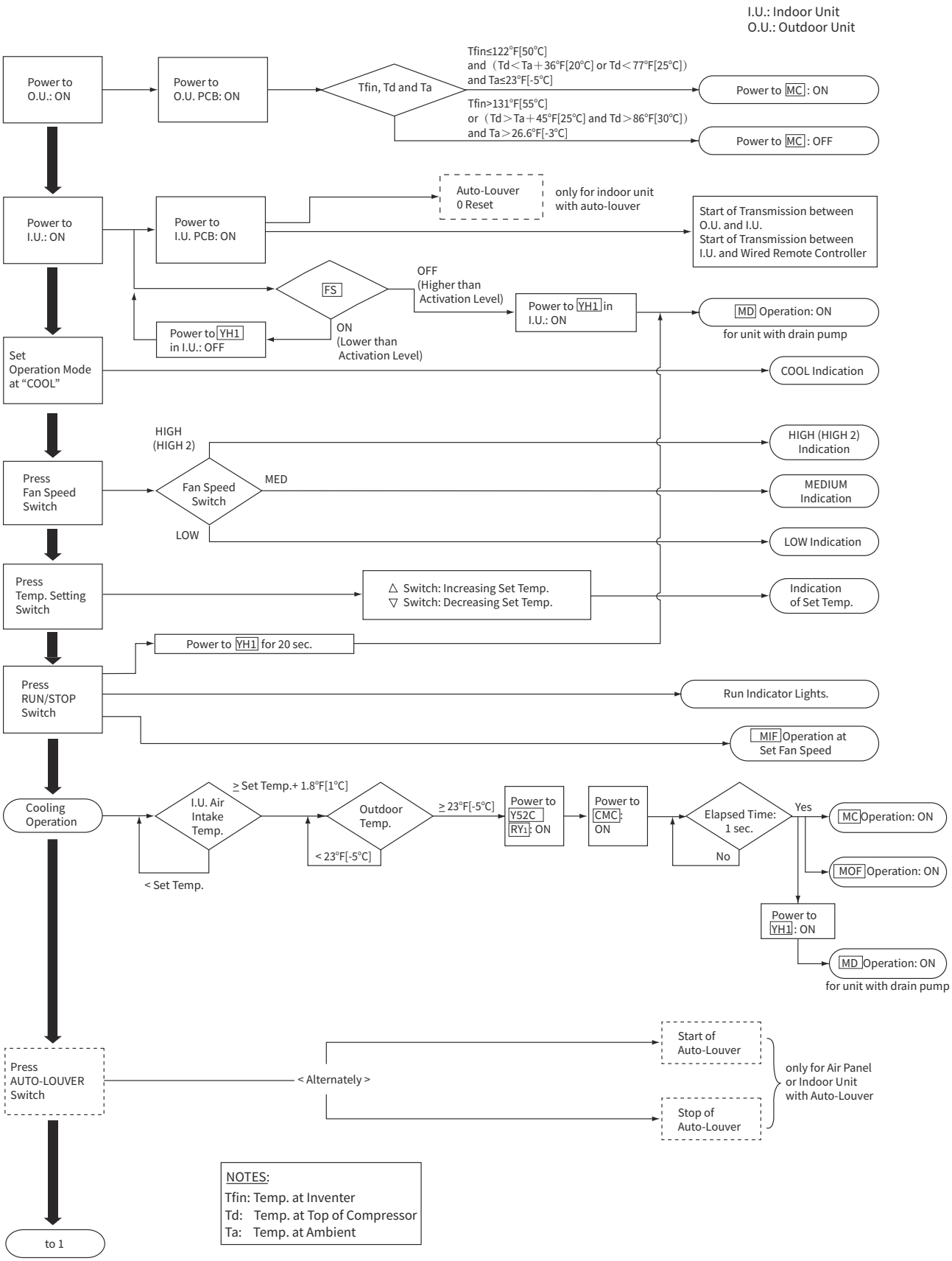


Model	PAS-24BLFASDQ1 *1	PAS-30BLFASDQ1	PAS-36BLFASDQ1
Liquid Pipe Connection [in.(mm)]	3/8(Φ9.53)	3/8(Φ9.53)	3/8(Φ9.53)
Gas Pipe Connection [in.(mm)]	5/8(Φ15.88)	5/8(Φ15.88)	5/8(Φ15.88)

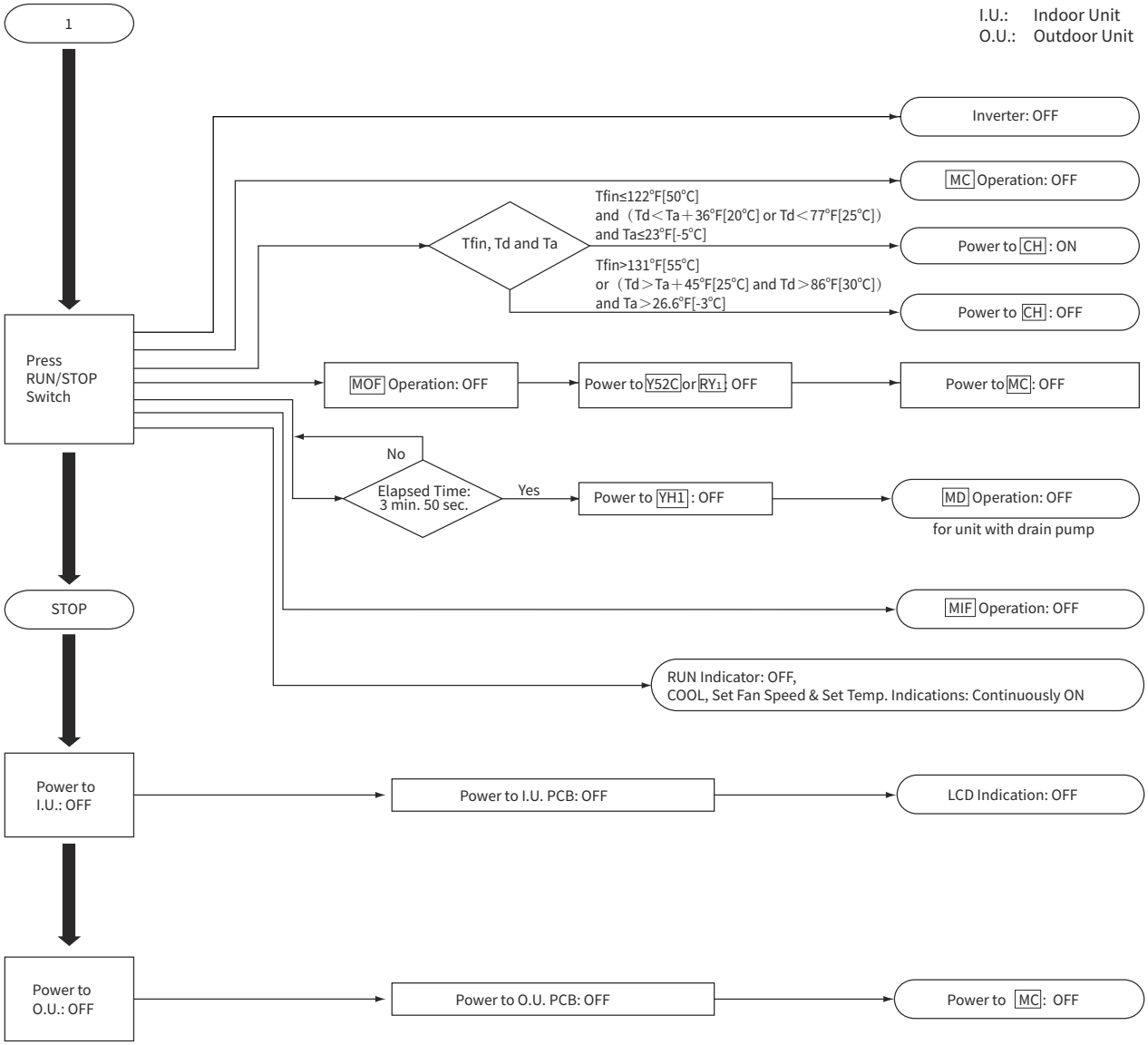
*1: For the 24K model, when connecting the indoor unit (Ducted/Cassette) and outdoor unit, it is necessary to install the pipe reducer in the accessory package of the outdoor unit at the gas pipe joint and the liquid pipe joint of the indoor unit.

10.2 Standard Operation Sequence

■ Cooling Operation



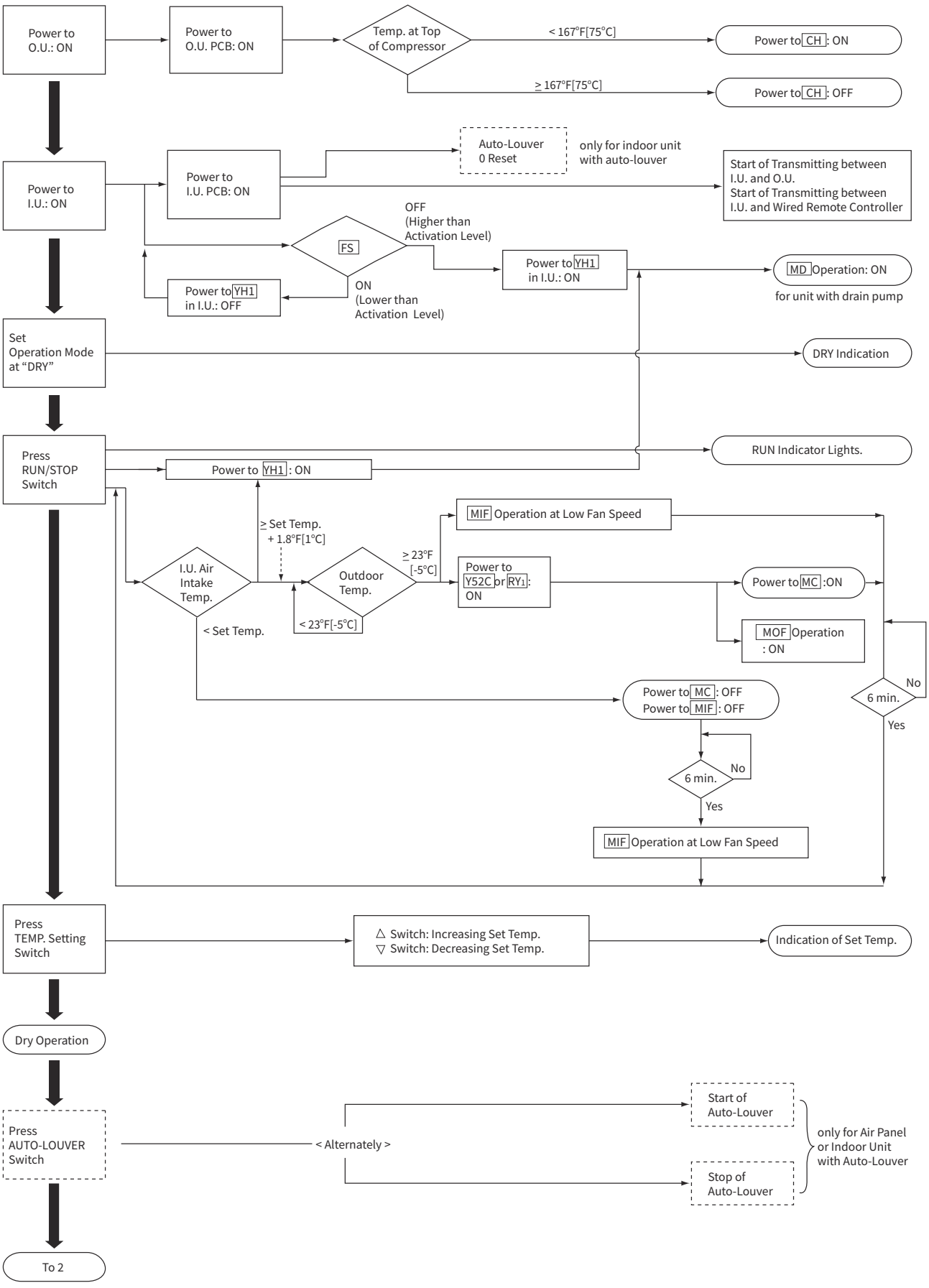
■ Cooling Operation



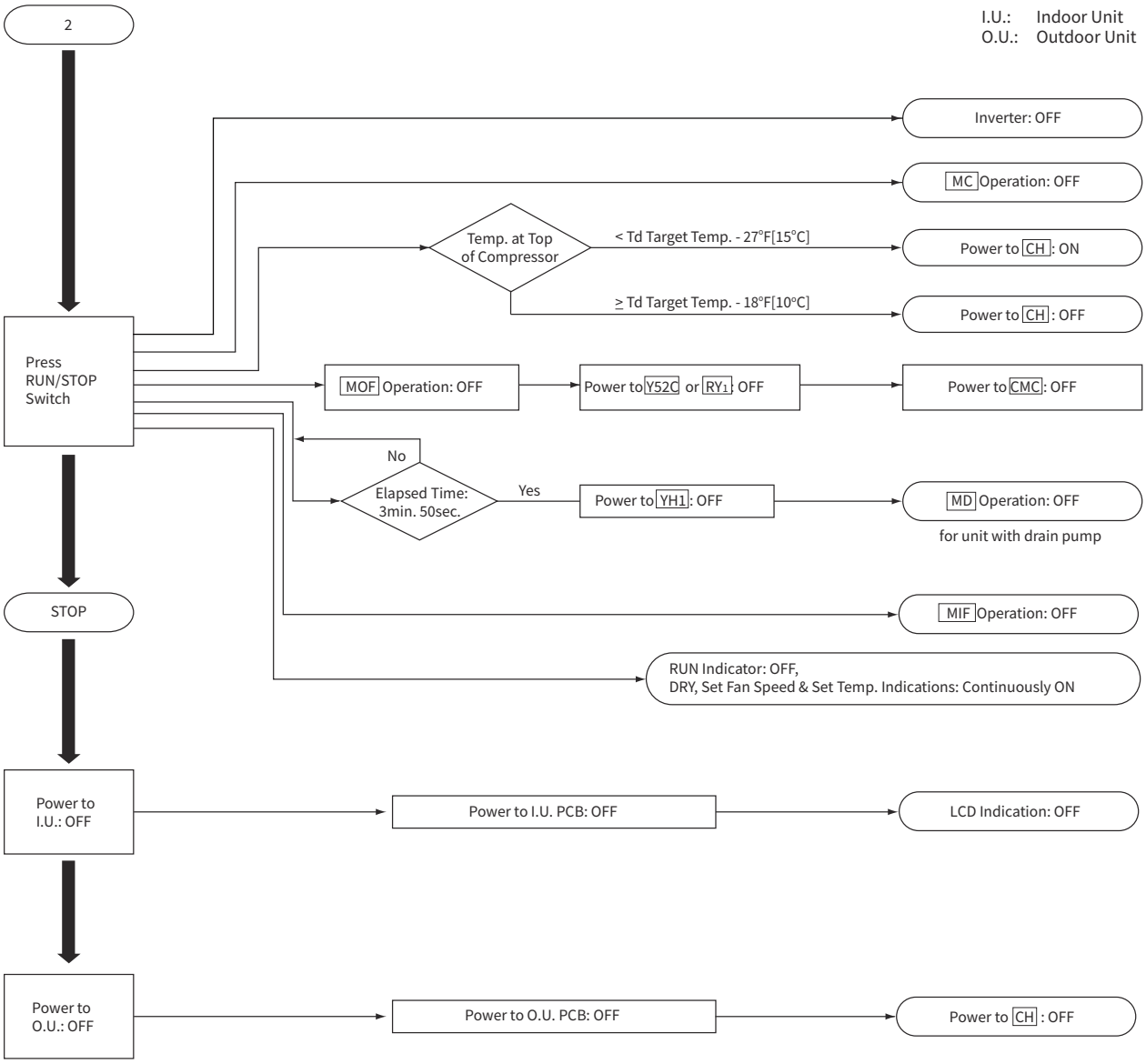
NOTES:
Tfin: Temp. at Inventer
Td: Temp. at Top of Compressor
Ta: Temp. at Ambient

■ Dry Operation

I.U.: Indoor Unit
O.U.: Outdoor Unit

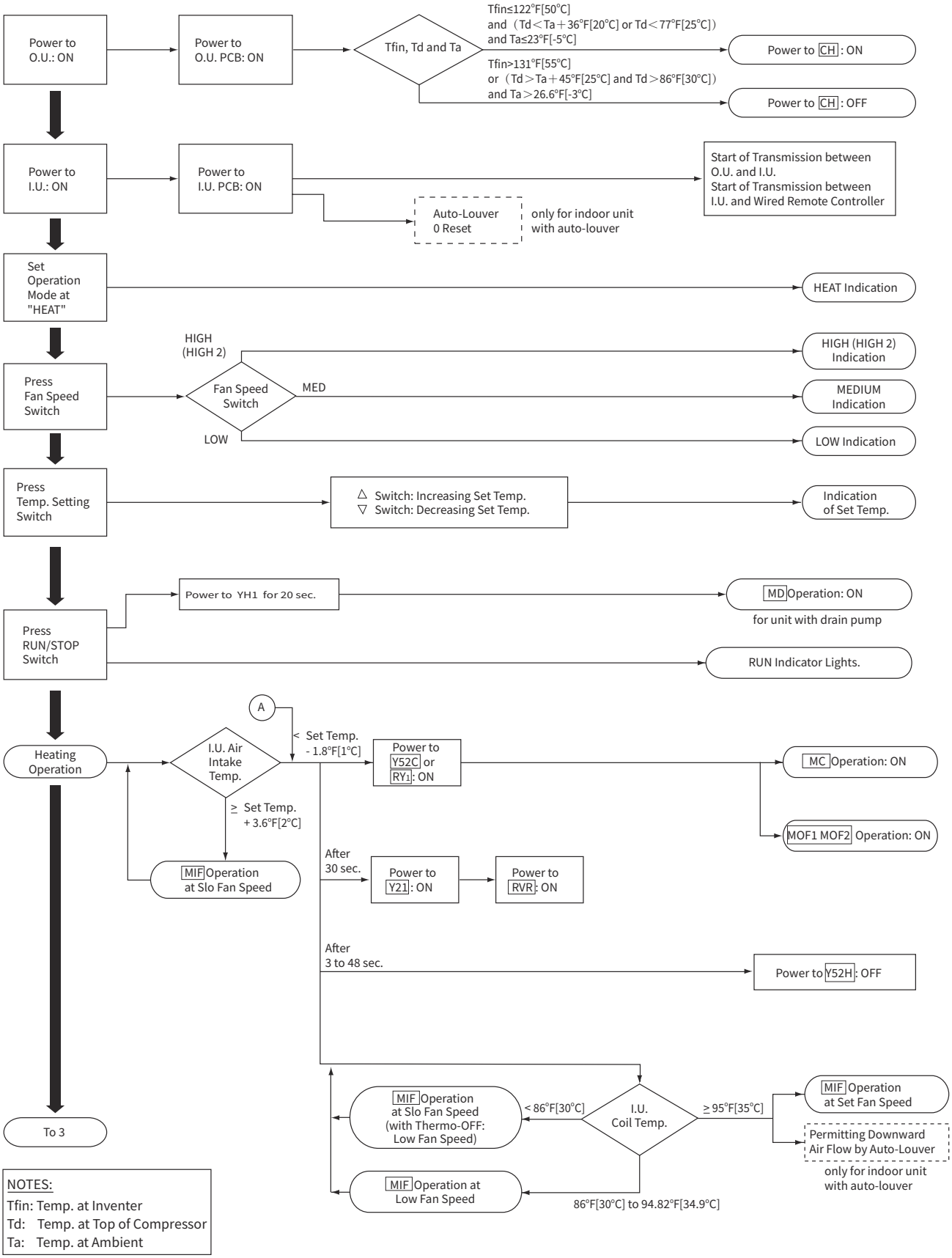


■ Dry Operation



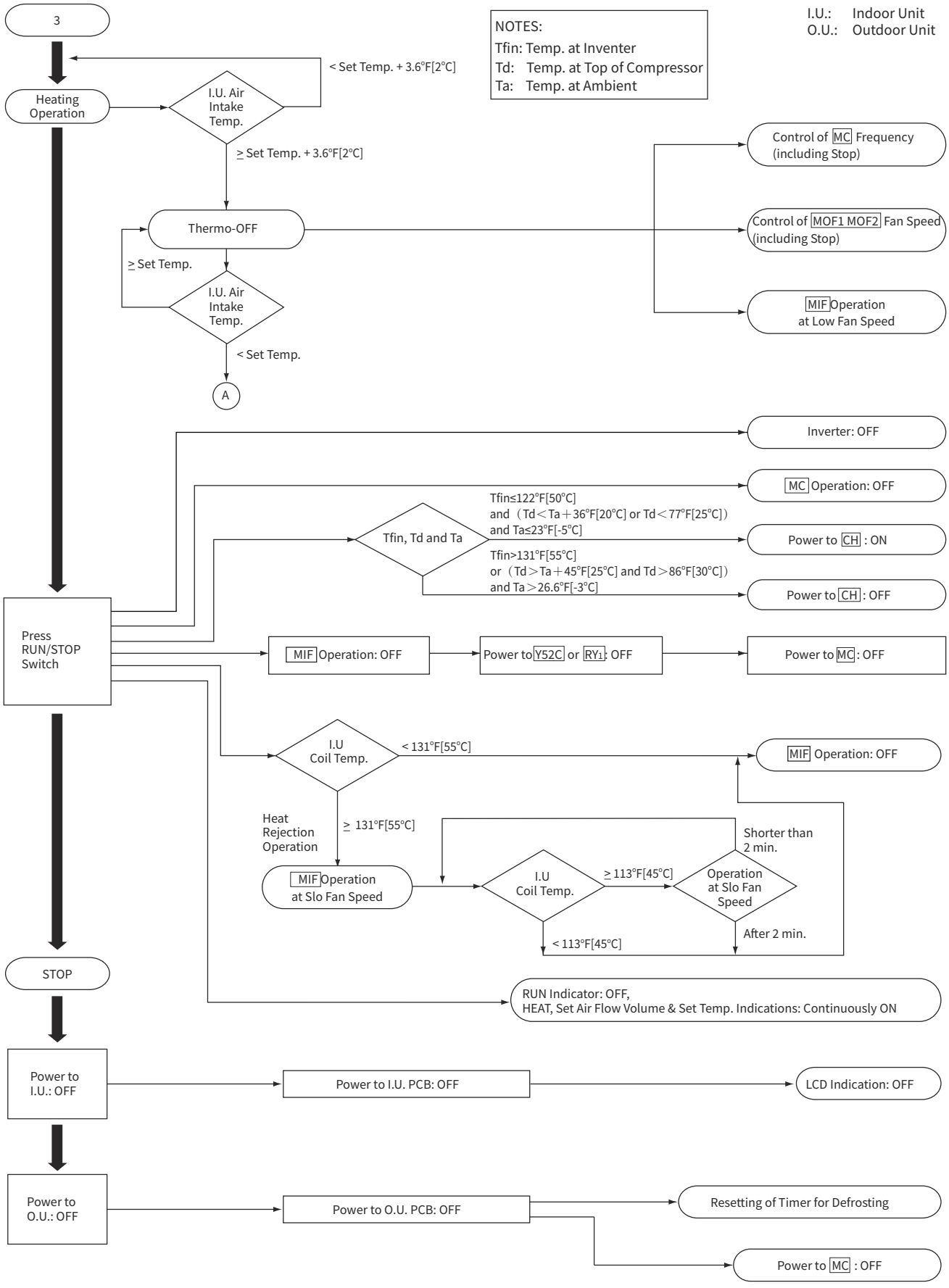
■ Heating Operation

I.U.: Indoor Unit
O.U.: Outdoor Unit



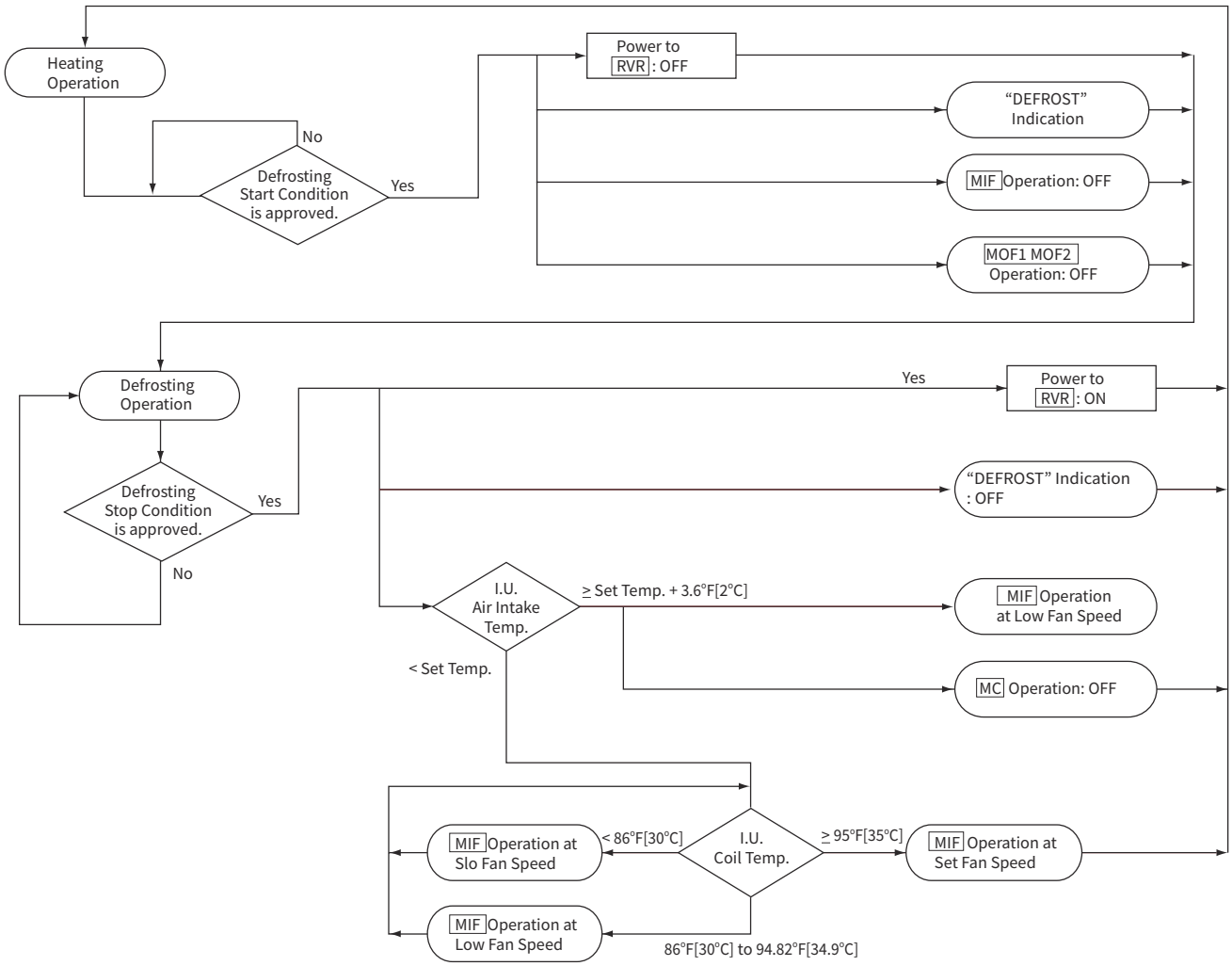
NOTES:
Tfin: Temp. at Inventer
Td: Temp. at Top of Compressor
Ta: Temp. at Ambient

■ Heating Operation



■ Defrosting Operation

I.U.: Indoor Unit



10.2.1 Defrosting Operation

The following defrosting operations, "Standard Defrost", "Forced Defrost" and "Manual Defrost" are available.

(1) Standard Defrost
This operation is started according to the outdoor temperature, the outdoor evaporating temperature and operating time.

(2) Forced Defrost
This operation starts when the indoor unit is operated Thermo-ON/OFF repeatedly and the standard defrost is not used.

(3) Manual Defrost
This operation starts when the push switch "PSW1" on the outdoor PCB is pressed and hold for more than 3 seconds during the maintenance work. (It is not performed when the defrosting operation is started, the high pressure and the outdoor evaporating temperature is high.)

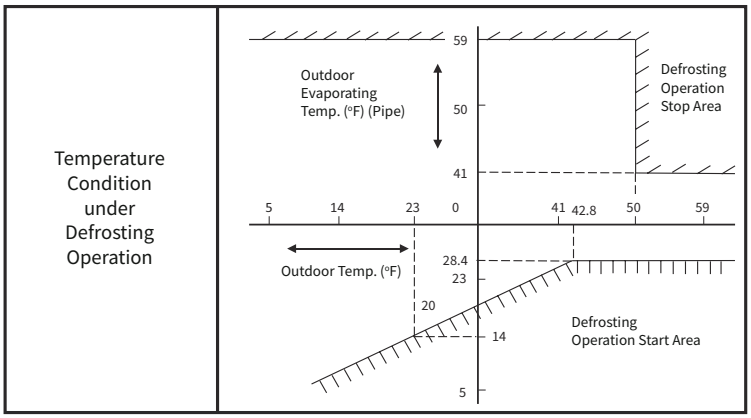
NOTE:

- Do not repeat defrost operation frequently.

10.2.2 Condition for Starting Defrost

(1) Standard Defrost

(a) Temperature Condition



(b) Condition for Operating Time of Defrost Operation Start
The defrosting operation is started when the temperature condition is met "(a) Temperature Condition" after the heating operation is performed for 30 to 120 minutes. The heating operation time is determined by estimating the amount of frosting on the heat exchanger.

(2) Forced Defrost

< Condition for Starting >

The forced defrosting operation is started when all the following conditions are met.

(a) 120 minutes are passed after the reversing valve is "ON".
(b) The outdoor temperature is lower than 50°F(10°C).
(c) The accumulated heating operation time is more than 120 minutes.
(The accumulated time is reset when the operation is stopped or the defrosting operation is performed.)
(d) The compressor is operated continuously for more than 1 and half minutes.
(e) The outdoor evaporating temperature is lower than 41°F(5°C) right before starting the operation.
(f) The pressure switch for control is "OFF".

10.2.3 Condition for Completing Defrost Operation

The defrosting operation is stopped when any of following conditions are met.

(1) The outdoor evaporating temperature becomes more than 77°F(25°C) for 2 minutes from starting the defrosting operation.
(2) The outdoor evaporating temperature becomes more than 59°F(15°C) (the outdoor temperature < 50°F[10°C]) after passing 2 minutes from starting the defrosting operation.
(3) The outdoor evaporating temperature becomes more than 41°F(5°C) (the outdoor temperature ≥ 50°F[10°C]) after passing 2 minutes from starting the defrosting operation.
(4) The pressure switch for control is "ON".
(5) More than 9 minutes are passed after starting the defrosting operation.

NOTES:

- The defrosting operation is not started immediately even if the above conditions are met.
(The defrosting condition may be met temporally depending on the refrigerant cycle variability.)
- The defrosting operation is started when the conditions are met continuously for period of time.

☐ Prevention Control for High Pressure Increase during Cooling Operation

This function is performed to prevent the abnormal condition (Alarm Code: 02) when the air flow volume is decreased by a seasonal wind against air outlet of the outdoor unit. When the following conditions are met, the forced Thermo-OFF operation will be performed.
The cause of stoppage will be 13 during Thermo-OFF.

(1) Y52C is turned "ON" during the cooling operation, or RY1 is turned "ON" (during the compressor operation).

(2) High Pressure ≥ 602Psig(4.15MPa)

10.3 Protection and Safety Control

Compressor Protection

The compressor is protected by the following devices and their combinations.

Pressure Switch-High

This switch cuts out the operation of the compressor when the discharge pressure exceeds the setting.

Indoor Unit Safety and Control Device Setting

Model			PPIM-B12UFA1DQ PPIM-B18UFA1DQ PPIM-B24UFA1DQ PPIM-B30UFA1DQ PPIM-B36UFA1DQ	PCIM-B12UFA1DQ PCI-B18UFA1DQ PCI-B24UFA1DQ PCI-B30UFA1DQ PCI-B36UFA1DQ	PPK-B30UFA1DQ
For Control Circuit Fuse Capacity		A	10	5	5
Freeze Protection Thermostat	Cut-Out	°F(°C)	32(0)		
	Cut-In	°F(°C)	57.2(14)		
Thermostat Differential		°F(°C)	3.6(2)		

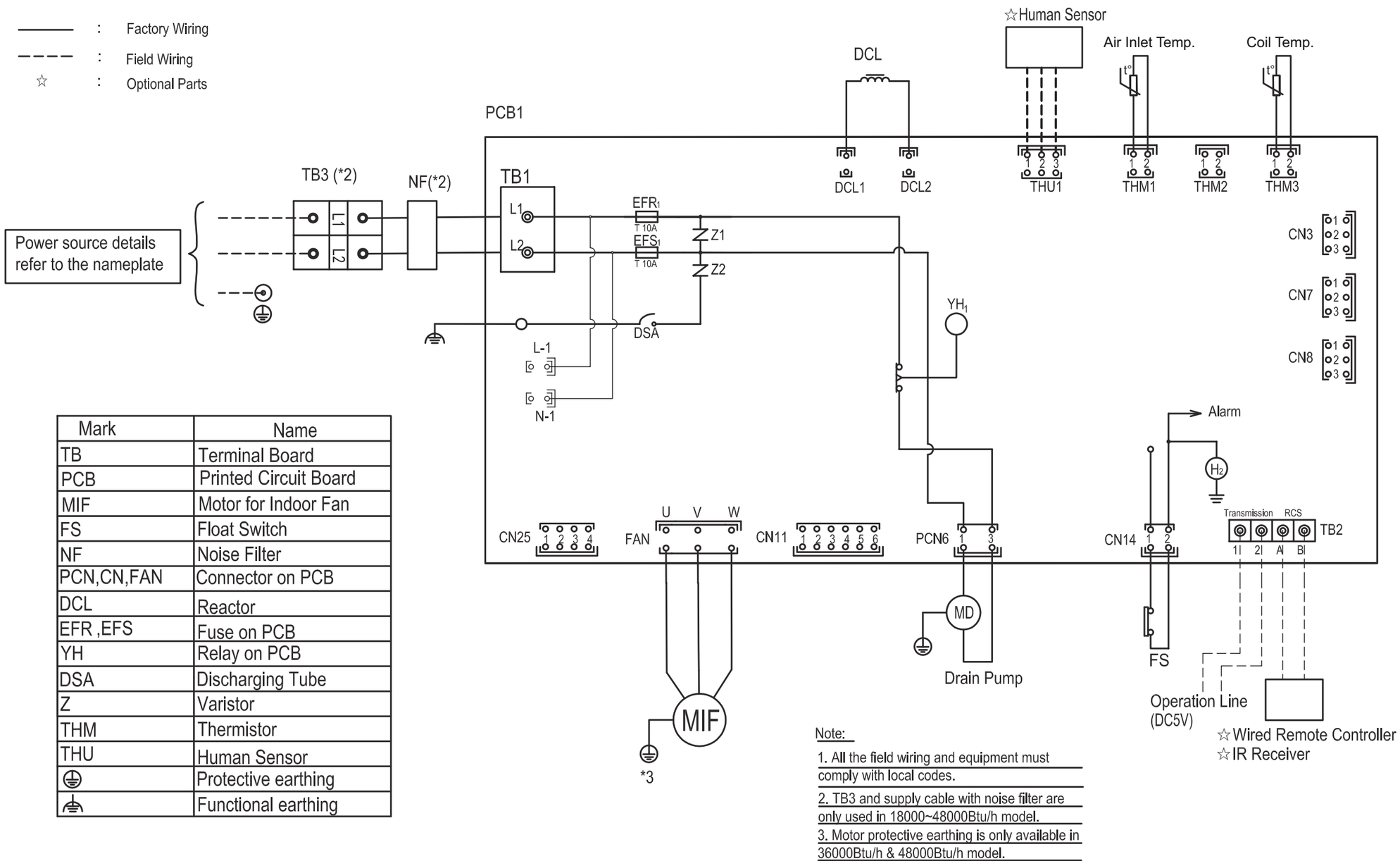
Outdoor Unit Safety and Control Device Setting

Model		PAS-12BLFASDQ1 PAS-18BLFASDQ1	PAS-24BLFASDQ1 PAS-30BLFASDQ1 PAS-36BLFASDQ1
For compressor Pressure Switch High	Psig [MPa]	602[4.15]/464[3.2](OFF/ON)	
Discharge Gas Thermistor	°F [°C]	239[115](OFF) Cooling 239[115](OFF) Heating	
For Power Source Fuse Capacity	A	30	50

10.4 Electrical Wiring Diagram

10.4.1 Indoor Units

ELECTRICAL WIRING DIAGRAM (FOR MODELS: PPIM-B12~B36UFA1DQ)

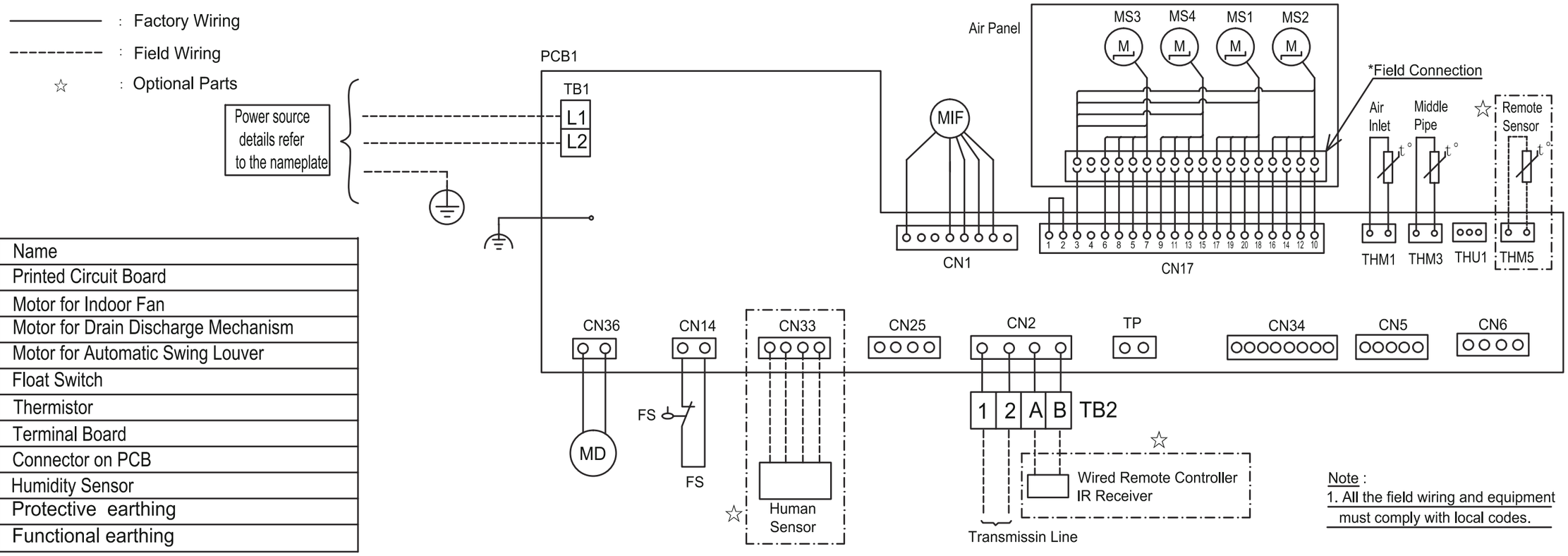


Mark	Name
TB	Terminal Board
PCB	Printed Circuit Board
MIF	Motor for Indoor Fan
FS	Float Switch
NF	Noise Filter
PCN,CN,FAN	Connector on PCB
DCL	Reactor
EFR ,EFS	Fuse on PCB
YH	Relay on PCB
DSA	Discharging Tube
Z	Varistor
THM	Thermistor
THU	Human Sensor
⏚	Protective earthing
⏚	Functional earthing

Note:

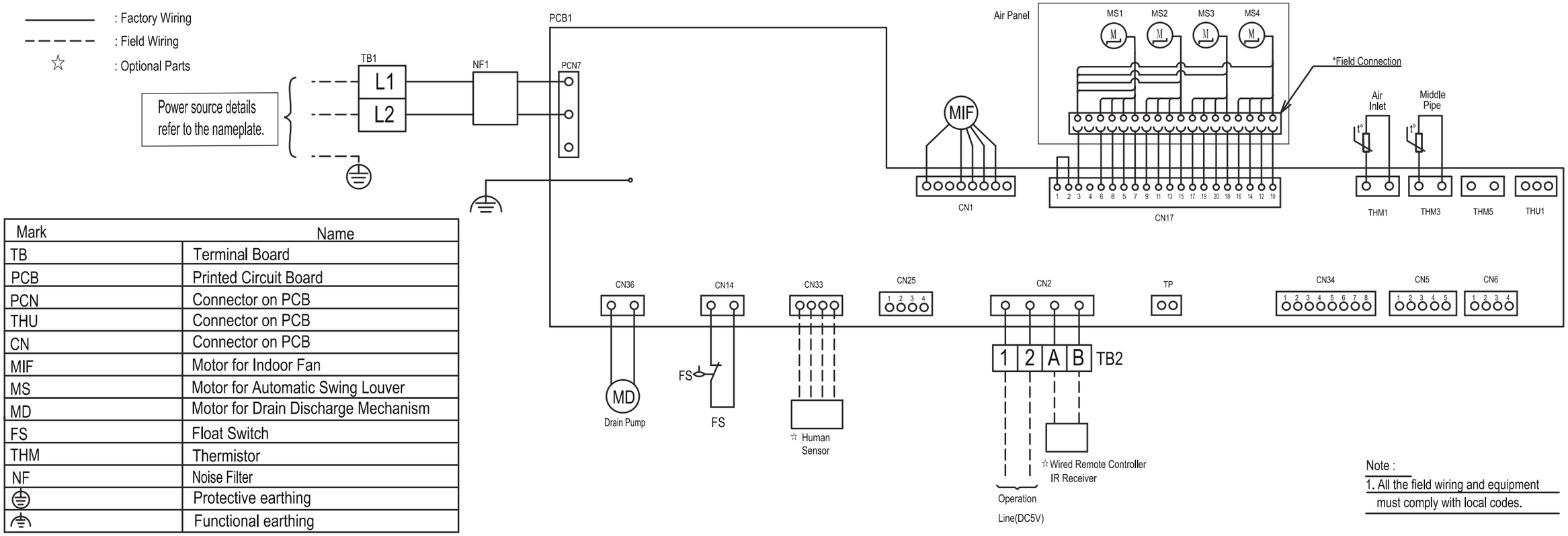
1. All the field wiring and equipment must comply with local codes.
2. TB3 and supply cable with noise filter are only used in 18000~48000Btu/h model.
3. Motor protective earthing is only available in 36000Btu/h & 48000Btu/h model.

ELECTRICAL WIRING DIAGRAM (FOR MODEL: PCIM-B12UFA1DQ)



Mark	Name
PCB	Printed Circuit Board
MIF	Motor for Indoor Fan
MD	Motor for Drain Discharge Mechanism
MS	Motor for Automatic Swing Louver
FS	Float Switch
THM	Thermistor
TB	Terminal Board
CN	Connector on PCB
THU	Humidity Sensor
⏚	Protective earthing
⏚	Functional earthing

ELECTRICAL WIRING DIAGRAM (FOR MODELS: PCI-B18~B36UFA1DQ)



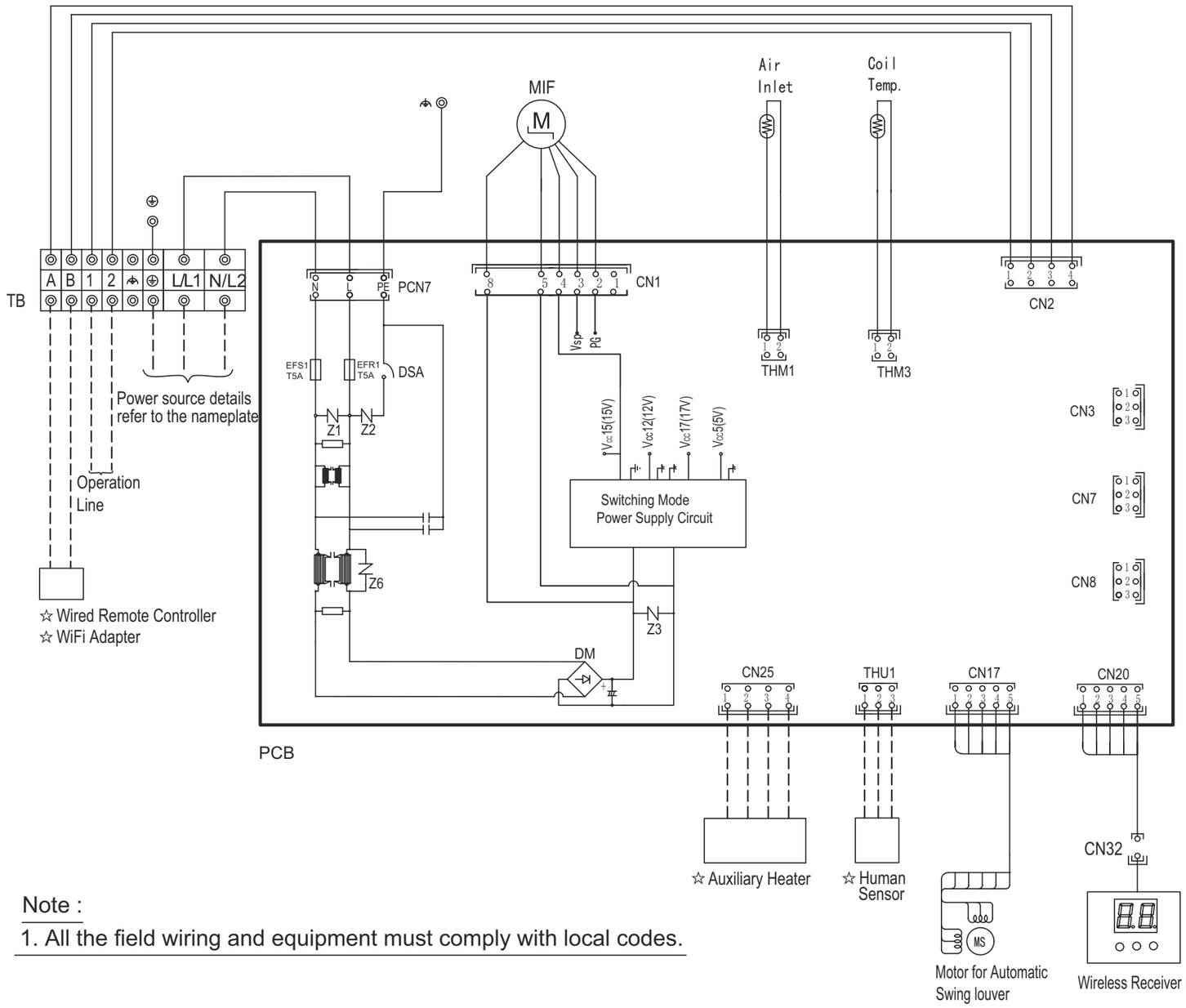
Mark	Name
TB	Terminal Board
PCB	Printed Circuit Board
PCN	Connector on PCB
THU	Connector on PCB
CN	Connector on PCB
MIF	Motor for Indoor Fan
MS	Motor for Automatic Swing Louver
MD	Motor for Drain Discharge Mechanism
FS	Float Switch
THM	Thermistor
NF	Noise Filter
⏚	Protective earthing
⏚	Functional earthing

Note :

1. All the field wiring and equipment must comply with local codes.

ELECTRICAL WIRING DIAGRAM (FOR MODEL: PPK-B30UFA1DQ)

——— : Factory Wiring
– – – – : Field Wiring
☆ : Optional Parts

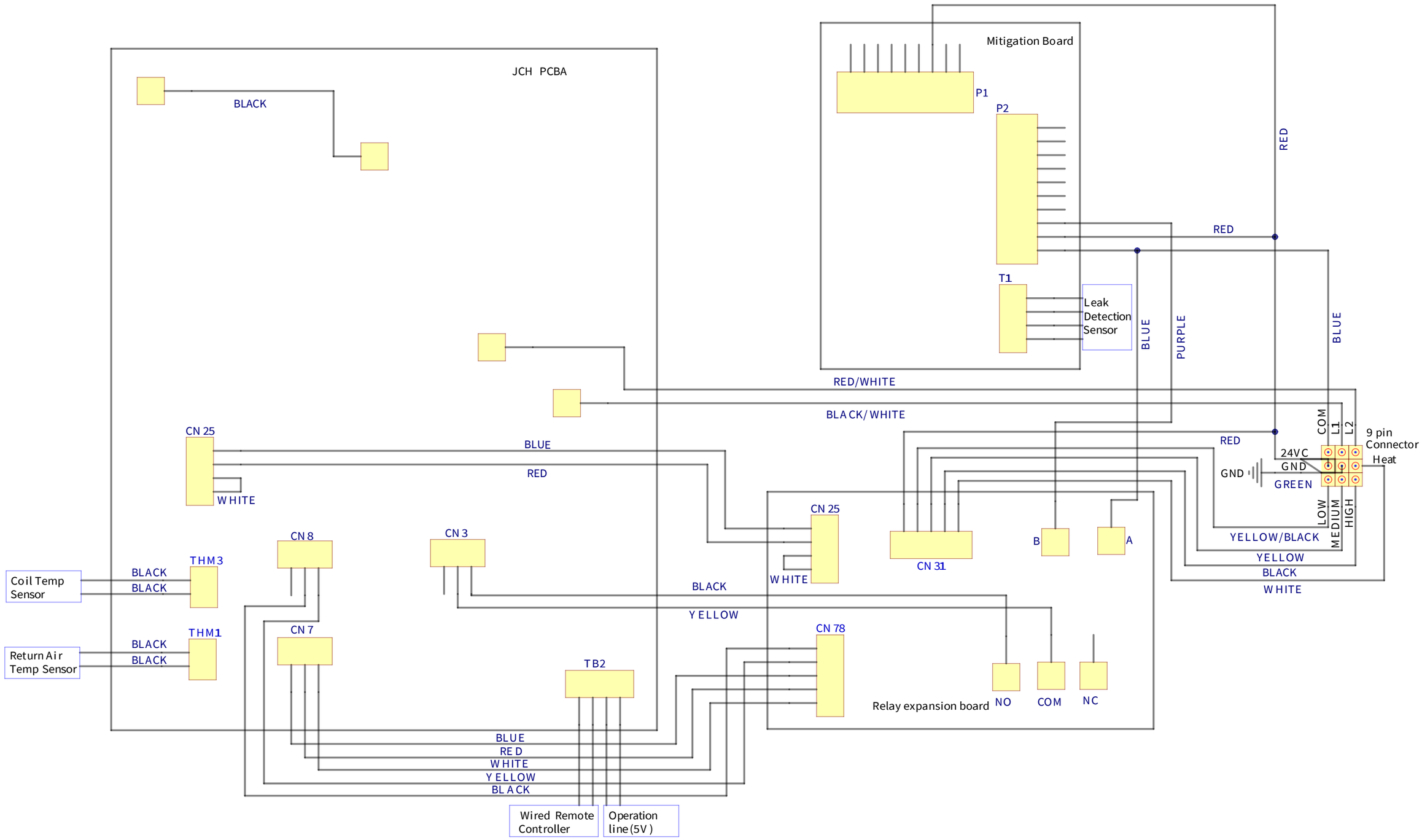


Mark	Name
PCB	Printed Circuit Board
MIF	Motor for Indoor Fan
THM1,3	Connector
THU1	Connector
CN	Connector
PCN7	Connector
EFR1	Fuse
EFS1	Fuse
Z	Varistor
DM	Bridge Rectifier
DSA	Discharging Tube
TB	Terminal Board
⏚	Protective Earthing
⏚	Functional Earthing
Air Inlet	Temperature Thermistor
Coil Temp.	Temperature Thermistor

Note :

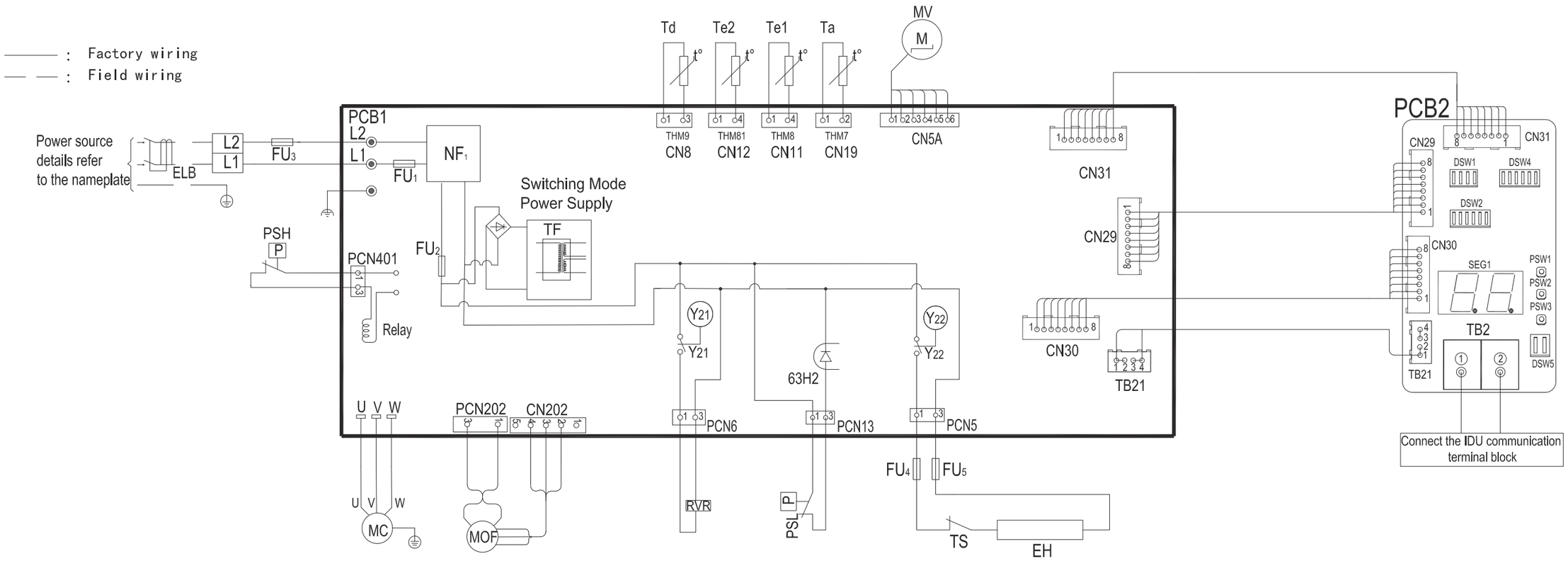
1. All the field wiring and equipment must comply with local codes.

ELECTRICAL WIRING DIAGRAM (FOR MODELS: JPE18B3XB2HS1A/JPE24B3XC2HS1A/JPE36B3XD2HS1A)



10.4.2 Outdoor Units

ELECTRICAL WIRING DIAGRAM (FOR MODELS: PAS-12~18BLFASDQ1)



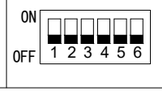
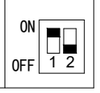
[Fault code description]

Fault codes	Fault content	Main reason
01	Indoor protection device action	High water level, abnormal drainage pipe, abnormal float switch, abnormal water tray
02	ODU Pressure Switch-High protection	Pressure Switch-High protection
03	IDU interruption of communication	Abnormal communication line ODU fuse blown
04	Communication failure of frequency converter	Abnormal communication line between the main control board and the driver board；ODU fuse blown
05	Power phase abnormality	Reverse phase of power wiring and missing phase of power wiring
06	Abnormal voltage of frequency converter	ODU substrate abnormality, frequency conversion substrate abnormality, DM, CB abnormality
07	TdSH too low	Excessive refrigerant, expansion valve locked open (connection detached) Wiring errors in refrigerant and electrical systems between indoor and outdoor units
08	Abnormal temperature rise at the top of the compressor (Td)	Insufficient refrigerant, leakage, blocked piping, blocked expansion valve
(11)	Abnormal return air temperature sensor	Sensor wiring error, disconnection, short circuit
(12)	Abnormal air outlet temperature sensor	
(13)	Abnormal temperature sensor in indoor pipe	
(14)	Abnormal resistance of air duct temperature sensor	
(16)	Remote control temperature sensor abnormal	
(17)	The built-in temperature sensor of the wire controller is abnormal	
(19)	Abnormal indoor fan motor	Indoor fan motor overheated and blocked
20	Td sensor failure	Sensor wiring error, disconnection, short circuit
22	Ta sensor failure	Sensor wiring error, disconnection, short circuit
24	Te1 sensor failure	Sensor wiring error, disconnection, short circuit
26	Te2 sensor failure	Sensor wiring error, disconnection, short circuit
31	Internal and external machine capacity mismatch	Incorrect outdoor and indoor capacity settings, total indoor capacity too large or too small, incorrect outdoor unit series and electrical system settings
35	Indoor and outdoor unit number setting error	Different indoor units within the same refrigerant piping system are set to the same unit number
36	Indoor unit combination error	Inconsistent brand or series of indoor and outdoor units
38	Abnormal detection circuit of outdoor unit protection	The wiring of the outdoor unit substrate has incorrect wiring
47	Pressure Switch-Low alarm	Insufficient refrigerant, blocked refrigerant piping, expansion valve locked closed (connection detached)
48	Inverter overcurrent protection action	Overload operation, abnormal compressor
5c	Abnormal current sensor	Current sensor fault，Motor failure, motor drive board failure
53	Frequency converter error signal detection	Abnormal compressor, ISPM (SIPM), blocked heat exchanger, etc
54	Abnormal temperature of the heat sink fins of the frequency converter	Abnormal heat sink temperature sensor, blocked heat exchanger, abnormal fan motor
55	The frequency converter does not operate	Abnormal frequency conversion substrate
57	Outdoor fan motor protection action	The connection wiring between the frequency conversion substrate and the fan motor is broken, incorrectly wired, and the fan motor is abnormal
58	Pressure Switch-Low alarm	Pressure Switch-Low protection action
EE	Compressor protection alarm (cannot be reset through wire control)	The alarm code that causes damage to the compressor appears three times within 6 hours: 02、07、08、39、43~45、47
b1	Address · refrigerant system setting error	When the address · refrigerant system setting exceeds 64

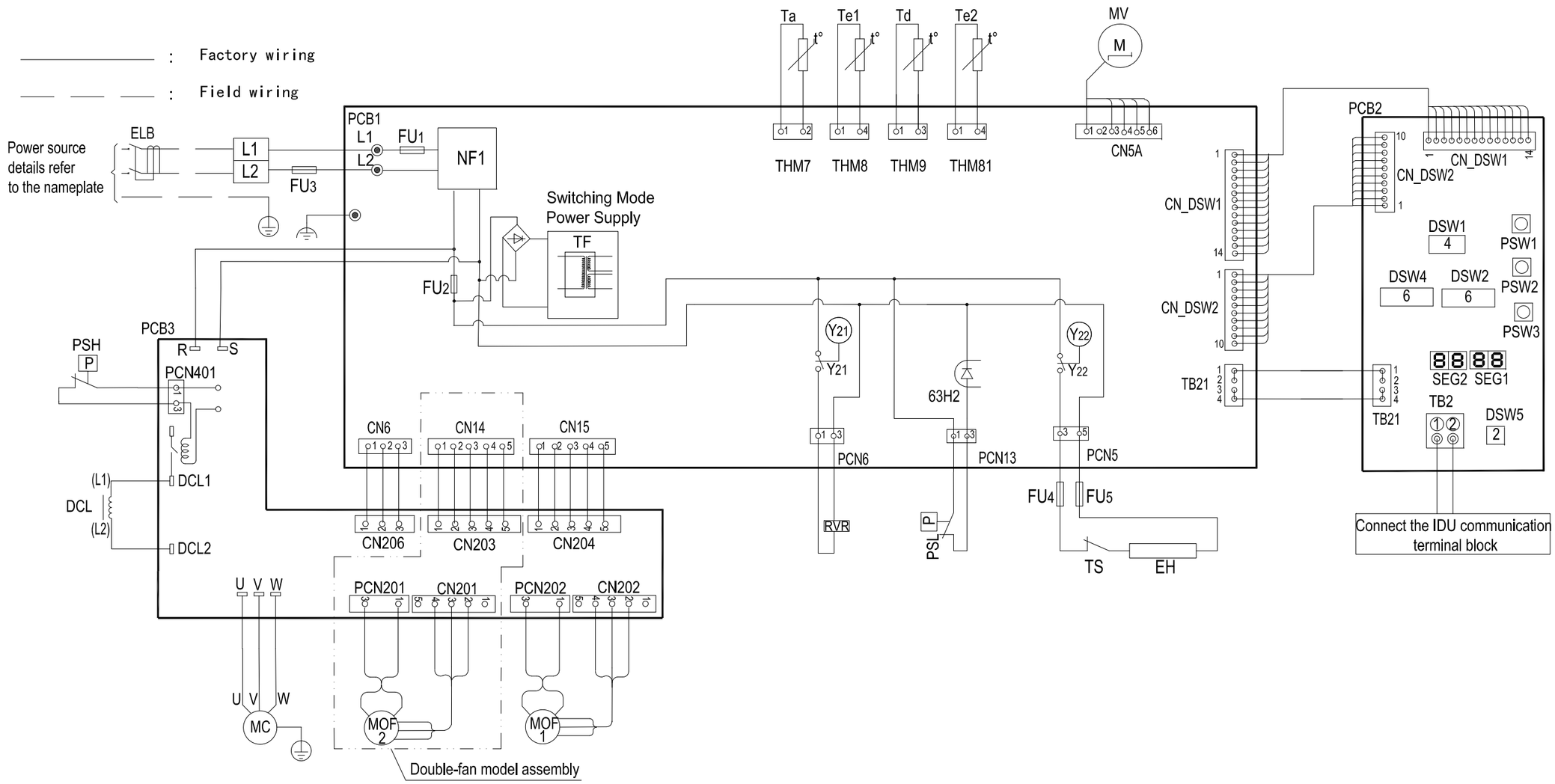
ICON	ICON Meaning
MC	Compressor
MOF	Fan motor
$FU_{1\sim5}$	Fuse
RVR	Four-way valve
PSL	Pressure Switch-Low
PSH	Pressure Switch-High
DCL	Inductor
PCB_1	Main control board
PCB_2	Expansion board
TB_1	Power terminal block
TB_2	Communication terminal block
NF_1	Filter
CN,PCN	Wiring port
Ta	Ambient Temperature Sensor
Td	Discharge temperature sensor
Te1	Temperature sensor at the bottom of the coil
Te2	Temperature sensor in the middle of the coil
MV	Electronic expansion valve
⏚	Protective Earthing
⏚	Functional Earthing
TS	Temperature Switch
EH	Electrical Heating

[DSW settings (at the factory)]

■ Indicates the position of the Dip switch.

DSW1	DSW2	DSW4	DSW5
			
Test Run	Functional selection	Refrigerant selection	

ELECTRICAL WIRING DIAGRAM (FOR MODELS: PAS-24~36BLFASDQ1)



[Fault code description]

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03	IDU interruption of communication	Abnormal communication line ODU fuse blown
04	Communication failure of frequency converter	Abnormal communication line between the main control board and the driver board；ODU fuse blown
05	Power phase abnormality	Reverse phase of power wiring and missing phase of power wiring
06	Abnormal voltage of frequency converter	ODU substrate abnormality, frequency conversion substrate abnormality, DM, CB abnormality
07	TdSH too low	Excessive refrigerant, expansion valve locked open (connection detached) Wiring errors in refrigerant and electrical systems between indoor and outdoor units
08	Abnormal temperature rise at the top of the compressor (Td)	Insufficient refrigerant, leakage, blocked piping, blocked expansion valve
(11)	Abnormal return air temperature sensor	Sensor wiring error, disconnection, short circuit
(12)	Abnormal air outlet temperature sensor	
(13)	Abnormal temperature sensor in indoor pipe	
(14)	Abnormal resistance of air duct temperature sensor	
(16)	Remote control temperature sensor abnormal	
(17)	The built-in temperature sensor of the wire controller is abnormal	
(19)	Abnormal indoor fan motor	Indoor fan motor overheated and blocked
20	Td sensor failure	Sensor wiring error, disconnection, short circuit
22	Ta sensor failure	Sensor wiring error, disconnection, short circuit
24	Te1 sensor failure	Sensor wiring error, disconnection, short circuit
26	Te2 sensor failure	Sensor wiring error, disconnection, short circuit
31	Internal and external machine capacity mismatch	Incorrect outdoor and indoor capacity settings, total indoor capacity too large or too small, incorrect outdoor unit series and electrical system settings
35	Indoor and outdoor unit number setting error	Different indoor units within the same refrigerant piping system are set to the same unit number
36	Indoor unit combination error	Inconsistent brand or series of indoor and outdoor units
38	Abnormal detection circuit of outdoor unit protection	The wiring of the outdoor unit substrate has incorrect wiring
47	Pressure Switch-Low alarm	Insufficient refrigerant, blocked refrigerant piping, expansion valve locked closed (connection detached)
48	Inverter overcurrent protection action	Overload operation, abnormal compressor
5c	Abnormal current sensor	Current sensor fault，Motor failure, motor drive board failure
53	Frequency converter error signal detection	Abnormal compressor, ISPM (SIPM), blocked heat exchanger, etc
54	Abnormal temperature of the heat sink fins of the frequency converter	Abnormal heat sink temperature sensor, blocked heat exchanger, abnormal fan motor
55	The frequency converter does not operate	Abnormal frequency conversion substrate
57	Outdoor fan motor protection action	The connection wiring between the frequency conversion substrate and the fan motor is broken, incorrectly wired, and the fan motor is abnormal
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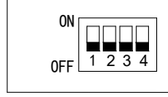
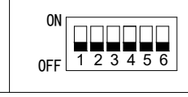
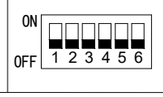
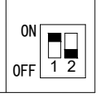
b1	Address · refrigerant system setting error	When the address · refrigerant system setting exceeds 64

ICON	ICON Meaning
MC	Compressor
MOF	Fan motor
$FU_{1\sim5}$	Fuse
RVR	Four-way valve
PSL	Pressure Switch-Low
PSH	Pressure Switch-High
DCL	Inductor
PCB_1	Main control board
PCB_2	Expansion board
TB_1	Power terminal block
TB_2	Communication terminal block
NF_1	Filter
CN,PCN	Wiring port
Ta	Ambient Temperature Sensor
Td	Discharge temperature sensor
Te1	Temperature sensor at the bottom of the coil
Te2	Temperature sensor in the middle of the coil
MV	Electronic expansion valve
⏚	Protective Earthing
⏚	Functional Earthing
PCB_3	Drive board
TS	Temperature Switch
EH	Electrical Heating

[DSW settings (at the factory)]

■ Indicates the position of the Dip switch.

DSW1	DSW2	DSW4	DSW5
			
Test Run	Functional selection	Refrigerant selection	

11. Miscellaneous Notes

Special Notes

1. Avoid obstacles which may restrict the air intake or the discharge flow.
2. Do not install the unit in a machinery shop or kitchen where vapor from oil or its mist can enter to the unit.
   The oil will deposit on the heat exchanger, thereby reducing the unit performance, and may deform, in the worst case, break the plastic parts of the unit.
3. Pay attention to the following points when the unit is installed in a hospital or other facilities where electromagnetic wave is radiated from medical equipment.
   (a) Do not install the unit where the electromagnetic wave is directly radiated to the electrical box, remote control cable or remote control switch.
   (b) Install the unit and component as far as practical (at least 10ft(3m)) from the electromagnetic wave radiator.
   (c) Prepare a steel box and install the remote control switch in it. Prepare a steel conduit pipe and wire the remote control cable in it. And then, connect earth wire with the box and the pipe.
   (d) Install a noise filter when the power supply emits harmful noise.
4. Do not install the units in an acid or alkaline environment due to the corrosive action on the heat exchanger. In the case that outdoor units are installed near the sea, it is recommended that optional corrosion-resistant type outdoor unit be used.
5. Do not install the units in a flammable environment due to the danger of an explosion.
6. During heating operation, the outdoor heat exchanger produces condensate dew or melting water from frost. Install the outdoor unit where drainage of such water is convenient, or provide a drain passage.
7. Heating Performance: The heating capacity normally decreases when outdoor temperatures decrease.
8. In the case that an outdoor temperature is low and humidity is high, the outdoor heat exchanger will covered with frost, resulting in lower heating capacity. In order to remove the frost, the unit is automatically changed to the defrosting mode. During this defrosting operation, the unit is stopped for approximately 3 to 9 minutes.
9. As this unit is of heat pump type by circulating hot air in the whole room space, it takes time to heat up the room temperature.
10. The operating sound data is based on an anechoic chamber. Therefore, the actual operating sound will be higher due to reflected sound from the floor and wall.
11. In the case that the unit is operated for a long time higher than the indoor temperature of 80.6°F(27°C) DB or the humidity of 80%, dewing may occur on the cabinets resulting in dew drops.
    If dewing, it is required to add thermal insulator on the cabinets.
12. Provide snow-protection hoods to prevent the outdoor heat exchanger from snow clogging.
    If the unit is operated in an area where it snows heavily, provide a base under the outdoor unit which should be 1.6ft(0.5m) higher than the presumable maximum snow height.
13. It is recommended that periodical service and maintenance be performed by authorized service engineers before air conditioning seasons, in order to avoid performance decrease due to dust or dirt.
14. This heat pump air conditioner has been designed for human comfort air conditioning only. Do not apply to other purposes such as for food, animals, plants, high precision machines or work of art. Also do not apply to vehicles or vessels. It will results in water leakage or electrical leakage.
15. It is recommended that the system be installed by authorized engineers. If not, it may cause water leakage, electric shock or fire.
16. In a place where fibers or dusts are floating, the air filter or heat exchangers or the drain pipe may be clogged, resulting in water leakage from the drain pan.

Specifications in this document are subject to change without notice, in order that Hitachi-Johnson Controls Air Conditioning, Inc. may bring the latest innovations to their customers.

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