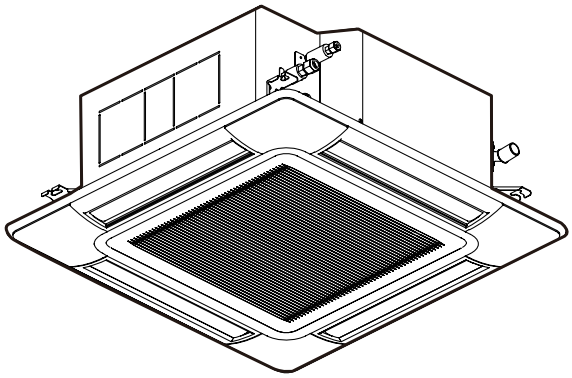
ENGINEERING MANUAL

INVERTER-DRIVEN MULTI-SPLIT SYSTEM
HEAT PUMP AIR CONDITIONERS



Engineering Manual

< Indoor Units >

- 4-Way Cassette
  - (H,Y,C)IC4008B21S
  - (H,Y,C)IC4012B21S
  - (H,Y,C)IC4015B21S
  - (H,Y,C)IC4018B21S
  - (H,Y,C)IC4024B21S
  - (H,Y,C)IC4030B21S
  - (H,Y,C)IC4036B21S
  - (H,Y,C)IC4048B21S

TC-17005

IMPORTANT NOTICE AND SAFETY SUMMARY

1. Introduction

This Engineering Manual concentrates on air conditioning units for use in heat pump and heat recovery systems. Read this manual carefully before performing installations or operations.

This manual should be considered as a permanent part of the air conditioning equipment and should remain with the air conditioning equipment.

(Transportation/Installation Work) > (Refrigerant Piping Work) > (Electrical Wiring Work) > (Ref. Charge Work) > (Test Run) > (User)

2. Important Safety Instructions

Signal Words	
⚠ WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates information considered important, but not hazard-related (for example, messages relating to property damage).

General Precautions

⚠ WARNING	To reduce the risk of serious injury or death, read these instructions thoroughly and follow all warnings or cautions included in all manuals that accompanied the product and are attached to the unit. Refer back to these instructions as needed.

- This system should be installed by personnel certified by Johnson Controls, Inc. Personnel must be qualified according to local, state and national building and safety codes and regulations. Incorrect installation could cause leaks, electric shock, fire or explosion. In areas where Seismic ‘’Performance requirements are specified, the appropriate measures should be taken during installation to guard against possible damage or injury that might occur in an earthquake if the unit is not installed correctly, injuries may occur due to a falling unit.
- Use appropriate Personal Protective Equipment (PPE), such as gloves and protective goggles and, where appropriate, have a gas mask nearby. Also use electrical protection equipment and tools suited for electrical operation purposes. Keep a wet cloth and a fire extinguisher nearby during brazing. Use care in handling, rigging, and setting of bulky equipment.
- When transporting, be careful when picking up, moving and mounting these units. Although the unit may be packed using plastic straps, do not use them for transporting the unit from one location to another. Do not stand on or put any material on the unit. Get a partner to help, and bend with your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut fingers, so wear protective gloves.
- Do not touch or adjust any safety devices inside the indoor or outdoor units. All safety features, disengagement, and interlocks must be in place and functioning correctly before the equipment is put into operation. If these devices are improperly adjusted or tampered with in any way, a serious accident can occur. Never bypass or jump-out any safety device or switch.
- Johnson Controls will not assume any liability for injuries or damage caused by not following steps outlined or described in this manual. Unauthorized modifications to Johnson Controls products are prohibited as they…
  - May create hazards which could result in death, serious injury or equipment damage.
  - Will void product warranties.
  - May invalidate product regulatory certifications.
  - May violate OSHA standards.

NOTICE	Take the following precautions to reduce the risk of property damage.

- Prevent moisture, dust, or non condensable compounds from entering the refrigerant cycle during installation work. Foreign matter could damage internal components or cause blockages.
- If air filters are required on this unit, do not operate the unit without the air filter set in place. If the air filter is not installed, dust may accumulate and breakdown may result.
- Do not install this unit in any place where silicon gases can collect. If the silicon gas molecules attach themselves to the surface of the heat exchanger, the finned surfaces will repel water. As a result, any amount of drainage moisture condensate can overflow from the condensate pan and could run inside of the electrical box, possibly causing electrical failures.
- When installing the unit in a hospital or other facility where electromagnetic waves are generated from nearby medical and/or electronic devices, be aware of noise and electronic interference Electromagnetic Interference (EMI). Do not install where EMI waves can directly radiate into the electrical box, controller cable, or controller. Inverters, appliances, high-frequency medical equipment, and radio communications equipment may cause the unit to malfunction. The operation of the unit may also adversely affect these same devices. Install the unit at least 10 ft. (approximately 3m) away from such devices.
- When a wireless controller is used, locate at a distance of at least 3.3 ft. (approximately 1m) between the indoor unit and electric lighting. If not, the receiver part of the unit may have difficulty receiving operation commands.
- Do not install the unit in any location where animals and plants can come into direct contact with the outlet air stream. Exposure could adversely affect the animals and plants.
- Do not install the unit with any downward slope to the side of the drain adapter. If you do, you may have condensate flowing back which may cause leaks.
- Be sure the condensate hose discharges water properly. If connected incorrectly, it may cause leaks.
- Do not install the unit in any place where oil can seep onto the units, such as table or seating areas in restaurants, and so forth. For these locations or social venues, use specialized units with oil-resistant features built into them. In addition, use a specialized ventilation unit designed for restaurant use. These specialized oil-resistant units can be ordered for such applications. However, in places where large quantities of oil can splash onto the unit, such as a factory, even the specialized units cannot be used. These products should not be installed in such locations.
- If the wired controller is installed in a location where electromagnetic radiation is generated, make sure that the wired controller is shielded and cables are sleeved inside conduit tubing.
- If there is a source of electrical interference near the power supply, install noise suppression equipment (filter).
- During the test run, check the unit's operation temperature. If the unit is used in an environment where the temperature exceeds the operation boundary, it may cause severe damage. Check the operational temperature boundary in the manual. If there is no specified temperature, use the unit within the operational temperature boundary of 32 to 104°F (0 to 40°C).
- Read installation and appropriate user manuals for connection with PC or peripheral devices. If a warning window appears on the PC, the product stops, does not work properly or works intermittently, immediately stop using the equipment.

Installation Precautions

⚠ WARNING	To reduce the risk of serious injury or death, the following installation precautions must be followed.

- When installing the unit into…
  - A wall: Make sure the wall is strong enough to hold the unit's weight. It may be necessary to construct a strong wood or metal frame to provide added support.
  - A room: Properly insulate any refrigerant tubing run inside a room to prevent "sweating" that can cause dripping and water damage to wall and floors.
  - Damp or uneven areas: Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the unit to prevent water damage and abnormal vibration.
  - An area with high winds: Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable wind baffle.
  - A snowy area: Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow protection hood.
- If the remote sensors are not used with this controller, then do not install this controller…
  - in a room where there is no thermostat.
  - where the unit is exposed to direct sunshine or direct light.
  - where the unit will be in close proximity to a heat source.
  - where hot/cold air from the outdoors, or a draft from elsewhere (such as air vents, diffusers or grilles) can affect air circulation.
  - in areas with poor air circulation and ventilation.
- Do not install the unit in the following places. Doing so can result in an explosion, fire, damage, corrosion, or product failure.
  - Explosive or flammable atmosphere.
  - Where fire, oil, steam, or powder can directly enter the unit, such as in close proximity or directly above a kitchen stove.
  - Where oil (including machinery oil) may be present.
  - Where corrosive gases such as chlorine, bromine, or sulfide can accumulate, such as near a hot tub or hot spring.
  - Where dense, salt-laden mist is heavy, such as in coastal regions.
  - Where the air quality is of high acidity.
  - Where harmful gases can be generated from decomposition.
- Do not position the condensate pipe for the indoor unit near any sanitary sewers where corrosive gases may be present. If you do, toxic gases can seep into breathable air spaces and can cause respiratory issues. If the condensate pipe is installed incorrectly, water leakage and damage to the ceiling, floor, furniture, or other possessions may result. If condensate piping becomes clogged, moisture can back up and can drip from the indoor unit. Do not install the indoor unit where such dripping can cause moisture damage or uneven locations: Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the unit to prevent water damage and abnormal vibration.
- Before performing any brazing work, be sure that there are no flammable materials or open flames nearby.
- Perform a test run to ensure normal operation. Safety guards, shields, barriers, covers, and protective devices must be in place while the compressor/unit is operating. During the test run, keep fingers and clothing away from any moving parts.
- Clean up the site when finished, remembering to check that no metal scraps or bits of wiring have been left inside the unit being installed.
- During transportation, do not allow the backrest of the forklift make contact with the unit, otherwise, it may cause damage to the heat exchanger and also may cause injury when stopped or started suddenly.
- Remove gas inside the closing pipe when the brazing work is performed. If the brazing filler metal is melted with remaining gas inside, the pipes will be blown off and it may cause injury.
- Be sure to use nitrogen gas for an airtight test. If other gases such as oxygen gas, acetylene gas or fluorocarbon gas are accidentally used, it may cause explosion or gas intoxication.

After installation work for the system has been completed, explain the "Safety Precautions," the proper use and maintenance of the unit to the customer according to the information in all manuals that came with the system. All manuals and warranty information must be given to the user or left near the Indoor Unit.

Refrigerant Precautions

⚠ WARNING	To reduce the risk of serious injury or death, the following refrigerant precautions must be followed.

- As originally manufactured, this unit contains refrigerant installed by Johnson Controls. Johnson Controls uses only refrigerants that have been approved for use in the unit's intended home country or market. Johnson Controls distributors similarly are only authorized to provide refrigerants that have been approved for use in the countries or markets they serve. The refrigerant used in this unit is identified on the unit's faceplate and/or in the associated manuals. Any additions of refrigerant into this unit must comply with the country's requirements with regard to refrigerant use and should be obtained from Johnson Controls distributors. Use of any non-approved refrigerant substitutes will void the warranty and will increase the potential risk of injury or death.
- If installed in a small room, take measures to prevent the refrigerant from exceeding the maximum allowable concentration in the event that refrigerant gases should escape. The installation should meet the requirements in ASHRAE Standards 15 and 34. If refrigerant gas has leaked during the installation work, ventilate the room immediately.
- Check the design pressure for this product is 601 psi (4.15MPa). The pressure of the refrigerant R410A is 1.4 times higher than that of the refrigerant R22. Therefore, the refrigerant piping for R410A shall be thicker than that for R22. Make sure to use the specified refrigerant piping. If not, the refrigerant piping may rapture due to an excessive refrigerant pressure. Besides, pay attention to the piping thickness when using copper refrigerant piping. The thickness of copper refrigerant piping differs depending on its material.
- When R410A is used, the refrigerant oil tends to be affected by foreign matters such as moisture, oxide film, (or fat). Perform the installation work with care to prevent moisture, dust, or different refrigerant from entering the refrigerant cycle. Foreign matter can be introduced into the cycle to such parts as the expansion valve causing operational issues.
- To avoid the possibility of different refrigerant or refrigerant oil being introduced into the cycle, the sizes of the charging connections have been changed from R407C type and R22 type. It is necessary to verify the appropriate tools are on hand before performing installation work.
- Use refrigerant pipes and joints which are approved for use with R410A.
- A compressor/unit comprises a pressurized system. Never loosen threaded joints while the system is under pressure and never open pressurized system parts.
- Before installation is complete, make sure that the refrigerant leak test has been performed. If refrigerant gases escape into the air, turn OFF the main switch, extinguish any open flames and contact your service contractor. Refrigerant (Fluorocarbon) for this unit is odorless. If the refrigerant should leak and come into contact with open flames, toxic gas could be generated. Also, because the fluorocarbons are heavier than air, they settle to the floor, which could cause asphyxiation.
- When installing the unit, and connecting refrigerant piping, keep all piping runs as short as possible, and make sure to securely connect the refrigerant piping before the compressor starts operating. If the refrigerant piping is not connected properly and the compressor starts with the stop valve opened, air may be pulled into the system and the refrigerant cycle will become subjected to extremely high pressure, which can cause an explosion or fire.
- Tighten the flare nut with a torque wrench in the specified manner. Do not apply excessive force to the flare nut when tightening. If you do, the flare nut can crack and refrigerant leakage may occur.
- When maintaining, relocating, and disposing of the unit, dismantle the refrigerant piping after the compressor stops.
- When pipes are removed out from under the piping cover, after the insulation work is completed, cover the gap between the piping cover and pipes with additional insulating material (field-supplied). If the gap is not covered, the unit may be damaged if snow, rain water or small animals enter the unit.
- Do not apply excessive force to the stop valve when opening. If damaged, the stop valve could come apart due to refrigerant pressure. At the test run, fully open the gas and liquid valves, otherwise, these devices will be damaged. (It is closed before shipment.)
- If the setup for outdoor units is incorrect, it may cause flowback of the refrigerant and result in failure of the outdoor unit.
- The refrigerant system may be damaged if the slope of the piping connection kit exceeds $\pm 15^{\circ}$.

Electrical Precautions

⚠ WARNING	Take the following precautions to reduce the risk of electric shock, fire or explosion resulting in serious injury or death.

- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause serious injury or death.
- Perform all electrical work in strict accordance with this installation and maintenance manual and all the relevant regulatory standards.
- Before servicing, shut off and tag all disconnect switches. Never assume electrical power is disconnected. Always verify with a meter.
- Only use electrical protection equipment and tools suited for this installation.
- Insulate a wired controller against moisture and temperature extremes.
- Use specified cables between units.
- The installed air conditioner may not function normally in the following instances:
  - If electrical power for the new air conditioner is supplied from the same transformer as the external equipment* referred to below.
  - If the power supply wiring for this external equipment* and the new air conditioner unit are located in close proximity to each other.

    external equipment*: (Example): A lift, container crane, rectifier for electric railway, inverter power device, arc furnace, electric furnace, large-sized induction motor and large-sized switch.

    Regarding the cases mentioned above, surge voltage may be inducted into the power supply cables for the packaged air conditioner due to a rapid change in power consumption of the device and an activation of a switch.
    Check field regulations and standards before performing electrical work in order to protect the power supply for the new air conditioner unit.
- Communication cable must be a minimum of AWG18 (0.82mm^2), 2-Conductor, Stranded Copper. Shielded cable must be used for applications and routing in areas of high EMI and other sources of potentially excessive electrical noise to reduce the potential for communication errors. When shielded cabling is applied, proper bonding and termination of the cable shield is required as per Johnson Controls guidelines. Plenum and riser ratings for communication cables must be considered per application and local code requirements.
- The polarity of the input terminals is important, so be sure to match the polarity when using contacts that have polarity.
- Use a dedicated circuit for the air conditioner at the unit's rated voltage.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause serious injury or death.
- Before installing the controller or remote devices, ensure that the indoor and outdoor unit operation has been stopped. Further, be sure to wait at least five minutes before turning off the main power switch to the indoor or outdoor units. Otherwise, water leakage or electrical breakdown may result.
- Do not open the service cover or access panel to the indoor or outdoor units without turning OFF the main power supply. Before connecting or servicing the controller or cables to indoor or outdoor units, shut off and tag all disconnect switches. Never assume electrical power is disconnected. Always verify with a meter.
- This equipment can be installed with a Ground Fault Circuit Breaker (GFCI), which is a recognized measure for added protection to a properly grounded unit. Install appropriate sized breakers / fuses / overcurrent protection switches, and wiring in accordance with local, state and NEC codes and requirements. The equipment installer is responsible for understanding and abiding by applicable codes and requirements.

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1. General Information (Features)

VRF Air Conditioners

Johnson Controls proudly introduces new Variable Refrigerant Flow (VRF) air conditioners, a highly-efficient and reliable air-conditioning system. Recently, increased numbers of buildings are requiring "intelligent" facilities that include communication networks, office automation, and a comfortable environment. In particular, a comfortable environment is becoming more of a year-around requirement in office buildings. The VRF multi-split system air conditioner meets these requirements. The proven combination of the scroll compressor and inverter provides the best air conditioning for small and medium office buildings.

■ VRF System

Johnson Controls has developed the VRF system with its customers in mind.
This system, allows the interconnection of indoor units for all our VRF air conditioners.

This system provides the consumer with greater flexibility for installation, which means that the air-conditioning systems will integrate better within complex facility structures.

■ 4-Way Cassette Models

(H,Y,C)IC4008B21S, (H,Y,C)IC4012B21S, (H,Y,C)IC4015B21S, (H,Y,C)IC4018B21S, (H,Y,C)IC4024B21S, (H,Y,C)IC4030B21S, (H,Y,C)IC4036B21S, (H,Y,C)IC4048B21S

● Wide Range Line-up

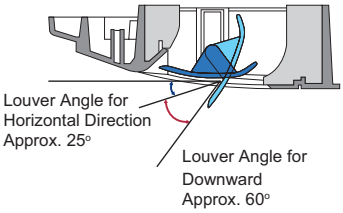
Table 1.1 Indoor Unit Type List

Indoor Unit Type		Capacity (MBH)							
		8	12	15	18	24	30	36	48
4-Way Cassette	(H,Y,C)IC4_B21S	○	○	○	○	○	○	○	○

○ : Available

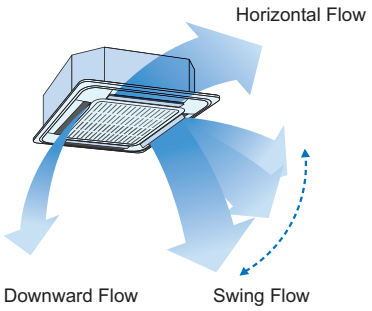
● Comfortable Function

(1) Airflow can be controlled by adjusting four louvers individually.



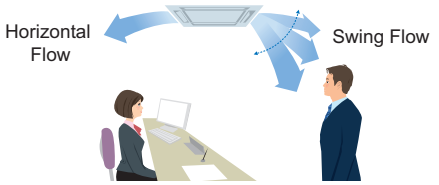
A comfortable air-conditioned environment can be provided by various louver settings depending on the situation.
(The setting is available only when combined with the wired controller.)

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.

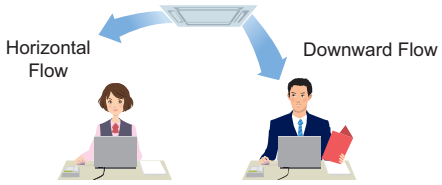


The airflow direction can be selected according to the situation.

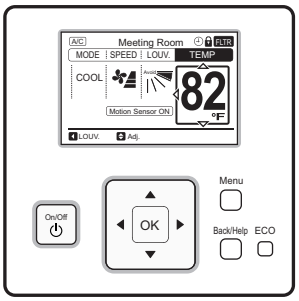
Example 1: At Front Desk



Example 2: At Office

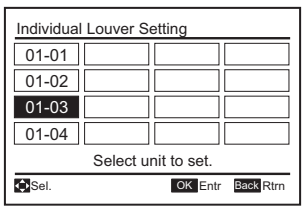


(2) Easy setting of each louver airflow direction using a wired controller.



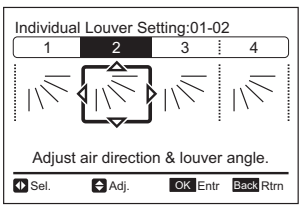
Wired Controller
CIW01

Indoor Unit Selection



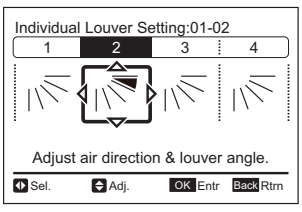
Individual louver setting is possible with one wired controller for multiple indoor units.

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

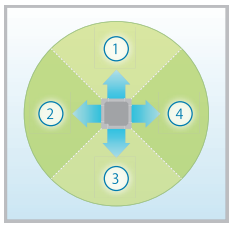
(1) A decorative panel with a motion sensor can intelligently detect human activity and furniture heat signatures.

Air conditioning comfort is improved with four motion sensors and one heat-detecting sensor equipped with the decorative 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 human and objects.

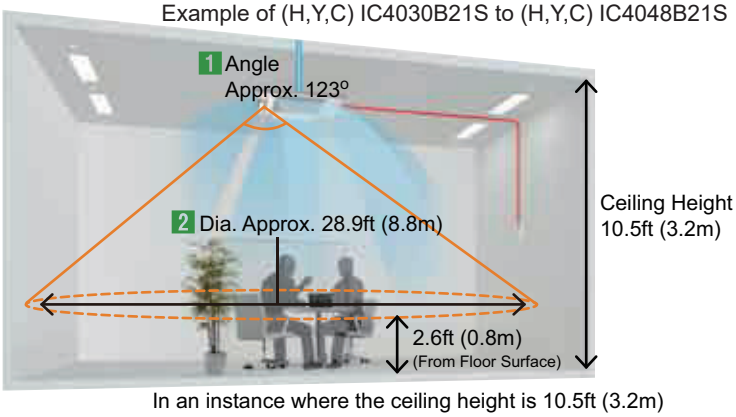
Detecting Area of Motion Sensors
(Viewed from Ceiling)



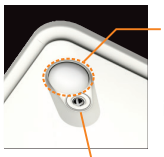
The motion sensors’ detecting area is divided into four separate areas as shown above.

Detecting Area

Example of (H,Y,C) IC4030B21S to (H,Y,C) IC4048B21S



In an instance where the ceiling height is 10.5ft (3.2m)



Motion Sensor

Four motion sensors are installed in this area.

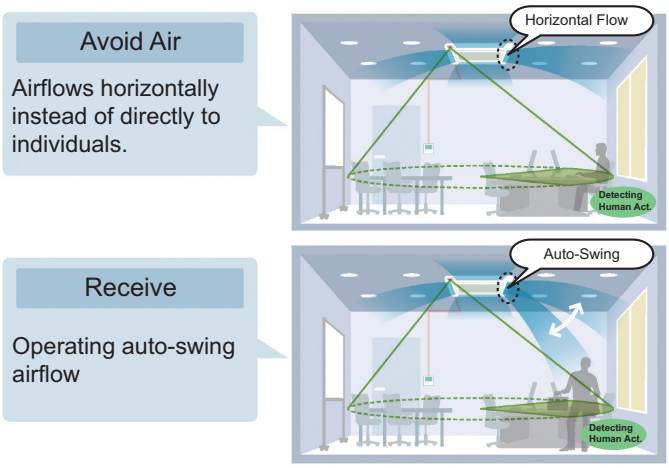
Radiation Sensor

Model	(H,Y,C)IC4008B21S to (H,Y,C)IC4024B21S	(H,Y,C)IC4030B21S to (H,Y,C)IC4048B21S
Detecting Angle	Approx. 123°	
Detecting Area	When the ceiling height is 8.9ft (2.7m). ● Detecting Diameter Approx. 23ft (7m) (2.6ft (0.8m) from floor surface)	When the ceiling height is 10.5ft (3.2m). ● Detecting Diameter Approx. 28.9ft (8.8m) (2.6ft (0.8m) from floor surface)

NOTE:

1. The motion sensor detects human activity. However, if someone is in a room with very little activity, the motion sensors may not detect motion.
2. 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.
3. The motion sensors may detect no activity if the indoor unit is installed on a high ceiling of 13.1 ft. (4m) or more, or fingerprints or contaminants are on the motion sensors’ lenses, even if someone is in a room.

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

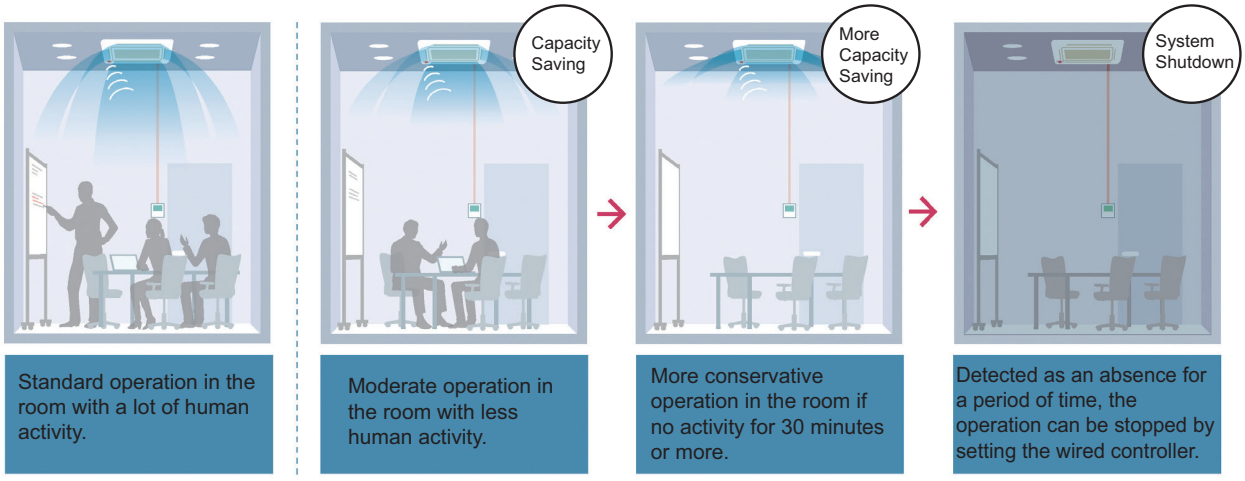


Four motion sensors divide air conditioning space into four areas to detect human activity in each area separately.

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 controller.

NOTE:
When the motion sensor detects no activity, the airflow direction is adjusted by the user setting directions on the wired 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 controller (CIW01). When connecting with another wired controller, a communication cable between each wired controller is required. Without a communication cable, the motion sensor function is not supported.
- 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 controller. In addition, after starting the operation, setting a stop time can be changed by the wired controller.

● Radiation Sensor

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

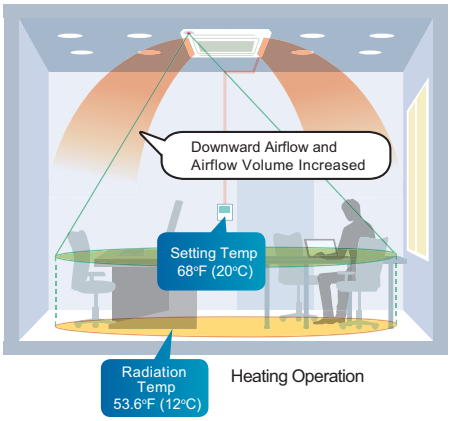
By setting “Floor HEAT Control” in an instance where there is a big difference between radiation temperature and setting temperature, the operation is as below:

1. Warm air is discharged downward to increase airflow volume.*1)
2. 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.

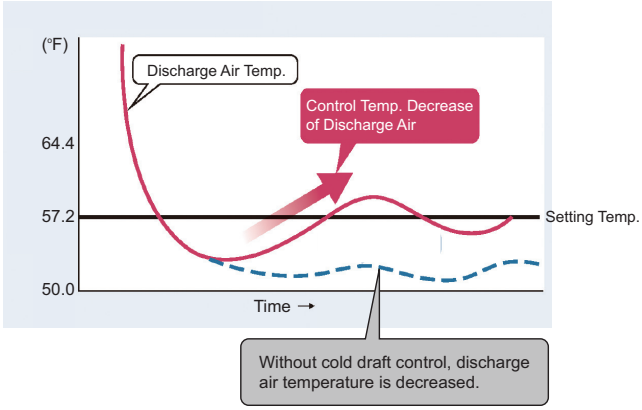
NOTICE

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



● Discharge Air Thermistor

The Discharge Air Thermistor prevents a perception of a cold draft at cooling operation.

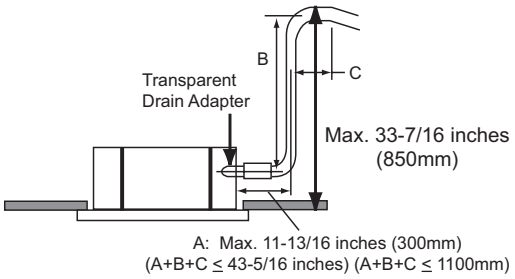


NOTE:

- Set “HIGH”, “MED” and “LOW” airflow volume in advance on the wired controller. Depending on the setting, the discharged air temperature is controlled by adjusting the air conditioning capacity. (Discharged air temperature is increased in order of “HIGH”, “MED”, “LOW”.)
- This function may not be effective depending on the unit’s operating condition, for example if multiple indoor units are operating at the same time.
- Depending on the cold draft control setting, it may take longer to cool the entire room.

● Flexible Design

(1) Equipped with a condensate mechanism with high pump lift



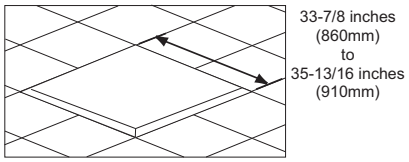
A condensate pump lift of up to 33-1/2 inches (838mm) from the false ceiling surface is achieved by employing a condensate mechanism with a high pump lift.

(2) Attractive appearance with shutter function.

The shutter function conceals the air outlet with louvers when the operation is stopped. The louvers cover the air outlet horizontally providing an attractive appearance.

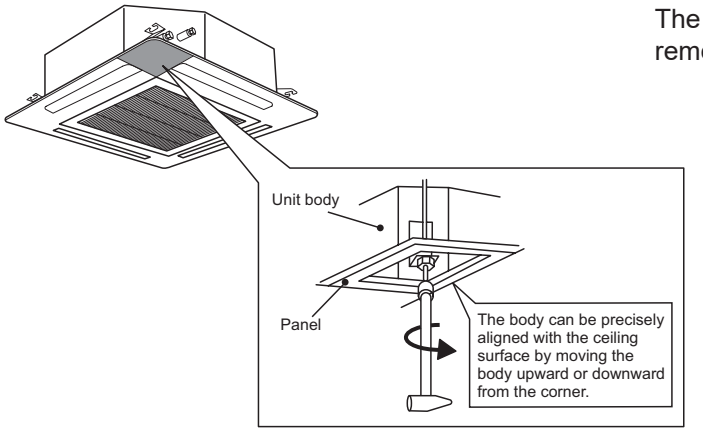
● Easy Installation

(1) Small ceiling opening for installation and removal.



The ceiling opening size has a range of 33-7/8 inches (860mm) to 35-13/16 inches (910mm), so a ceiling joint cut will be easier.

(2) Unit body height easily adjustable in the corner.



The height of the unit can be adjusted easily without removing the panel from four corners.

(3) Simplified panel wiring
The panel wiring connector is located inside the air inlet grille.
No need to open the electrical box cover for panel wiring work.

(4) Ability to easily install the air grille direction at a 90° position
Suspension bolt pitch is 29-15/16 inches × 29-15/16 inches (760mm × 760mm). No need to change the bolt position for matching the unit direction with a pipe connection position. Grille direction can be selected in four ways. This results in a pleasing and flexible layout of multiple units' installation.

(5) Improvement of piping workability
Workability is improved by a different location of refrigerant piping and condensate piping.

● Easy Maintenance

(1) Easy to check condensate condition and condensate work
A condensate plug is equipped as part of the air inlet grille to simplify checking of condensate condition and emergency condensate work by just removing the air inlet grille. In addition, the condensate plug diameter is 7/8 inch (22mm) to enhance maintenance effectiveness.

(2) Clean and Easy-Care
The form of louver enables smooth blowing and prevents smudging and stains on the ceiling surface.
Underside of louver can be easily cleaned.

2. 4-Way Cassette

2.1 Unit Nomenclature

Model Descriptions

Example

H I C4 008 B 2 1 S

Nomenclature Description

H = Hitachi Brand Y = York Brand C = Coleman Brand	H
Indoor Unit	I
Indoor Unit Type C4 = 4-Way Cassette	C4
Capacity (MBH)	008
Refrigerant Type B = R410A	B
Power Supply 2 = 208/230Volts - 1Phase - 60Hz	2
1 = 1st Generation	1
S = Standard Type	S

2.2 Line-up

Type		Capacity		Model
		RT	MBH	
Indoor Unit	4-Way Cassette	0.7	8	(H,Y,C)IC4008B21S
		1.0	12	(H,Y,C)IC4012B21S
		1.3	15	(H,Y,C)IC4015B21S
		1.5	18	(H,Y,C)IC4018B21S
		2.0	24	(H,Y,C)IC4024B21S
		2.5	30	(H,Y,C)IC4030B21S
		3.0	36	(H,Y,C)IC4036B21S
		4.0	48	(H,Y,C)IC4048B21S

2.3 General Data

Indoor Unit Type		4-Way Cassette			
Model		(H,Y,C)IC4008B21S	(H,Y,C)IC4012B21S	(H,Y,C)IC4015B21S	(H,Y,C)IC4018B21S
Indoor Unit Power Supply		AC 1Phase, 208/230V, 60Hz			
Nominal Cooling Capacity [1]	Btu/h	8,000	12,000	15,000	18,000
	(kW)	(2.3)	(3.5)	(4.4)	(5.3)
Nominal Heating Capacity [1]	Btu/h	9,000	13,500	17,000	20,000
	(kW)	(2.6)	(4.0)	(5.0)	(5.8)
Sound Pressure Level [2] (Overall A Scale) (Hi2-Hi-Me-Lo)	dB	33-30-28-27	35-31-30-27	37-32-30-27	42-36-32-28
Outer Dimensions					
Height	in. (mm)	9-3/4 (248)	9-3/4 (248)	9-3/4 (248)	9-3/4 (248)
Width	in. (mm)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)
Depth	in. (mm)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)
Net Weight	lbs. (kg)	44 (20)	46 (21)	46 (21)	48 (22)
Refrigerant		R410A			
Indoor Fan					
Airflow Rate	cfm	530-459-388-318	741-600-494-388	777-600-494-388	953-777-635-494
(Hi2-Hi-Me-Lo)	(m^3/min.)	(15-13-11-9)	(21-17-14-11)	(22-17-14-11)	(27-22-18-14)
External Pressure					
	in.W.G	0.0	0.0	0.0	0.0
	(Pa)	(0)	(0)	(0)	(0)
Motor Nominal Output	W	57	57	57	57
Connections					
Refrigerant Piping		Flare-Nut Connection (with Flare Nuts)			
Liquid Line	in. (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)
Gas Line	in. (mm)	1/2 (12.70)	1/2 (12.70)	1/2 (12.70)	5/8 (15.88)
Condensate Drain		VP25	VP25	VP25	VP25
OD	in. (mm)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)
ID	in. (mm)	1 (25)	1 (25)	1 (25)	1 (25)

1. Nominal capacity is based on combinations within the VRF system and the following conditions:

   Cooling Operation Conditions
   - Indoor Air Inlet Temperature: 80°F DB (26.7°C DB)
     67°F WB (19.4°C WB)
   - Outdoor Air Inlet Temperature: 95°F DB (35.0°C DB)

   Heating Operation Conditions
   - Indoor Air Inlet Temperature: 70°F DB (21.1°C DB)
   - Outdoor Air Inlet Temperature: 47°F DB (8.3°C DB)
     43°F WB (6.1°C WB)
   - Piping Length: 24 ft. 7-3/16 in. (7.5m)
   - Piping Lift: 0 ft. (0m)

2. Sound pressure level is based on following conditions.
   4.9 ft. (1.5m) beneath the unit.
   The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

Indoor Unit Type		4-Way Cassette			
Model		(H,Y,C)IC4024B21S	(H,Y,C)IC4030B21S	(H,Y,C)IC4036B21S	(H,Y,C)IC4048B21S
Indoor Unit Power Supply		AC 1Phase, 208/230V, 60Hz			
Nominal Cooling Capacity [1]	Btu/h	24,000	30,000	36,000	48,000
	(kW)	(7.0)	(8.8)	(10.5)	(14.1)
Nominal Heating Capacity [1]	Btu/h	27,000	34,000	40,000	54,000
	(kW)	(7.9)	(10.0)	(11.7)	(15.8)
Sound Pressure Level [2] (Overall A Scale) (Hi2-Hi-Me-Lo)	dB	42-36-32-28	48-43-39-33	48-45-40-35	48-46-41-37
Outer Dimensions					
Height	in. (mm)	11-3/4 (298)	11-3/4 (298)	11-3/4 (298)	11-3/4 (298)
Width	in. (mm)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)
Depth	in. (mm)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)
Net Weight	lbs. (kg)	57 (26)	57 (26)	57 (26)	57 (26)
Refrigerant		R410A			
Indoor Fan					
Airflow Rate	cfm	953-812-635-494	1306-1094-847-706	1306-1165-918-741	1306-1236-989-777
(Hi2-Hi-Me-Lo)	(m^3/min.)	(27-23-18-14)	(37-31-24-20)	(37-33-26-21)	(37-35-28-22)
External Pressure					
	in.W.G	0.0	0.0	0.0	0.0
	(Pa)	(0)	(0)	(0)	(0)
Motor Nominal Output	W	57	127	127	127
Connections					
Refrigerant Piping		Flare-Nut Connection (with Flare Nuts)			
Liquid Line	in. (mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
Gas Line	in. (mm)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Condensate Drain		VP25	VP25	VP25	VP25
OD	in. (mm)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)
ID	in. (mm)	1 (25)	1 (25)	1 (25)	1 (25)

1. Nominal capacity is based on combinations within the VRF system and the following conditions:

   Cooling Operation Conditions
   - Indoor Air Inlet Temperature: 80°F DB (26.7°C DB)
     67°F WB (19.4°C WB)
   - Outdoor Air Inlet Temperature: 95°F DB (35.0°C DB)

   Heating Operation Conditions
   - Indoor Air Inlet Temperature: 70°F DB (21.1°C DB)
   - Outdoor Air Inlet Temperature: 47°F DB (8.3°C DB)
     43°F WB (6.1°C WB)
   - Piping Length: 24 ft. 7-3/16 in. (7.5m)
   - Piping Lift: 0 ft. (0m)

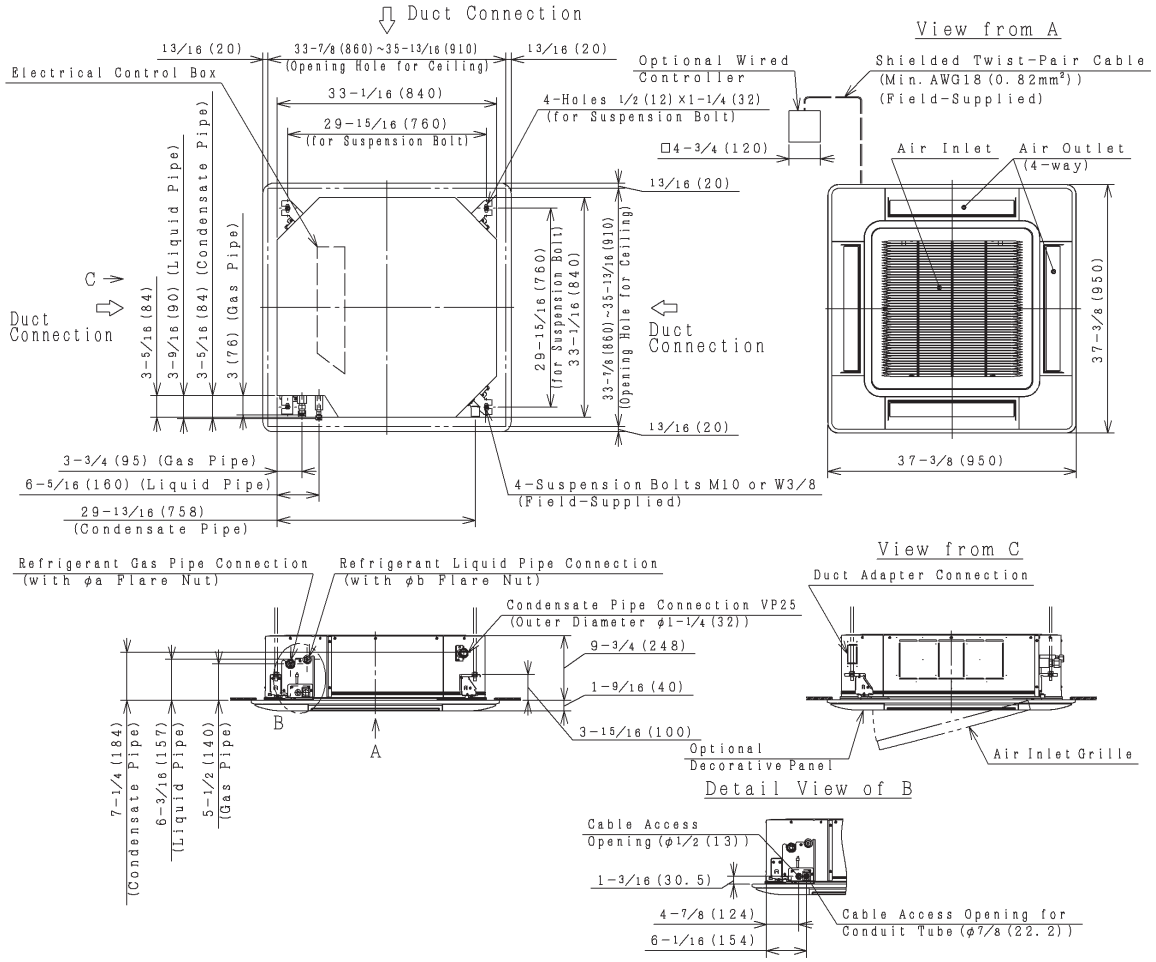
2. Sound pressure level is based on following conditions.
   4.9 ft. (1.5m) beneath the unit.
   The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

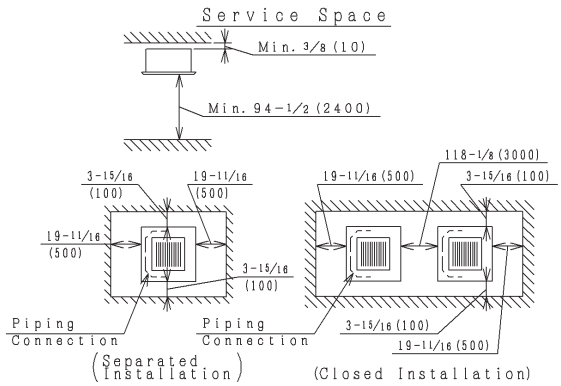
Adaptable Panel Model		P-AP160NA2 (without Motion and Radiation Sensors)	P-AP160NAE1 (with Motion and Radiation Sensors)
Color		Neutral White	
Outer Dimensions			
Height	in. (mm)	1-9/16 (40)	1-9/16 (40)
Width	in. (mm)	37-3/8 (950)	37-3/8 (950)
Depth	in. (mm)	37-3/8 (950)	37-3/8 (950)
Net Weight	lbs. (kg)	14 (6.5)	14 (6.5)

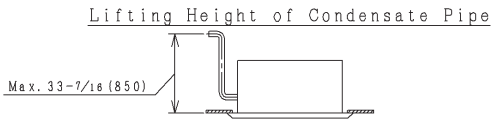
2.4 Dimensional Data

Models: (H,Y,C)IC4008B21S, (H,Y,C)IC4012B21S, (H,Y,C)IC4015B21S and (H,Y,C)IC4018B21S
with Decorative Panel P-AP160NA2

Unit: inch (mm)





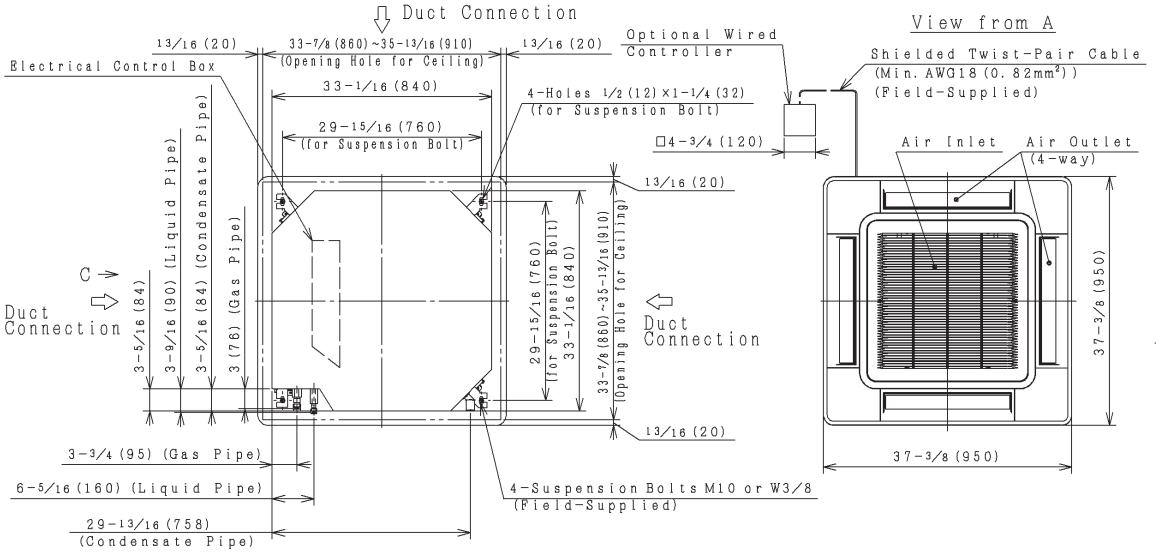


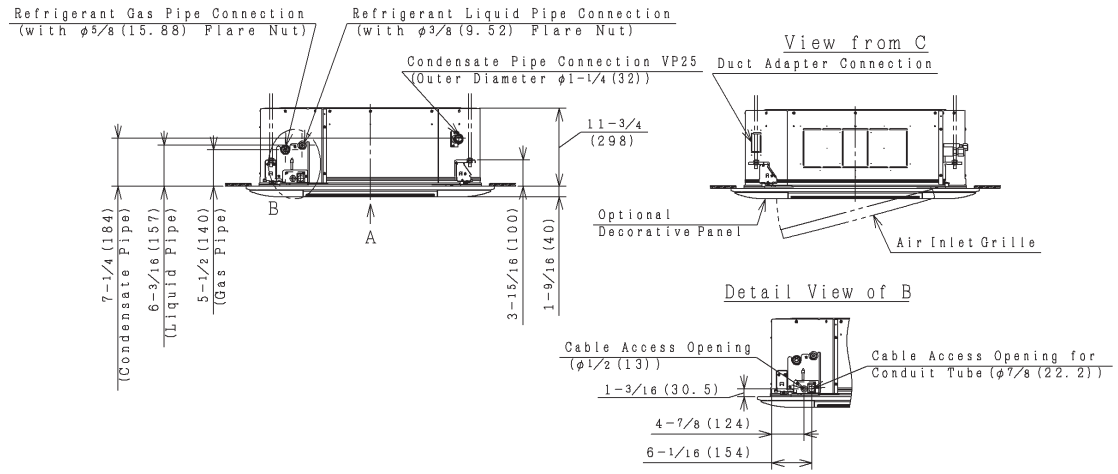
Model \ Dimension	a	b
(H,Y,C)IC4008B21S	1/2 (12.7)	1/4 (6.35)
(H,Y,C)IC4012B21S	1/2 (12.7)	1/4 (6.35)
(H,Y,C)IC4015B21S	1/2 (12.7)	1/4 (6.35)
(H,Y,C)IC4018B21S	5/8 (15.88)	3/8 (9.52)

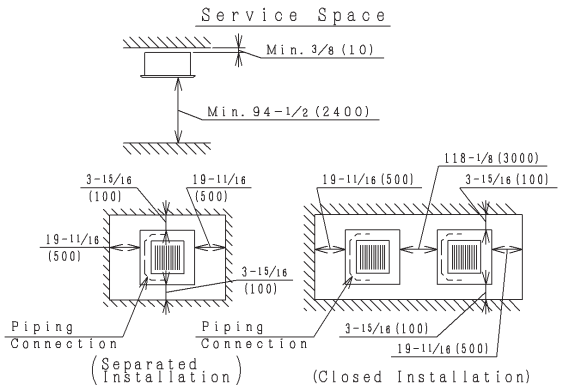
NOTE:
Distance between the wall and decorative panel edge must be a min. 59-1/16 inches (1500mm) to prevent short circuiting.

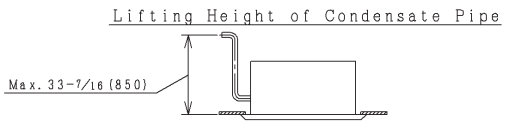
Models: (H,Y,C)IC4024B21S, (H,Y,C)IC4030B21S, (H,Y,C)IC4036B21S and (H,Y,C)IC4048B21S
with Decorative Panel P-AP160NA2

Unit: inch (mm)





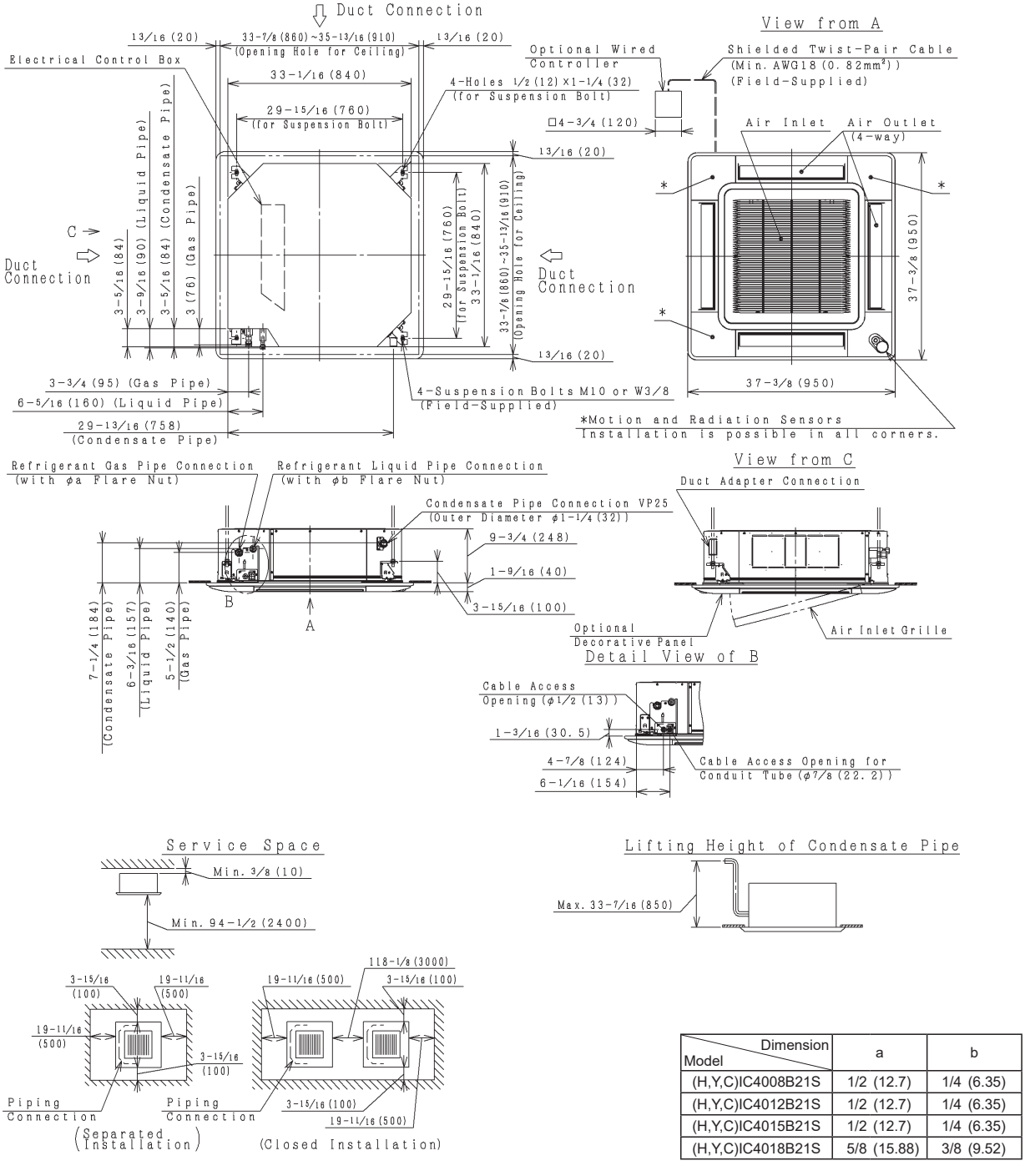




NOTE:
Distance between the wall and decorative panel edge must be a min. 59-1/16 inches (1500mm) to prevent short circuiting.

Models: (H,Y,C)IC4008B21S, (H,Y,C)IC4012B21S, (H,Y,C)IC4015B21S and (H,Y,C)IC4018B21S
with Decorative Panel P-AP160NAE1

Unit: inch (mm)



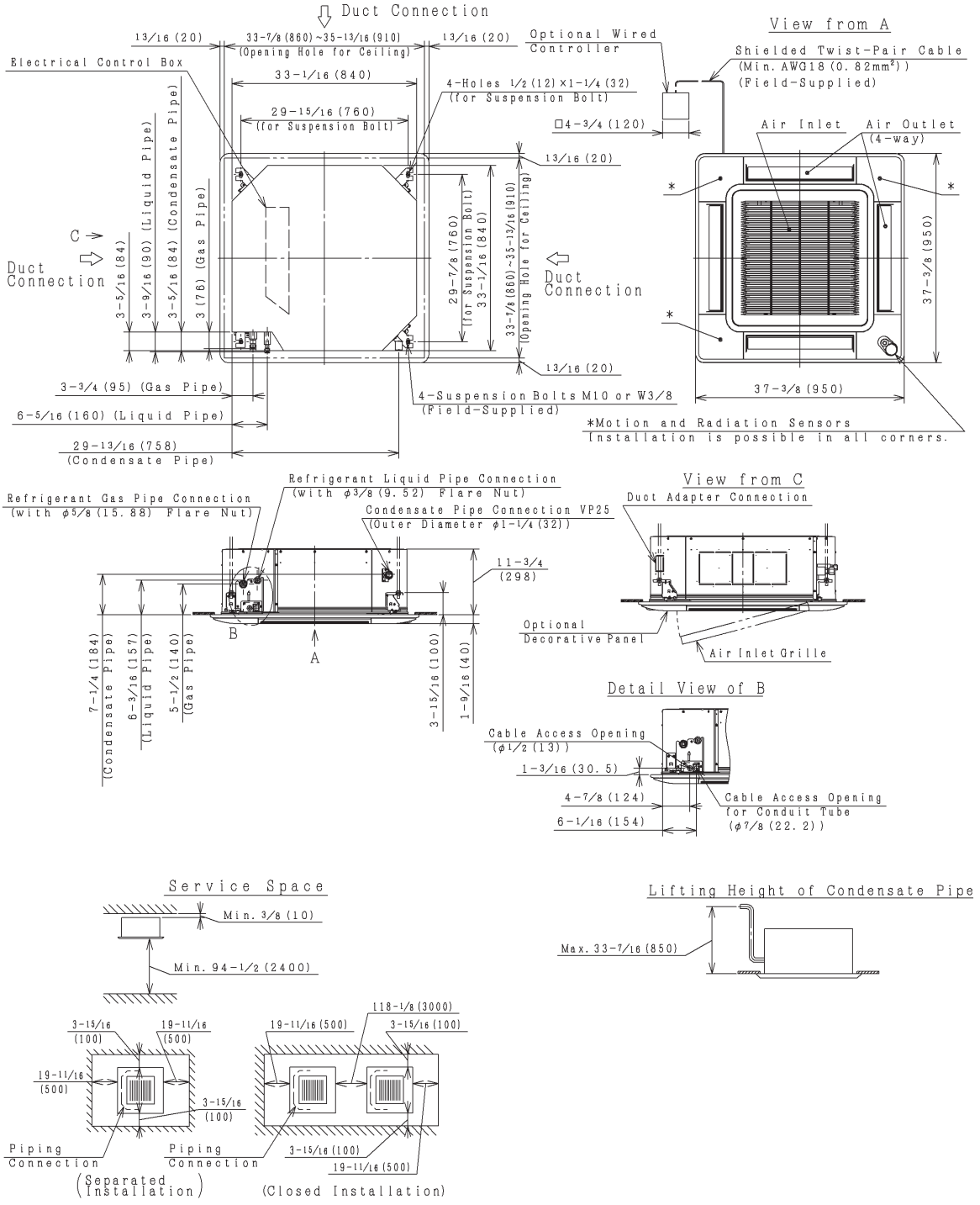
Model \ Dimension	a	b
(H,Y,C)IC4008B21S	1/2 (12.7)	1/4 (6.35)
(H,Y,C)IC4012B21S	1/2 (12.7)	1/4 (6.35)
(H,Y,C)IC4015B21S	1/2 (12.7)	1/4 (6.35)
(H,Y,C)IC4018B21S	5/8 (15.88)	3/8 (9.52)

NOTES:

1. Distance between the wall and decorative panel edge must be a min. 59-1/16 inches (1500mm) to prevent short circuiting.
2. In case the position of corner panel with motion and radiation sensors is changed from the initial position, then the setting on the wired controller must be changed.

Models: (H,Y,C)IC4024B21S, (H,Y,C)IC4030B21S, (H,Y,C)IC4036B21S and (H,Y,C)IC4048B21S
with Decorative Panel P-AP160NAE1

Unit: inch (mm)

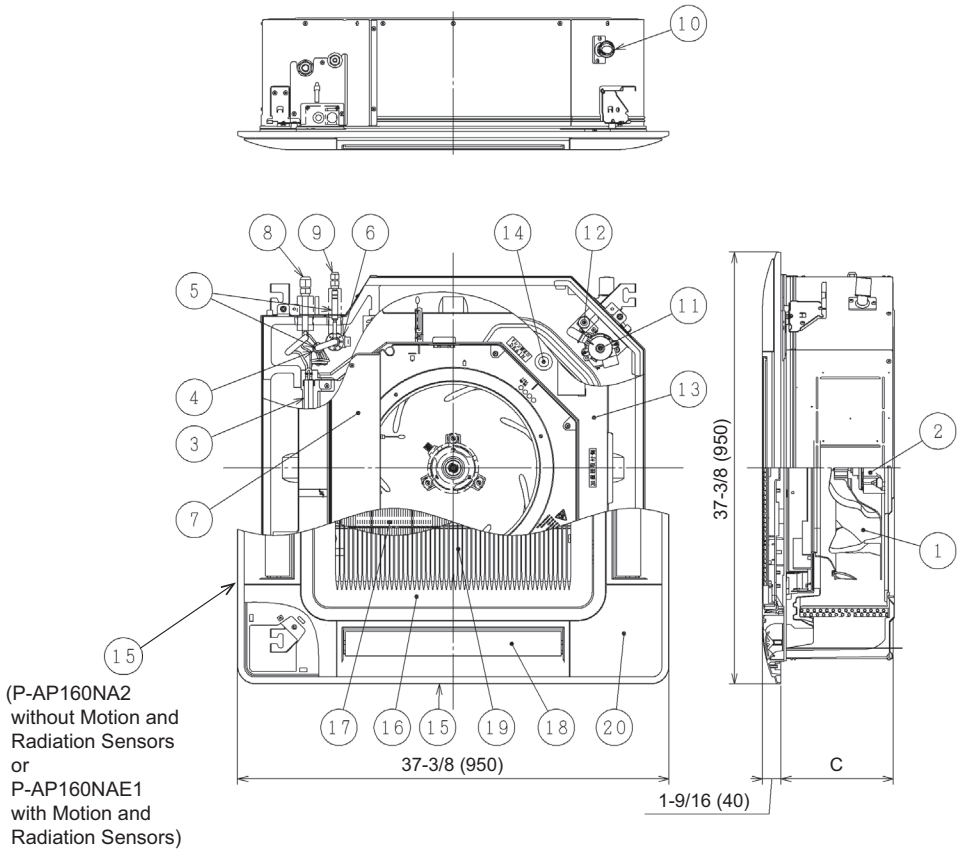


NOTES:

1. Distance between the wall and decorative panel edge must be a min. 59-1/16 inches (1500mm) to prevent short circuiting.
2. In case the position of corner panel with motion and radiation sensors is changed from the initial position, then the setting on the wired controller must be changed.

2.5 Structure

Unit: inch (mm)



No.	Part Name	Remarks
1	Fan	
2	Fan Motor	DC
3	Heat Exchanger	
4	Distributor	
5	Strainer	
6	Electronic Expansion Valve	
7	Electrical Control Box	
8	Refrigerant Gas Pipe Connection	with ϕa Flare Nut
9	Refrigerant Liquid Pipe Connection	with ϕb Flare Nut
10	Condensate Pipe Connection	VP25 (OD ϕ1-1/4 (32))
11	Drain-up Mechanism	
12	Float Switch	
13	Condensate Pan	
14	Condensate Rubber Plug	
15	Decorative Panel (P-AP160NA2, P-AP160NAE1)	Optional
16	Air Inlet Grille	
17	Air Filter	
18	Air Outlet	
19	Air Inlet	
20	Corner Cover	(P-AP160NA2) (P-AP160NAE1)

Model	a	b	c
(H,Y,C)IC4008B21S	1/2 (12.7)	1/4 (6.35)	9-3/4 (248)
(H,Y,C)IC4012B21S	1/2 (12.7)	1/4 (6.35)	9-3/4 (248)
(H,Y,C)IC4015B21S	1/2 (12.7)	1/4 (6.35)	9-3/4 (248)
(H,Y,C)IC4018B21S	5/8 (15.88)	3/8 (9.52)	9-3/4 (248)
(H,Y,C)IC4024B21S	5/8 (15.88)	3/8 (9.52)	11-3/4 (298)
(H,Y,C)IC4030B21S	5/8 (15.88)	3/8 (9.52)	11-3/4 (298)
(H,Y,C)IC4036B21S	5/8 (15.88)	3/8 (9.52)	11-3/4 (298)
(H,Y,C)IC4048B21S	5/8 (15.88)	3/8 (9.52)	11-3/4 (298)

2.6 Component Data

Indoor Heat Exchanger and Fan

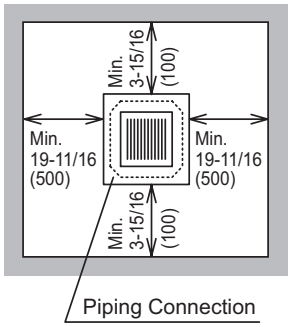
Model			(H,Y,C)IC4008B21S	(H,Y,C)IC4012B21S	(H,Y,C)IC4015B21S	(H,Y,C)IC4018B21S
Heat Exchanger Type			Multi-Pass Cross Finned Tube			
Tube	Material		Copper Tube			
	Outer Diameter	ϕ in. (mm)	3/16 (5.0)	3/16 (5.0)	3/16 (5.0)	3/16 (5.0)
	Rows		2	2	2	3
	Number of Tube/Coil		28	28	28	42
Fin	Material		Aluminum			
	Pitch	in. (mm)	0.051 (1.3)	0.051 (1.3)	0.051 (1.3)	0.051 (1.3)
Maximum Operating Pressure		psi (MPa)	601 (4.15)	601 (4.15)	601 (4.15)	601 (4.15)
Total Face Area		ft^2 (m^2)	81.8 (7.6)	114.1 (10.6)	114.1 (10.6)	170.1 (15.8)
Number of Coil/Unit			1	1	1	1
Indoor Fan			Multi-Blade Centrifugal Fan			
Number/Unit			1	1	1	1
Outer Diameter		ϕ in. (mm)	19-5/16 (490)	19-5/16 (490)	19-5/16 (490)	19-5/16 (490)
Nominal Airflow (Hi2-Hi-Me-Lo)		cfm (m^3/min.)	530-459-388-318 (15-13-11-9)	741-600-494-388 (21-17-14-11)	777-600-494-388 (22-17-14-11)	953-777-635-494 (27-22-18-14)
Indoor Fan Motor			Drip-Proof Type Enclosure			
Starting Method			DC Motor			
Nominal Output		W	57	57	57	57
Quantity			1	1	1	1
Insulation Class			E	E	E	E

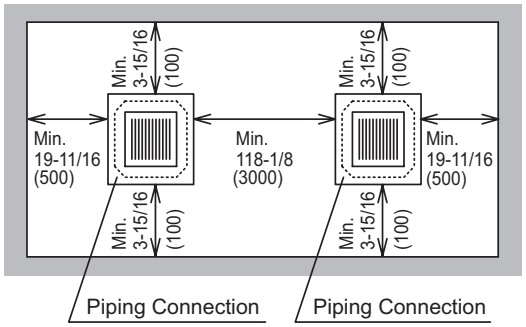
Model			(H,Y,C)IC4024B21S	(H,Y,C)IC4030B21S	(H,Y,C)IC4036B21S	(H,Y,C)IC4048B21S
Heat Exchanger Type			Multi-Pass Cross Finned Tube			
Tube	Material		Copper Tube			
	Outer Diameter	ϕ in. (mm)	3/16 (5.0)	3/16 (5.0)	3/16 (5.0)	3/16 (5.0)
	Rows		3	3	3	3
	Number of Tube/Coil		54	54	54	54
Fin	Material		Aluminum			
	Pitch	in. (mm)	0.051 (1.3)	0.051 (1.3)	0.051 (1.3)	0.051 (1.3)
Maximum Operating Pressure		psi (MPa)	601 (4.15)	601 (4.15)	601 (4.15)	601 (4.15)
Total Face Area		ft^2 (m^2)	218.5 (20.3)	218.5 (20.3)	218.5 (20.3)	218.5 (20.3)
Number of Coil/Unit			1	1	1	1
Indoor Fan			Multi-Blade Centrifugal Fan			
Number/Unit			1	1	1	1
Outer Diameter		ϕ in. (mm)	19-5/16 (490)	19-5/16 (490)	19-5/16 (490)	19-5/16 (490)
Nominal Airflow (Hi2-Hi-Me-Lo)		cfm (m^3/min.)	953-812-635-494 (27-23-18-14)	1306-1094-847-706 (37-31-24-20)	1306-1165-918-741 (37-33-26-21)	1306-1236-989-777 (37-35-28-22)
Indoor Fan Motor			Drip-Proof Type Enclosure			
Starting Method			DC Motor			
Nominal Output		W	57	127	127	127
Quantity			1	1	1	1
Insulation Class			E	E	E	E

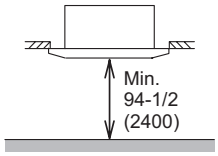
2.7 Operation Space

Models: (H,Y,C)IC4008B21S, (H,Y,C)IC4012B21S, (H,Y,C)IC4015B21S, (H,Y,C)IC4018B21S, (H,Y,C)IC4024B21S, (H,Y,C)IC4030B21S, (H,Y,C)IC4036B21S and (H,Y,C)IC4048B21S

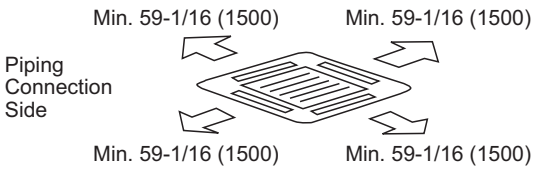
Unit: inch (mm)



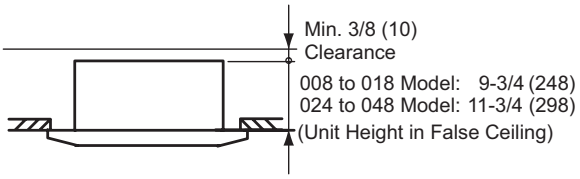


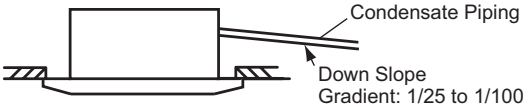


Service Space



Distance from Wall Side





2.8 Sensible Heat Factor (SHF)

Model	SHF *
(H,Y,C)IC4008B21S	0.77
(H,Y,C)IC4012B21S	0.77
(H,Y,C)IC4015B21S	0.78
(H,Y,C)IC4018B21S	0.89
(H,Y,C)IC4024B21S	0.81
(H,Y,C)IC4030B21S	0.83
(H,Y,C)IC4036B21S	0.83
(H,Y,C)IC4048B21S	0.83

* SHF is based on combinations within the VRF system and the following conditions:

Cooling Operation Conditions

Indoor Air Inlet Temperature: 80°F DB (26.7°C DB)
67°F WB (19.4°C WB)
Outdoor Air Inlet Temperature: 95°F DB (35.0°C DB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0 ft. (0m)

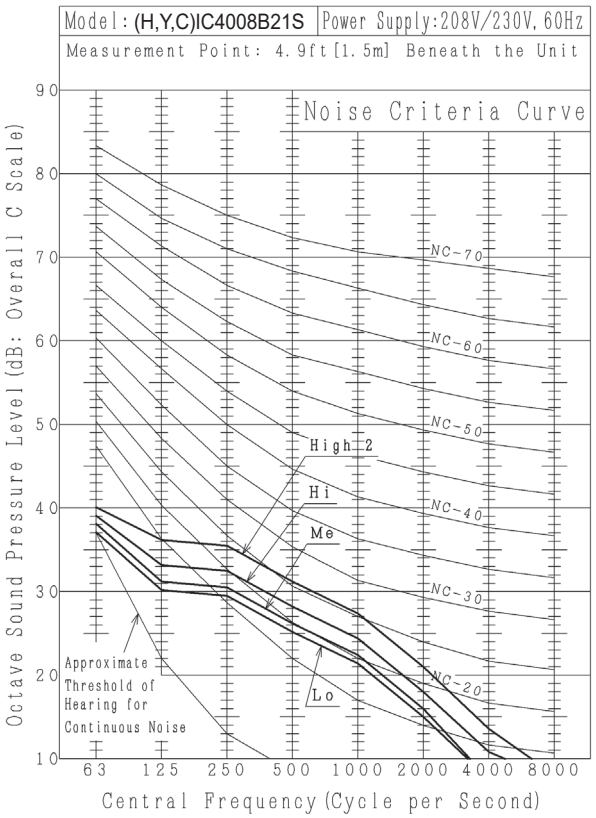
2.9 Electrical Data

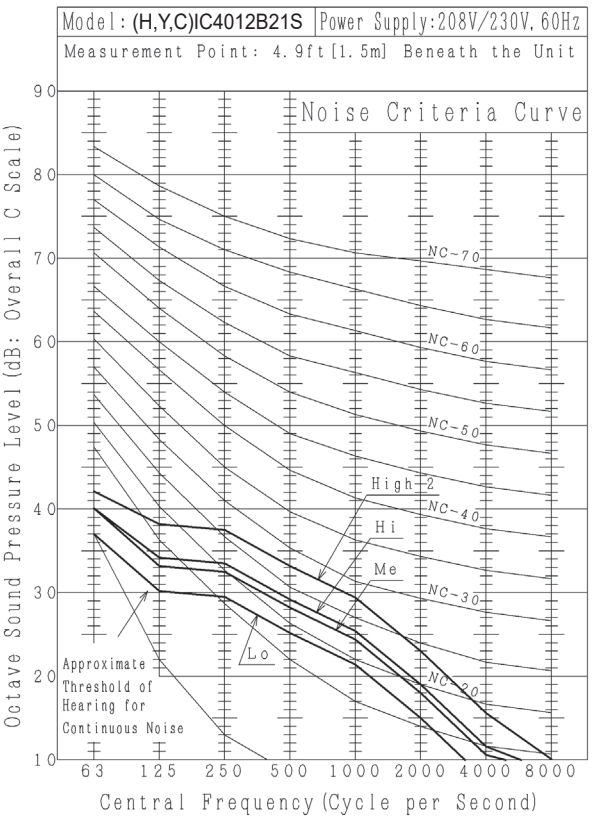
Model	Unit Main Power			Applicable Voltage		Power Supply		Indoor Fan Motor	Unit
	VOL	PH	HZ	Maximum	Minimum	MCA	MFA	OPT	FLA
(H,Y,C)IC4008B21S	208/230	1	60	253	188	0.3	15	0.057	0.2
(H,Y,C)IC4012B21S						0.4	15	0.057	0.3
(H,Y,C)IC4015B21S						0.5	15	0.057	0.4
(H,Y,C)IC4018B21S						0.9	15	0.057	0.7
(H,Y,C)IC4024B21S						0.9	15	0.057	0.7
(H,Y,C)IC4030B21S						1.1	15	0.127	0.9
(H,Y,C)IC4036B21S						1.2	15	0.127	1.0
(H,Y,C)IC4048B21S						1.2	15	0.127	1.0

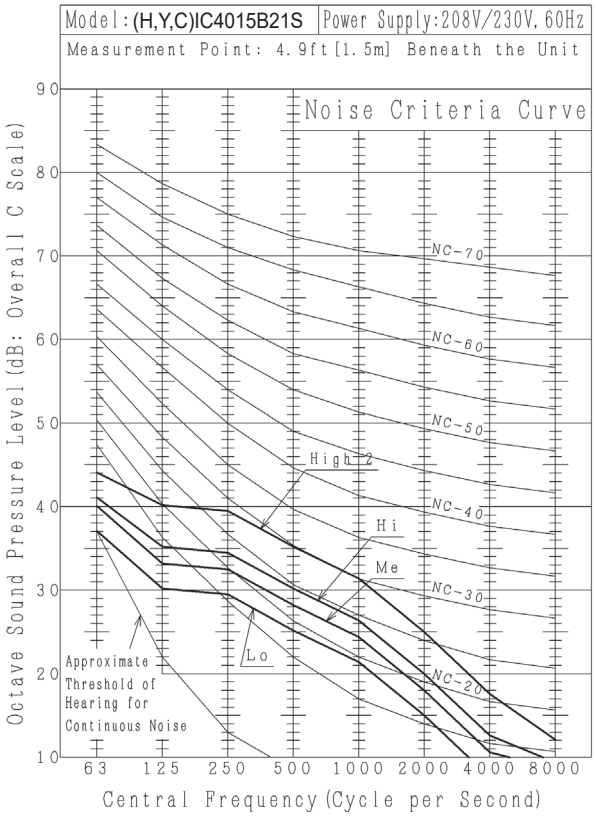
VOL: Rated Unit Power Supply Voltage (V)
PH: Phase
HZ: Frequency (Hz)
MCA: Minimum Circuit Ampacity (A)
MFA: Maximum Fuse Ampacity (A)
OPT: Rated Motor Output (kW)
FLA: Full Load Ampacity (A)

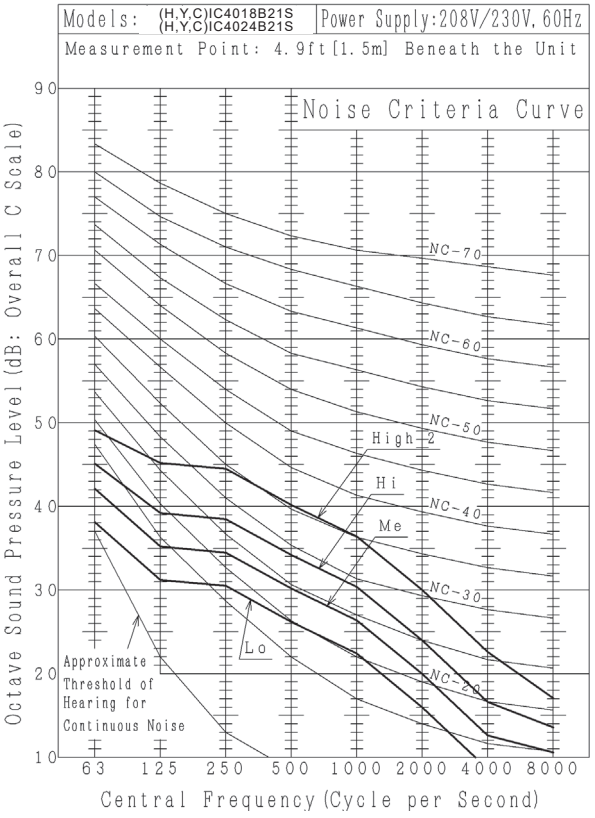
NOTE:
Power supply voltage should be satisfied with the following.
Supply Voltage: Rated Voltage within ±10%
Starting Voltage: Rated Voltage within -15%
Operating Voltage: Rated Voltage within ±10%

2.10 Sound Data

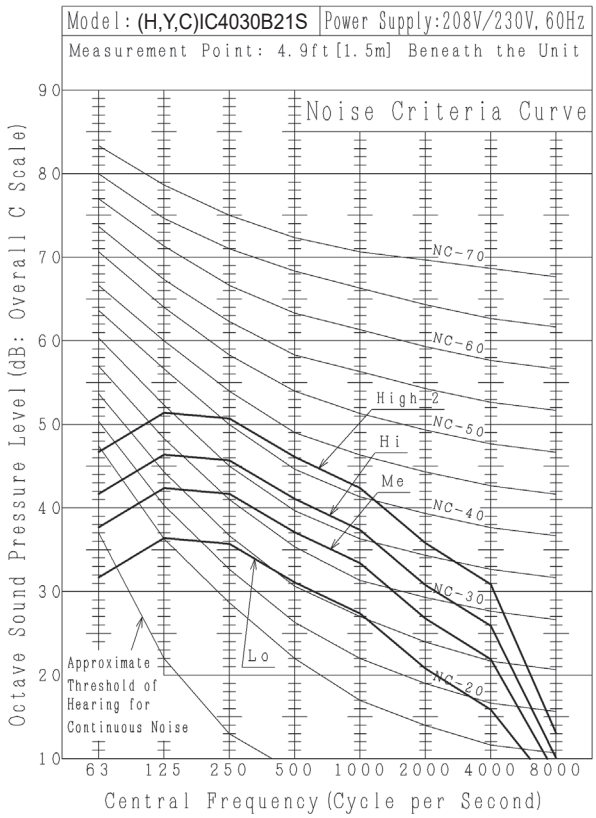


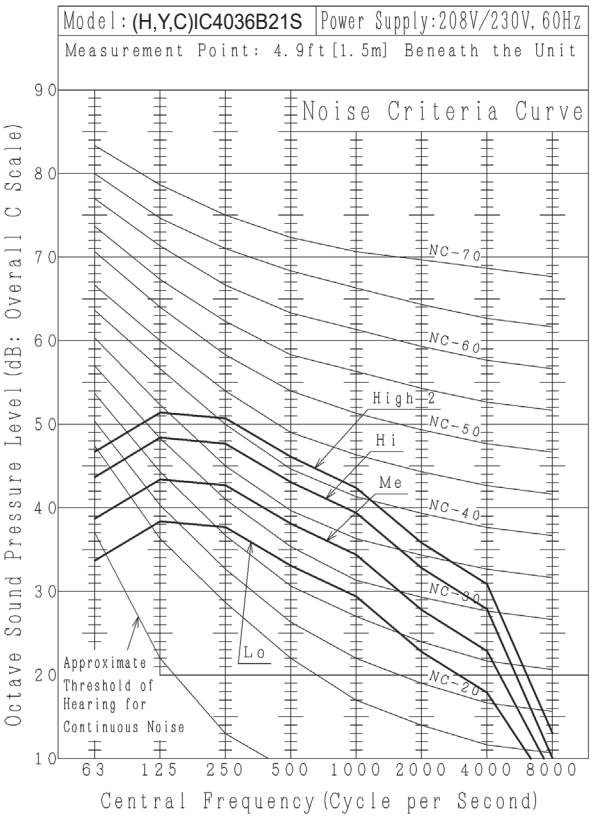


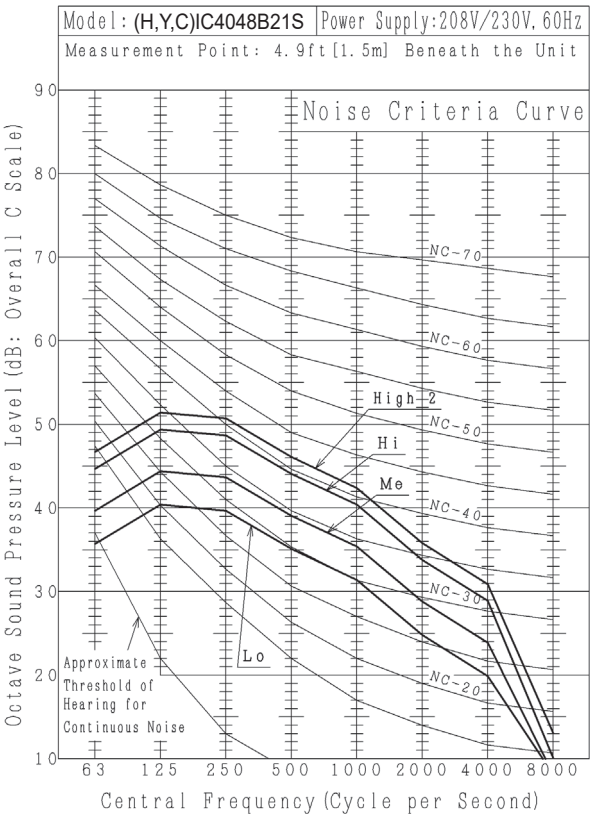




NOTE:
Operation sound is equivalent to an anechoic chamber (free space).
Noise level will be increased by the surrounding noise and echoes.





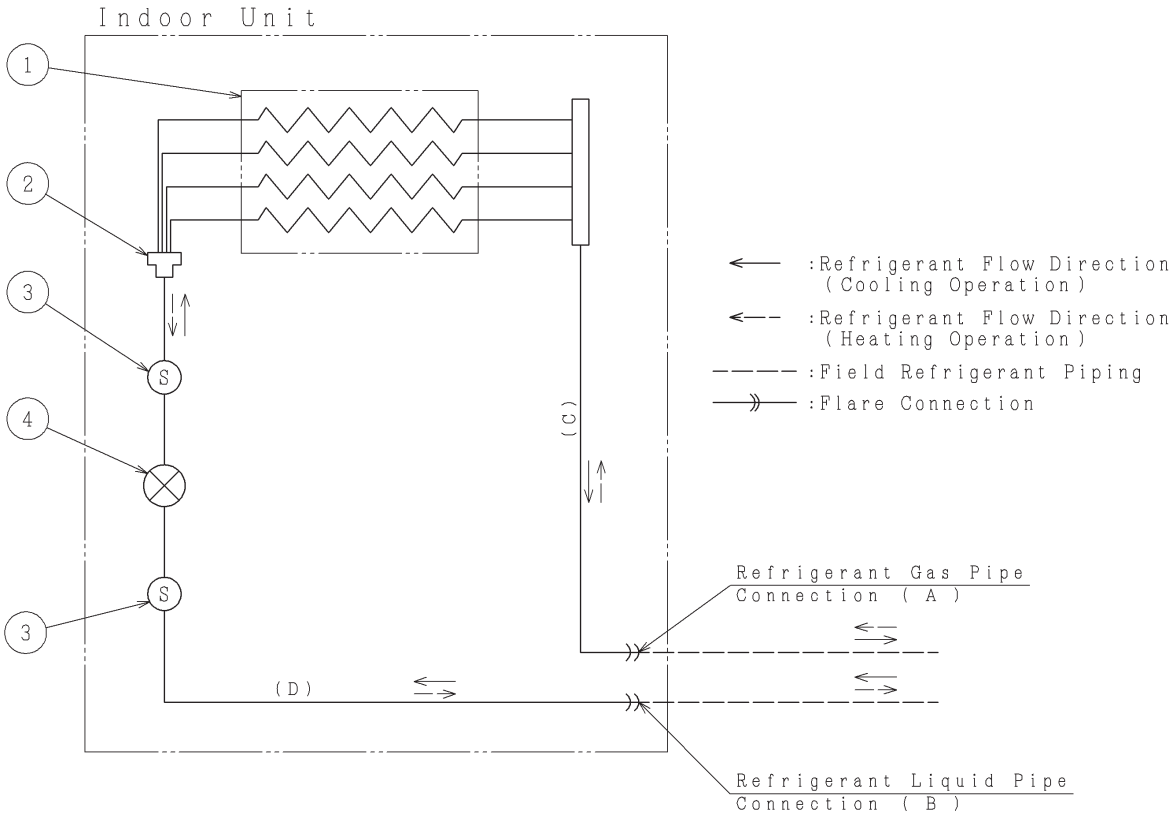


NOTE:
Operation sound is equivalent to an anechoic chamber (free space).
Noise level will be increased by the surrounding noise and echoes.

2.11 Control System

2.11.1 Refrigerant System

Models: (H,Y,C)IC4008B21S, (H,Y,C)IC4012B21S, (H,Y,C)IC4015B21S, (H,Y,C)IC4018B21S, (H,Y,C)IC4024B21S, (H,Y,C)IC4030B21S, (H,Y,C)IC4036B21S and (H,Y,C)IC4048B21S



Mark	Part Name
1	Heat Exchanger
2	Distributor
3	Strainer
4	Electronic Expansion Valve

Unit: inch (mm)

Model	Distributor	(A) Gas Pipe Connection	(B) Liquid Pipe Connection	(C) (OD×T)	(D) (OD×T)
(H,Y,C)IC4008B21S	5 Pass	ϕ1/2 (12.70)	ϕ1/4 (6.35)	ϕ1/2×t0.031 (12.7×0.8)	ϕ1/2×t0.031 (12.7×0.8)
(H,Y,C)IC4012B21S	7 Pass	ϕ1/2 (12.70)	ϕ1/4 (6.35)	ϕ1/2×t0.031 (12.7×0.8)	ϕ1/2×t0.031 (12.7×0.8)
(H,Y,C)IC4015B21S	7 Pass	ϕ1/2 (12.70)	ϕ1/4 (6.35)	ϕ1/2×t0.031 (12.7×0.8)	ϕ1/2×t0.031 (12.7×0.8)
(H,Y,C)IC4018B21S	7 Pass	ϕ5/8 (15.88)	ϕ3/8 (9.52)	ϕ5/8×t0.039 (15.88×1.0)	ϕ1/2×t0.031 (12.7×0.8)
(H,Y,C)IC4024B21S	9 Pass	ϕ5/8 (15.88)	ϕ3/8 (9.52)	ϕ5/8×t0.039 (15.88×1.0)	ϕ1/2×t0.031 (12.7×0.8)
(H,Y,C)IC4030B21S	9 Pass	ϕ5/8 (15.88)	ϕ3/8 (9.52)	ϕ5/8×t0.039 (15.88×1.0)	ϕ1/2×t0.031 (12.7×0.8)
(H,Y,C)IC4036B21S	9 Pass	ϕ5/8 (15.88)	ϕ3/8 (9.52)	ϕ5/8×t0.039 (15.88×1.0)	ϕ1/2×t0.031 (12.7×0.8)
(H,Y,C)IC4048B21S	9 Pass	ϕ5/8 (15.88)	ϕ3/8 (9.52)	ϕ5/8×t0.039 (15.88×1.0)	ϕ1/2×t0.031 (12.7×0.8)

2.11.2 Standard Operation Sequence

■ Cooling Operation

The sequence may be different depending on the outdoor unit model to be connected. Refer to the “Outdoor Unit Engineering Manual” for details.

■ Dry Operation

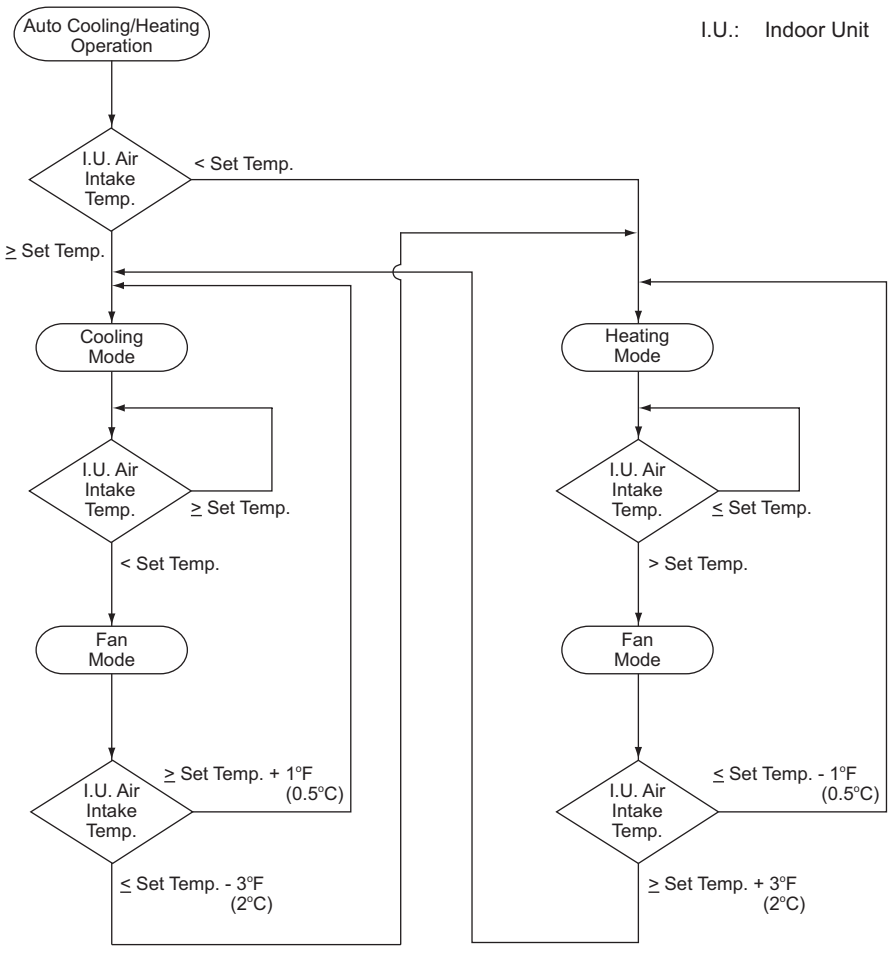
The sequence may be different depending on the outdoor unit model to be connected. Refer to the “Outdoor Unit Engineering Manual” for details.

■ Heating Operation

The sequence may be different depending on the outdoor unit model to be connected. Refer to the “Outdoor Unit Engineering Manual” for details.

■ Automatic Cooling and Heating Operation

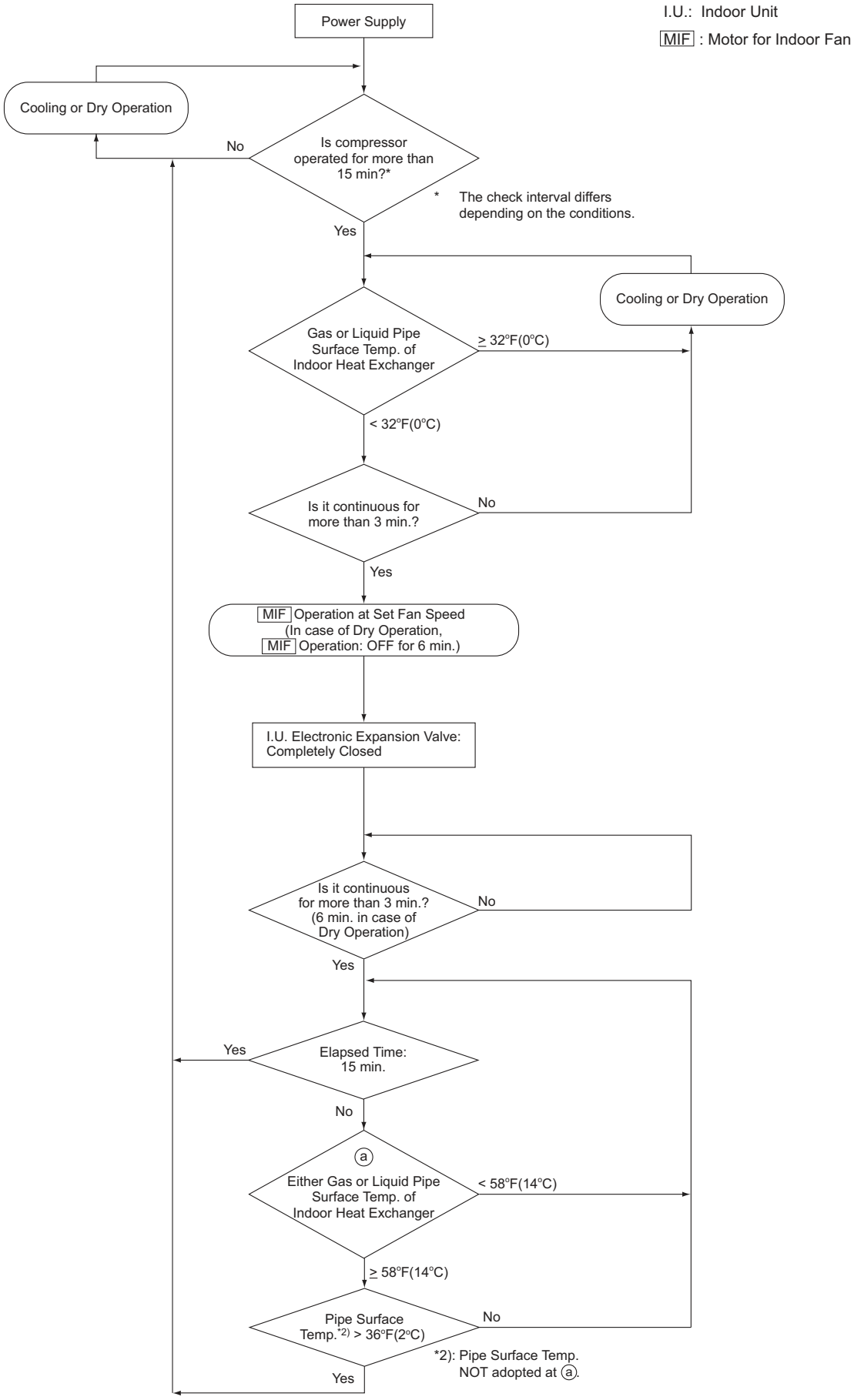
It is applicable only for the Heat Recovery System.



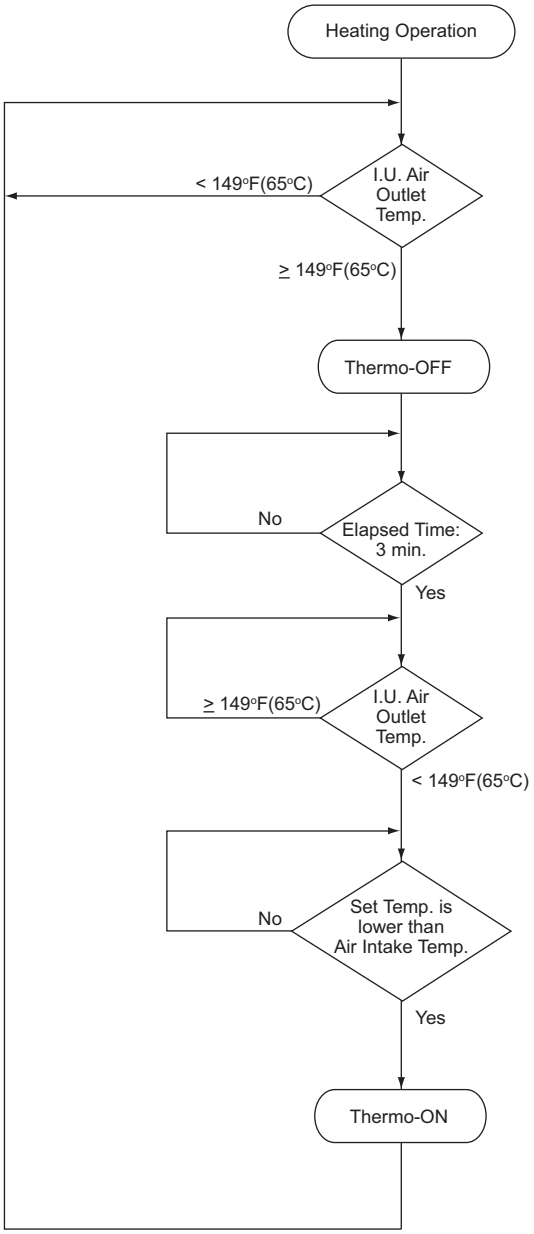
■ Defrosting Operation

The sequence may be different depending on the outdoor unit model to be connected. Refer to the “Outdoor Unit Engineering Manual” for details.

■ Freezing Protection Control during Cooling or Dry Operation



■ Prevention Control for Excessively High Outlet Air Temperature
(High Outlet Air Temperature Heat Lockout)



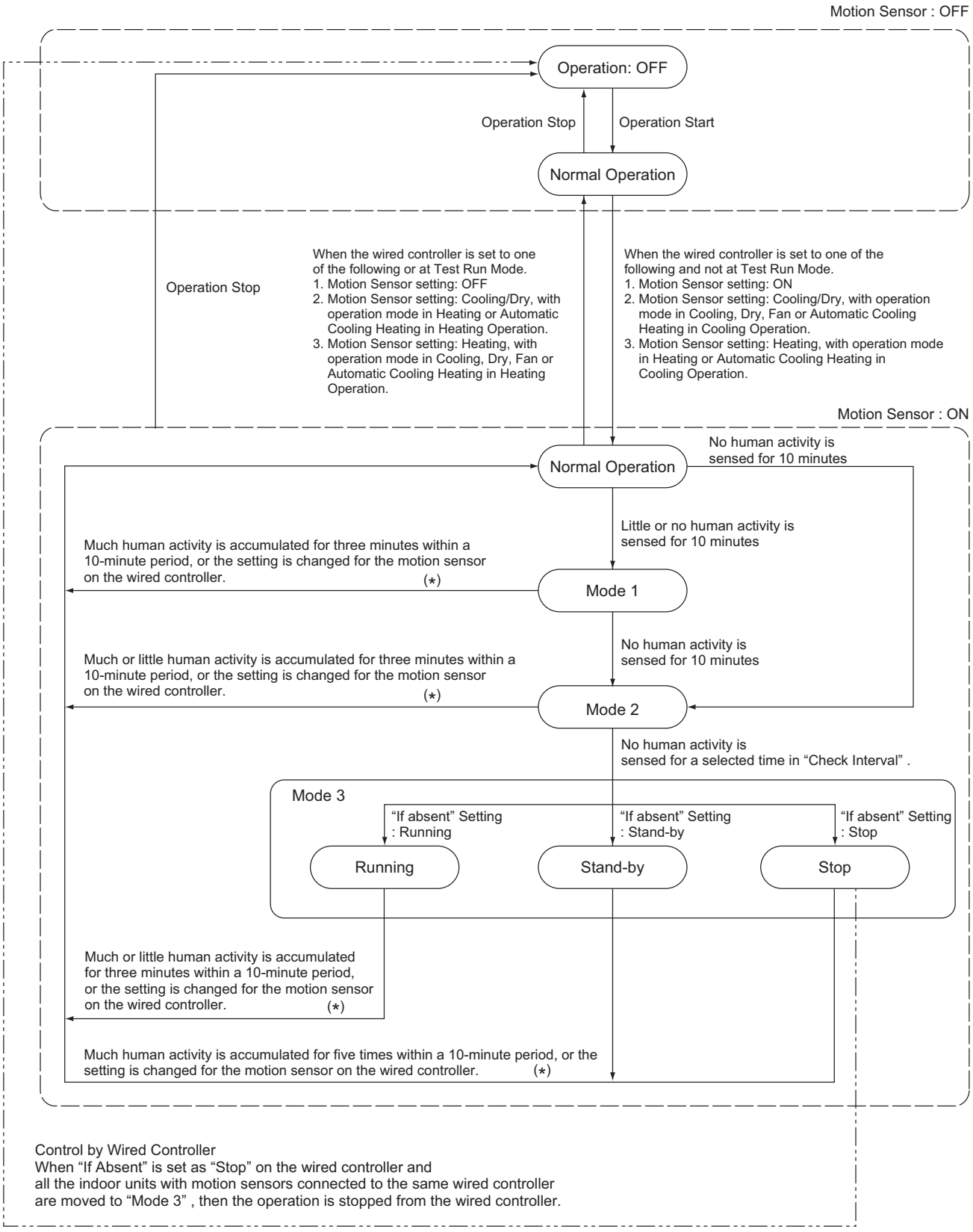
Thermo-ON/OFF Control for Indoor Unit

NOTE:
Thermo-ON: The outdoor unit and some indoor units are running.
Thermo-OFF: The outdoor unit and some indoor units stay on, but don't run.

■ Activating Protections

The sequence may be different depending on the outdoor unit model to be connected. Refer to the “Outdoor Unit Engineering Manual” for details.

■ Control for Motion Sensor (with Decorative Panel P-AP160NAE1)



* Motion sensor settings on the wired controller are “Sensor”, “If Absent”, “Check Interval” and “Simultaneous Operation / Individual Operation”.

The amount of human activity is according to the following information detected by the motion sensor.

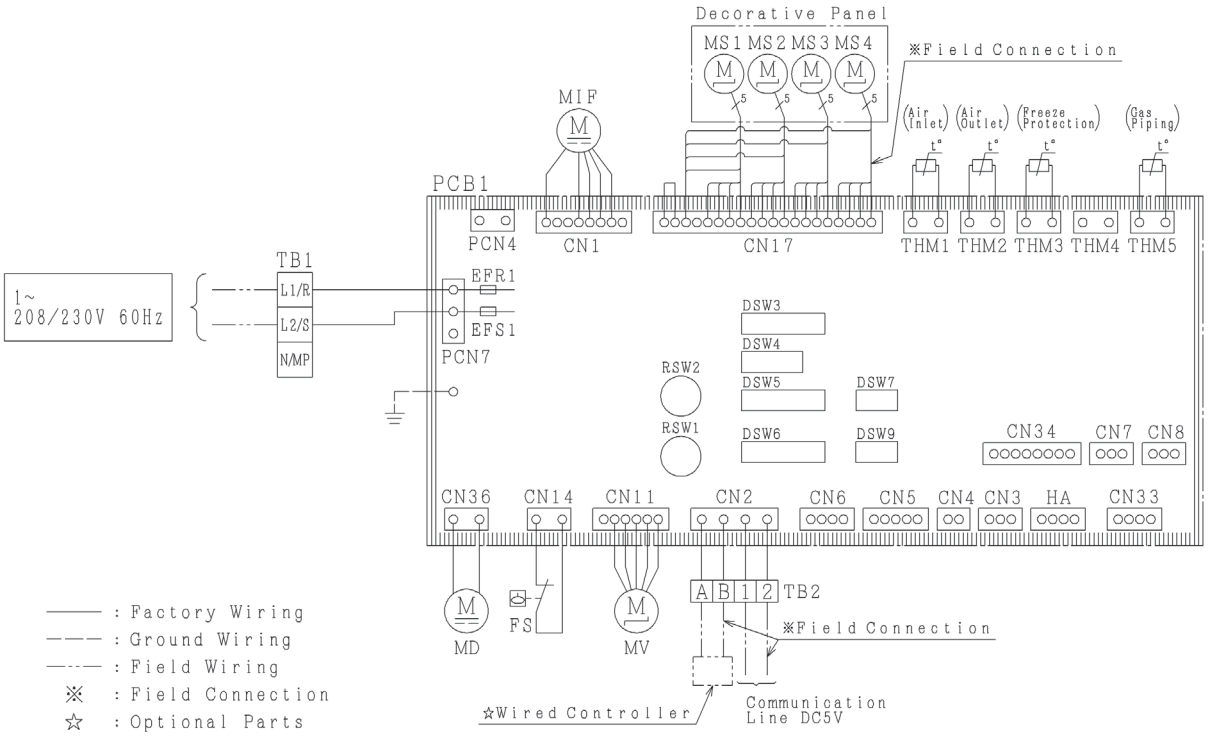
None: No Human Activity (Absent)
Small: Little Human Activity
Large: Much Human Activity

2.11.3 Safety and Control Device Setting

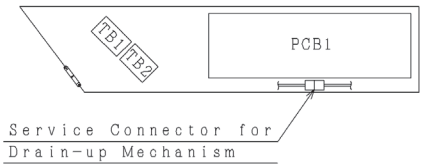
Model			(H,Y,C)IC4008B21S (H,Y,C)IC4012B21S (H,Y,C)IC4015B21S (H,Y,C)IC4018B21S (H,Y,C)IC4024B21S	(H,Y,C)IC4030B21S (H,Y,C)IC4036B21S (H,Y,C)IC4048B21S
For Evaporator Fan Motor				
Thermostat	Cut-Out	°F	212 $\pm^{7}$	212 $^{+27}_{-18}$
		(°C)	(100 $\pm^{4}$)	(100 $^{+15}_{-10}$)
	Cut-In	°F	194 $\pm^{7}$	203 $^{+27}_{-18}$
		(°C)	(90 $\pm^{4}$)	(95 $^{+15}_{-10}$)
For Control Circuit				
Fuse				
Capacity		A	5	

2.11.4 Wiring Diagram

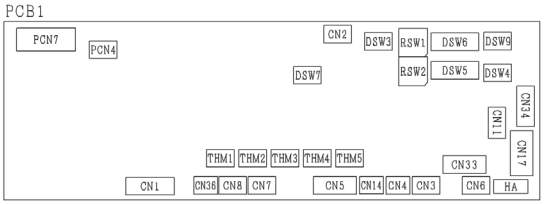
Models: (H,Y,C)IC4008B21S, (H,Y,C)IC4012B21S, (H,Y,C)IC4015B21S, (H,Y,C)IC4018B21S, (H,Y,C)IC4024B21S, (H,Y,C)IC4030B21S, (H,Y,C)IC4036B21S and (H,Y,C)IC4048B21S with Decorative Panel P-AP160NA2



Electrical Control Box of Indoor Unit



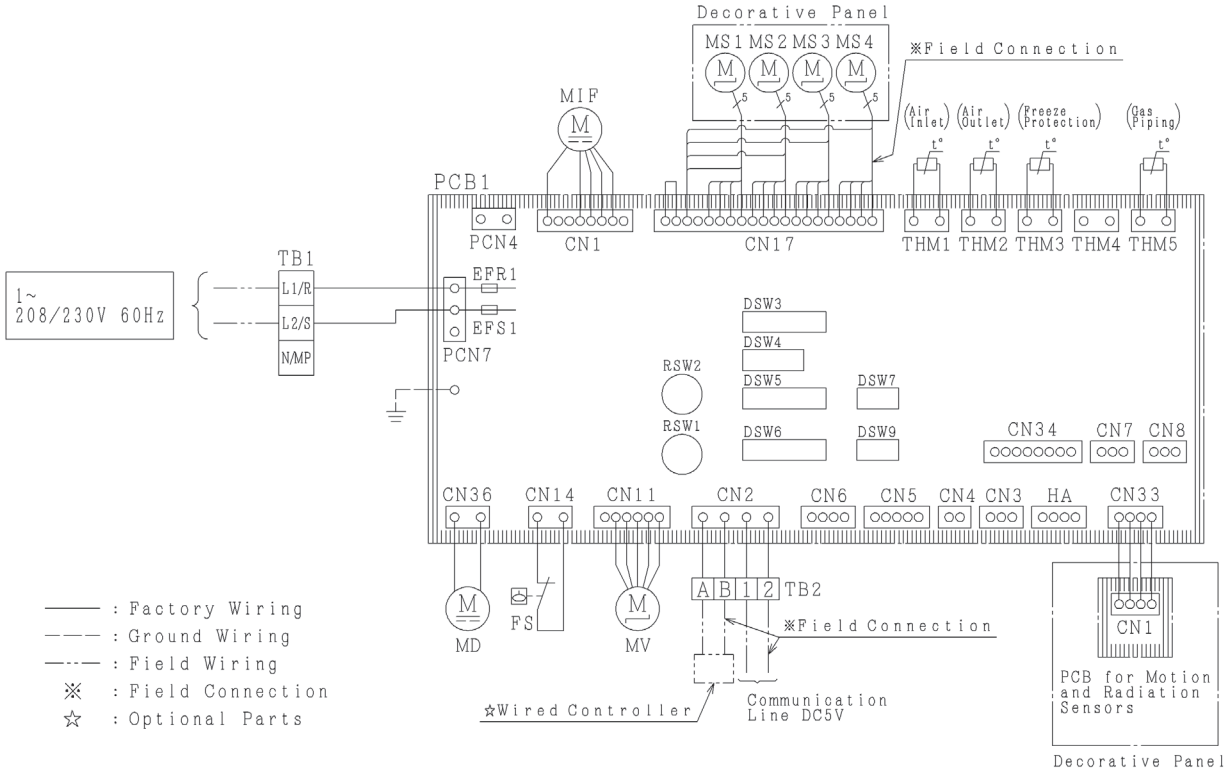
Printed Circuit Board



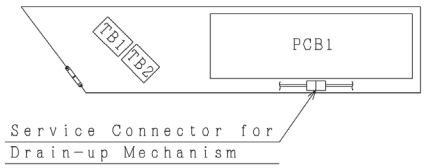
Note:
1. All the field wiring and equipment must comply with local codes.

Mark	Name
CN3	Optional Connector (For Signal Input)
CN7, 8	Optional Connector (For Signal Output)
CN33	Optional Connector (For Motion and Radiation Sensors)
DSW3, 4, 7, 9	DIP Switch for Setting
EFR1, EFS1	Fuse
FS	Float Switch
MD	Motor for Drain-up Mechanism
MIF	Motor for Indoor Fan
MS1~4	Motor for Automatic Swing Louver
MV	Electronic Expansion Valve
PCB1	Printed Circuit Board
RSW1	Rotary Switch for Unit No. Setting (Ones Digit)
DSW6	DIP Switch for Unit No. Setting (Tens Digit)
RSW2	Rotary Switch for Refrigerant Cycle No. Setting (Ones Digit)
DSW5	DIP Switch for Refrigerant Cycle No. Setting (Tens Digit)
TB1, 2	Terminal Block
THM1~3, 5	Thermistor
THM4	Optional Connector (For Remote Temperature Sensor)
CN4~6, 34, HA, PCN4	Reserved Connector on PCB

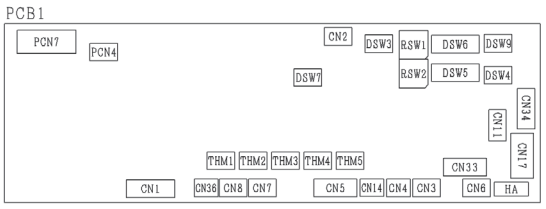
Models: (H,Y,C)IC4008B21S, (H,Y,C)IC4012B21S, (H,Y,C)IC4015B21S, (H,Y,C)IC4018B21S, (H,Y,C)IC4024B21S, (H,Y,C)IC4030B21S, (H,Y,C)IC4036B21S and (H,Y,C)IC4048B21S with Decorative Panel P-AP160NAE1



Electrical Control Box of Indoor Unit



Printed Circuit Board



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

Mark	Name
CN3	Optional Connector (For Signal Input)
CN7, 8	Optional Connector (For Signal Output)
DSW3, 4, 7, 9	DIP Switch for Setting
EFR1, EFS1	Fuse
FS	Float Switch
MD	Motor for Drain-up Mechanism
MIF	Motor for Indoor Fan
MS1~4	Motor for Automatic Swing Louver
MV	Electronic Expansion Valve
PCB1	Printed Circuit Board
RSW1	Rotary Switch for Unit No. Setting (Ones Digit)
DSW6	DIP Switch for Unit No. Setting (Tens Digit)
RSW2	Rotary Switch for Refrigerant Cycle No. Setting (Ones Digit)
DSW5	DIP Switch for Refrigerant Cycle No. Setting (Tens Digit)
TB1, 2	Terminal Block
THM1~3, 5	Thermistor
THM4	Optional Connector (For Remote Temperature Sensor)
CN4~6, 34, HA, PCN4	Reserved Connector on PCB

3. Optional Parts

3.1 Line Up

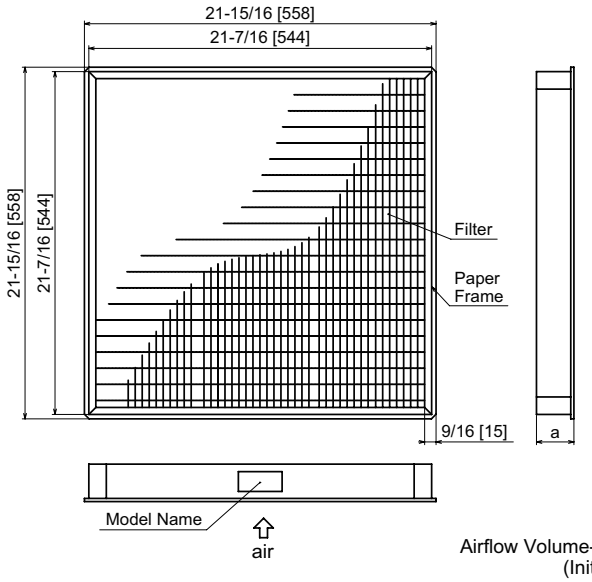
Item No.	Optional Parts	Adopting Model Name	Optional Parts Model Name	Adapting
3.2	Air Filter	(H,Y,C)IC4008~048B21S	F-71M-K2	For 008 to 018
			F-160M-K2	For 024 to 048
3.3	Filter Box		B-160H3	
3.4	Air Outlet Shutter Plate		PI-160K3	
3.5	Fresh Air Intake Kit		OACI-160K3	
3.6	T-Tube Connecting Kit		TKCI-160K	
3.7	Duct Adapter		PD-75A	
3.8	Infrared (IR) Receiver Kit		C4IRK01	
3.9	3P Connector Cable		PCC-1A	
3.10	Remote Sensor		THM-R2A	
3.11	Relay and 3 Pin Connector Kit		PSC-5RA	
3.12	Wired Controller		CIW01	
3.13	Simplified Wired Controller		CIS01	
3.14	Wireless Controller		CIR01	
3.15	Mini Central Controller		CCM01	
3.16	Large Central Controller		CCL01	
3.17	Computerized Central Controller Software / Adapter		CCCS01 / CCCA01	

Refer to the Engineering Manual of Control for details of item 3.12 to 3.17.

3.2 Air Filter: F-71M-K2 and F-160M-K2

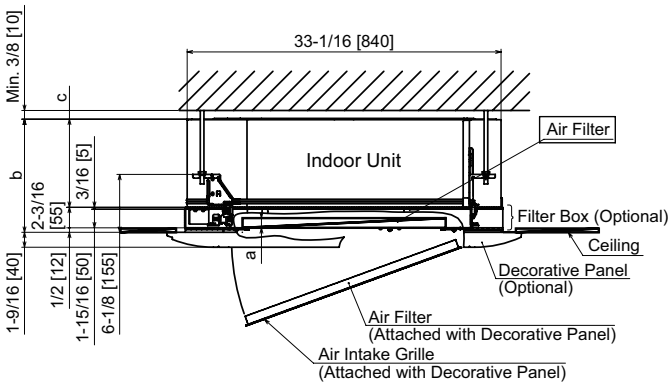
Unit: inch [mm]

Dimensional Data



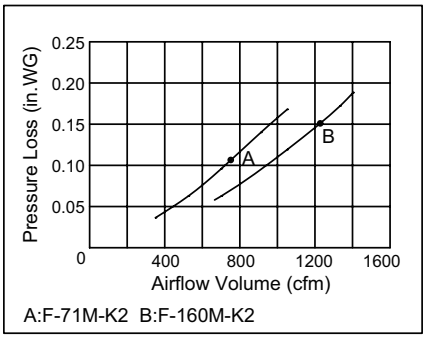
Dimension / Model	F-71M-K2	F-160M-K2
a	1 [25]	1-3/4 [45]

Installation State



Dimension / Indoor Unit	a	b	c
008 to 018 MBH	1 [25]	11-15/16 [303]	9-5/16 [236]
024 to 048 MBH	1-3/4 [45]	13-7/8 [353]	11-1/4 [286]

Airflow Volume-Pressure Loss Characteristics (Initial Pressure Loss)



Specifications

Item	Model	F-71M-K2	F-160M-K2
Applicable Indoor Unit Model ((H,Y,C)IC4**B21S)	MBH	008 to 018	024 to 048
Quantity per unit		1	
Dust Collection Efficiency	%	65 (Colorimetric Method)	
Airflow	cfm (m^3/min)	777 (22)	1236 (35)
Initial Pressure Loss	in. WG (Pa)	0.13 (32.0)	0.15 (38.0)
End Pressure Loss	in. WG (Pa)	0.37 (91.8)	0.46 (113.8)
Material	Filter	Synthetic Fiber-Containing Nonwoven Fabric	
	Color	White/Gray (Filter / Frame)	
Operating Time	hour	2500	
Weight	lbs (kg)	1.8 (0.8)	2.2 (1.0)
Regulation		Not be re-used	
Applicable Filter Box		B-160H3	

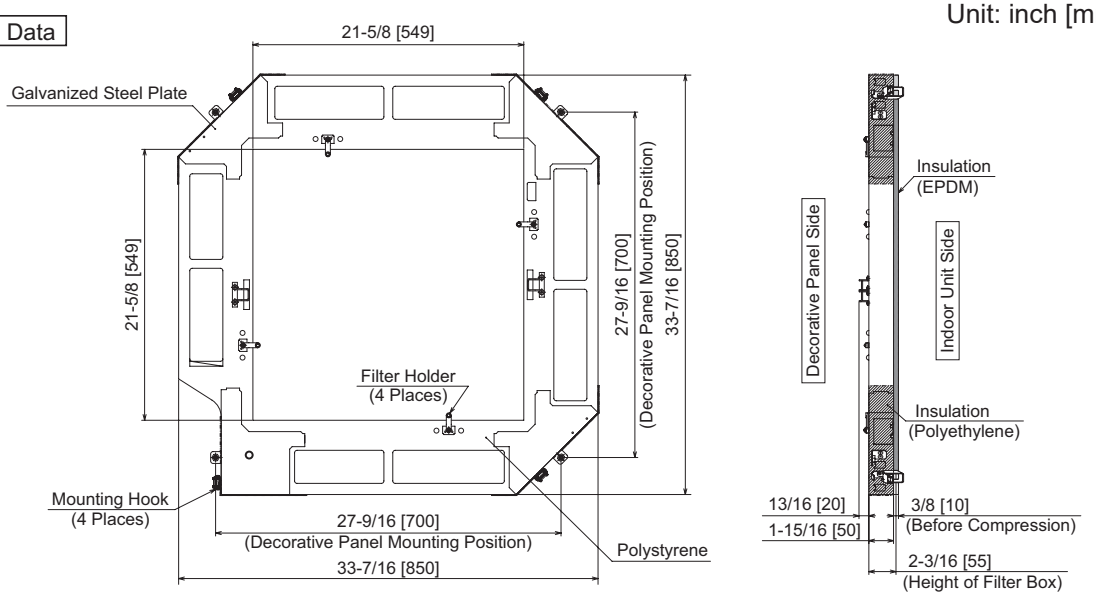
NOTES:

1. The filter's performance depends upon application and operating environment.
2. The filter's longevity is impacted by airborne pollutants, dust, and pet dander.
3. Change the filter if its operating time appears to be no longer useful.
4. Select the function selection mode with the wired controller and set the high speed mode to “High Speed 1” before using this air filter.
   Refer to the “Installation and Maintenance Manual” for hight-speed mode details.
5. Refer to the “Installation Manual for Air Filter” for installation details.

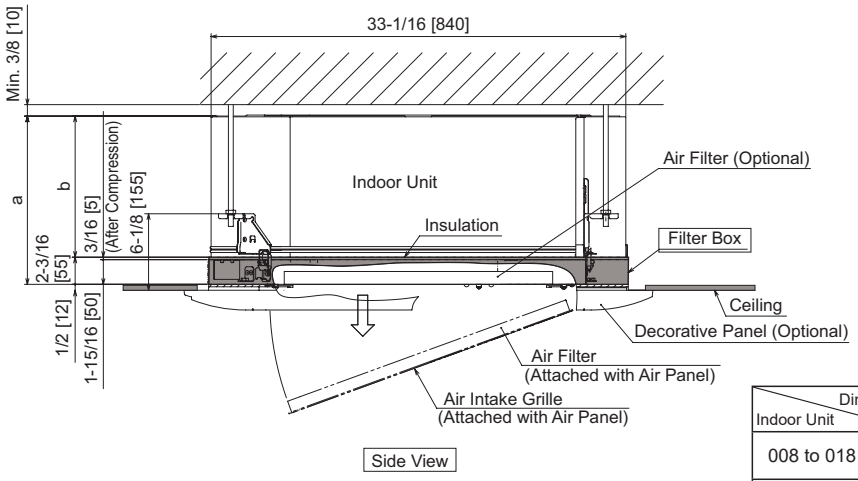
3.3 Filter Box: B-160H3

Unit: inch [mm]

Dimensional Data



Installation State



Side View

Indoor Unit \ Dimension	a	b
008 to 018 MBH	11-7/16 [291]	9-5/16 [236]
024 to 048 MBH	13-7/16 [341]	11-1/4 [286]

Specifications

Item \ Model		B-160H3	
Applicable Indoor Unit Model ((H,Y,C)IC4**B21S)	MBH	008 to 048	
Material		Polyethylene, Galvanized Steel Plate, EPDM-FO, Polystyrene	
Color of Foam		Bluish Gray	
Weight	lbs (kg)	5.5 (2.5)	
Applicable Air Filter		F-71M-K2	F-160M-K2

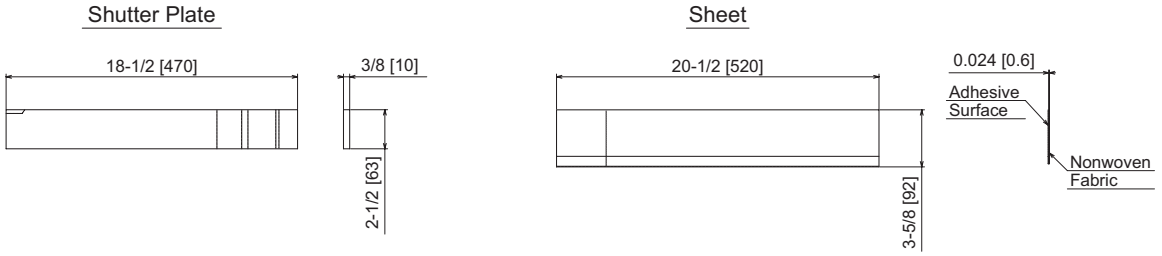
NOTES:

1. The total height of the unit is increased by approximately 2-3/16 inches (55mm) when the filter box is installed. Pay attention to the amount of space needed for installation.
2. Refer to the “Installation Manual for Filter Box” for installation details.

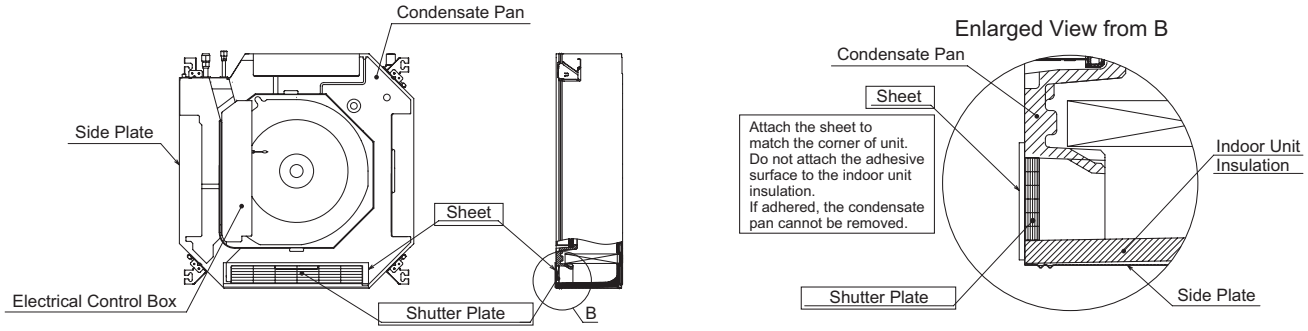
3.4 Air Outlet Shutter Plate: PI-160K3

Unit: inch [mm]

Dimensional Data



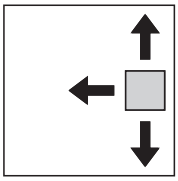
Installation State



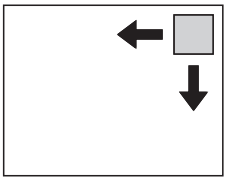
Blockable Portion and Components

Example:

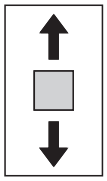
• Near the Wall: 3-Way Outlet



• In a Corner: 2-Way Outlet



• In Rectangular Room: 2-Way Outlet



Specifications

Item \ Model		PI-160K3
Applicable Indoor Unit Model ((H,Y,C)IC4**B21S)	MBH	008 to 048
Quantity per Unit		1
Material	Shutter Plate	Polyethylenes
	Sheet	Non-woven Fabric (UL94V-0)

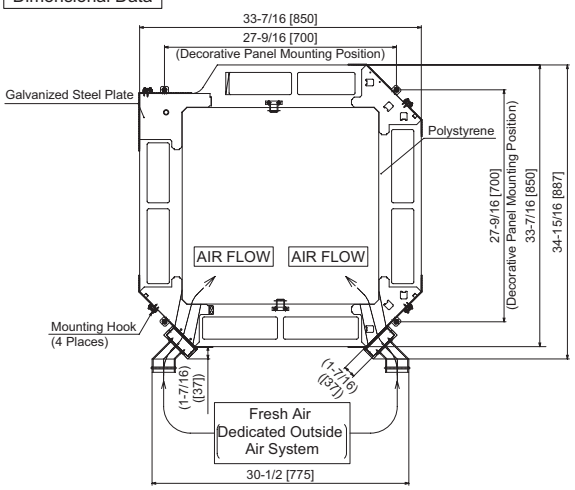
NOTES:

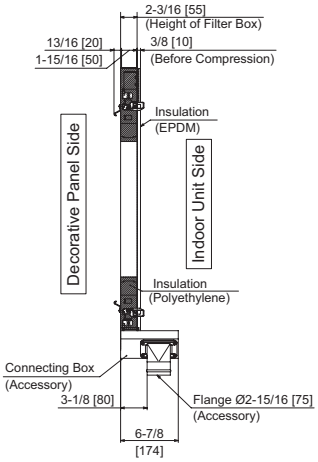
1. If 3-way outlets are used, air quality will be decreased by about 3 to 5%, and within the operation range of the unit, there will be no major difference in particular, in comparison with the 4-way outlet. However, the electromagnetic interference (EMI) will increase by about 1 to 5dB(A).
2. Refer to the “Installation Manual for Air Outlet Shutter Plate” for installation details.

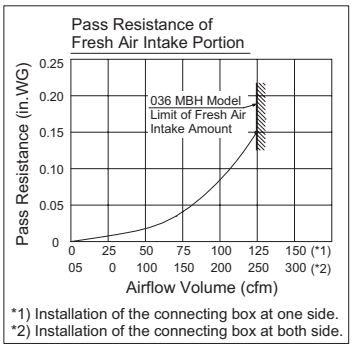
3.5 Fresh Air Intake Kit: OACI-160K3

Unit: inch [mm]

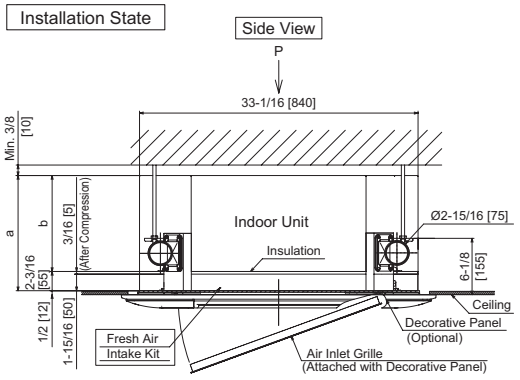
Dimensional Data



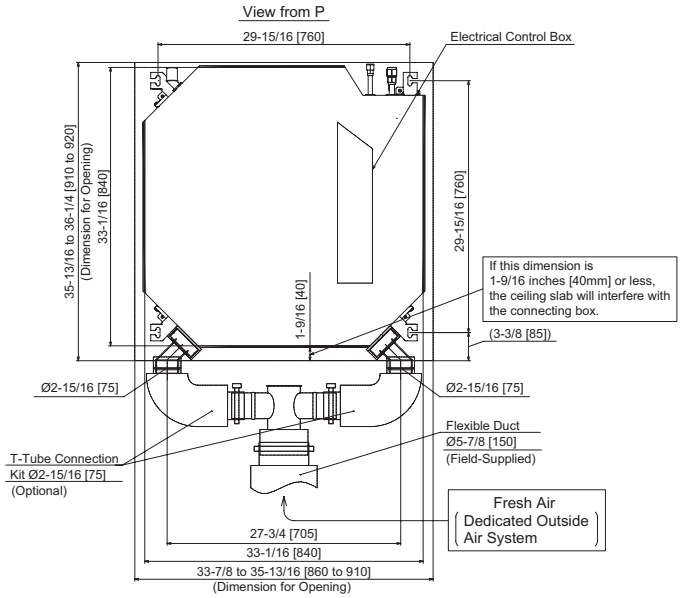




Installation State



Indoor Unit \ Dimension	a	b
008 to 018 MBH	11-7/16 [291]	9-5/16 [236]
024 to 048 MBH	13-7/16 [341]	11-1/4 [286]



Specifications

Item \ Model		OACI-160K3
Applicable Indoor Unit Model ((H,Y,C)IC4**B21S)	MBH	008 to 048
Material		Polyethylene, Galvanized Steel Plate, EPDM-FO, Polystyrene
Color of Frame		Bluish Gray
Weight	lbs (kg)	5.1 (2.3)
Applicable T-Tube Connecting Kit (Optional)		TKCI-160K

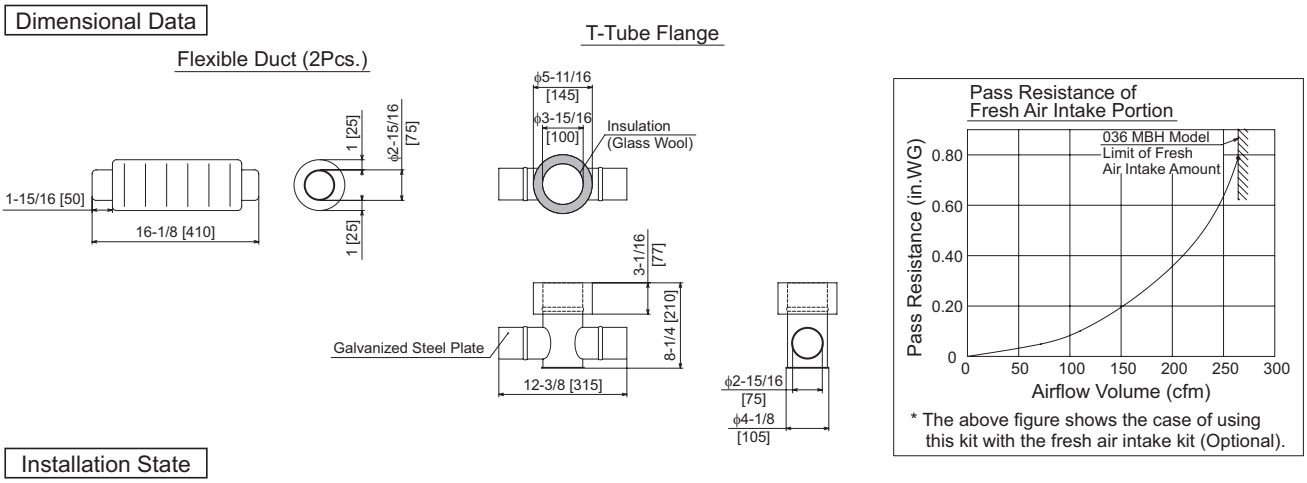
NOTES:

1. This kit cannot supply fresh air without connecting a duct from a dedicated outside air system or duct fan.
2. When using this kit with the dedicated outside air system, the maximum fresh air intake volume should be within 20% of the rated airflow volume of the indoor unit. In addition, when using this kit without the dedicated outside air system, care should be taken to not cause condensation inside this kit, the duct, and indoor unit.
3. The total height of the unit is increased by approximately 2-3/16 inches (55mm) when the fresh air inlet kit is installed. Pay attention to the amount of space needed for installation.
4. When fresh air is taken from one side, cover the gap with insulation for the other side to prevent air leakage and condensation.
5. Air flowing through the duct does not pass through the air filter of the indoor unit. Therefore, install an air filter (field-supplied) at the supply side of the fresh air.
6. Insulate the duct and the duct connection (including the plate band and the T-tube connection). The materials for the duct and the insulation should be nonflammable.
7. The curve “Pass Resistance of Fresh Air Intake Portion” shows the value when the kit is used by itself. If the kit is installed along with the T-tube connecting kit, refer to the “T-Tube Connecting Kit” for details.
8. Refer to the “Installation Manual for Fresh Air Intake Kit” for installation details.

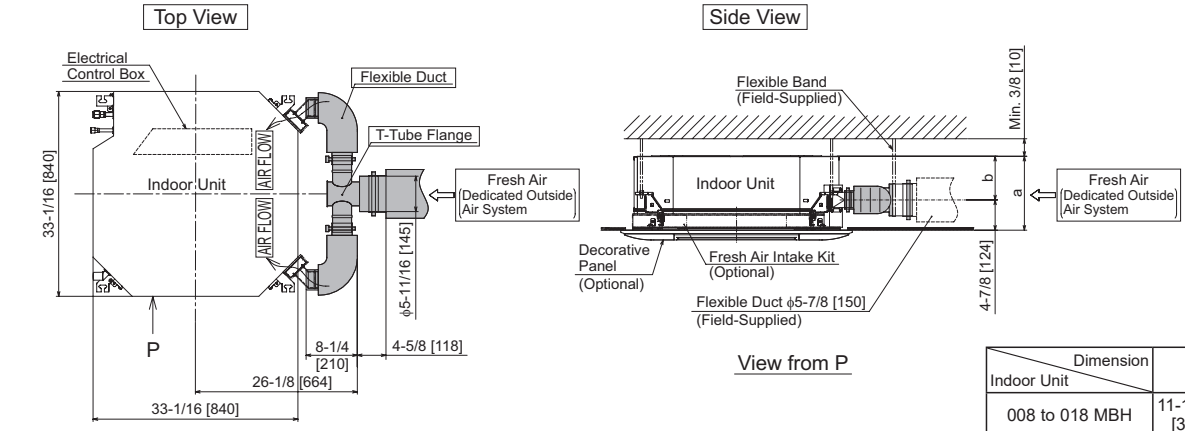
3.6 T-Tube Connecting Kit: KCI-160K

Unit: inch [mm]

Dimensional Data



Installation State



Indoor Unit \ Dimension	a	b
008 to 018 MBH	11-15/16 [303]	7-1/16 [179]
024 to 048 MBH	13-7/8 [353]	9 [229]

Specifications

Item \ Model		TKCI-160K
Applicable Indoor Unit Model ((H,Y,C)IC4**B21S)	MBH	008 to 048
Purpose		Ducted Connection Parts for "Fresh Air Intake Kit"
Material	T-Tube Flange	Galvanized Steel Box
	Flexible Duct	PVC Tube, Glass Wool
Weight	lbs (kg)	4.4 (2.0)
Applicable Fresh Air Intake Kit (Optional)		OACI-160K3

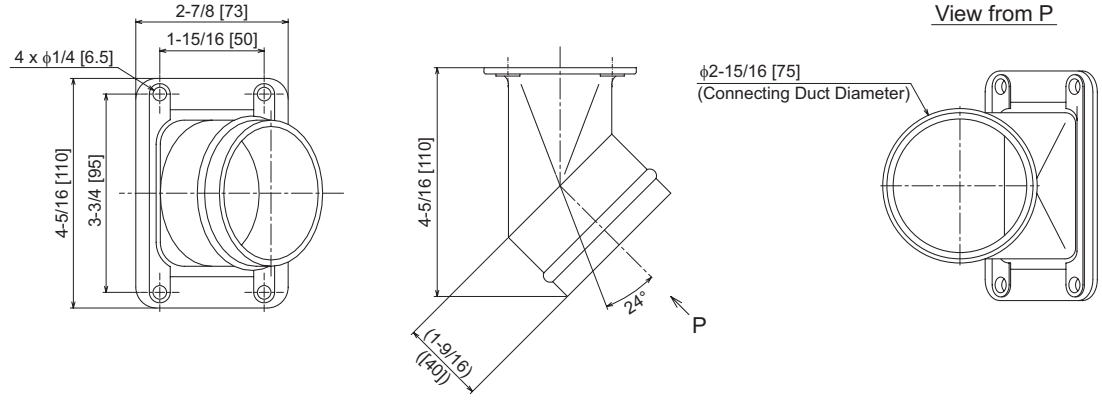
NOTES:

1. This kit must be used with a Fresh Air Intake Kit.
2. This kit cannot supply fresh air without connecting a duct to supply fresh air with a dedicated air system or the duct fan.
3. When using this kit with a dedicated outside air system, the maximum fresh air intake volume should be within 20% of the rated airflow volume of the indoor unit. In addition, when using this kit without the dedicated outside air system, be careful not to cause condensation inside this kit, the duct, and indoor unit.
4. The curve “Pass Resistance of Fresh Air Intake Portion” shows the value when this kit is used with the fresh air inlet kit.
5. Refer to the “Installation Manual for T-tube Connecting Kit” for more details.

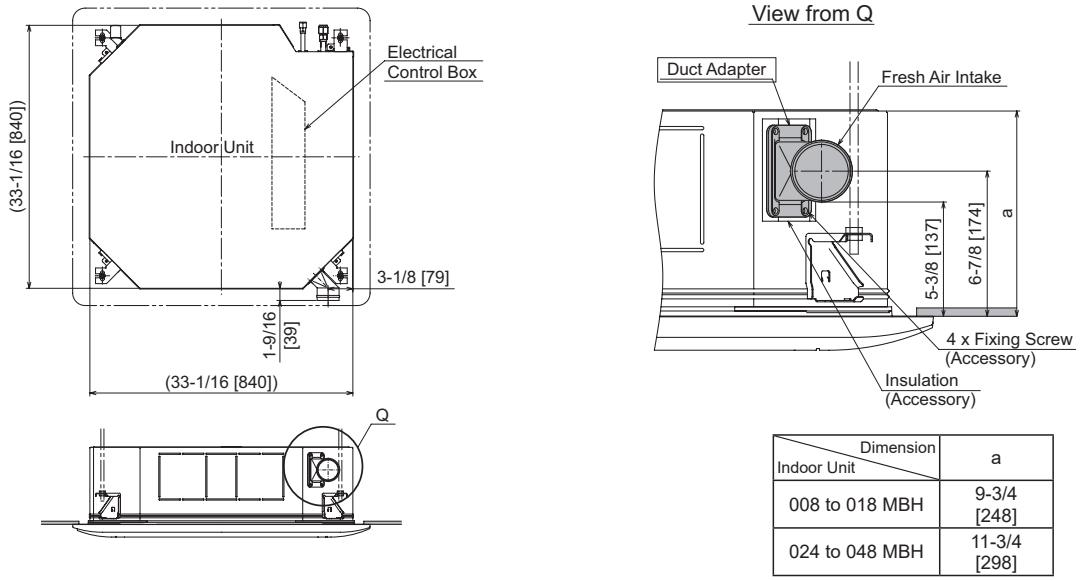
3.7 Duct Adapter: D-75A

Unit: inch [mm]

Dimensional Data



Installation State



Indoor Unit \ Dimension	a
008 to 018 MBH	9-3/4 [248]
024 to 048 MBH	11-3/4 [298]

Specifications

Item \ Model		PD-75A	
Applicable Indoor Unit Model ((H,Y,C)IC4**B21S)	MBH	008 to 018	024 to 048
Max. Capacity of Fresh Air Intake	cfm (m^3/min.)	35 (1)	71 (2)
Purpose		for Fresh Air Intake	
Connecting Duct Diameter	inch (mm)	ϕ2-15/16 (ϕ75)	
Material		ABS Resin (UL94V-0)	

NOTES:

1. This duct adapter is used as the connection flange to attach the fresh air intake outlet (for connecting the flexible duct ϕ2-15/16 inches (ϕ75mm).)
2. The limit amount for fresh air intake is shown above. Do not exceed the limit amount. (If the amount is exceeded, it can cause condensation.) Do not install the unit where abnormal odors are in the atmosphere.
3. The duct adapter provides a maximum quantity of fresh air intake of approximately 18cfm (0.5m^3/min.) (for 3.3ft (1m) straight pipe duct). In this instance, do not utilize the duct fan. If the requirement is for more of an intake, be sure to install the duct fan (field-supplied).
4. Refer to the “Installation Manual for Duct Adapter” for more details.

3.8 Infrared (IR) Receiver Kit: C4IRK01

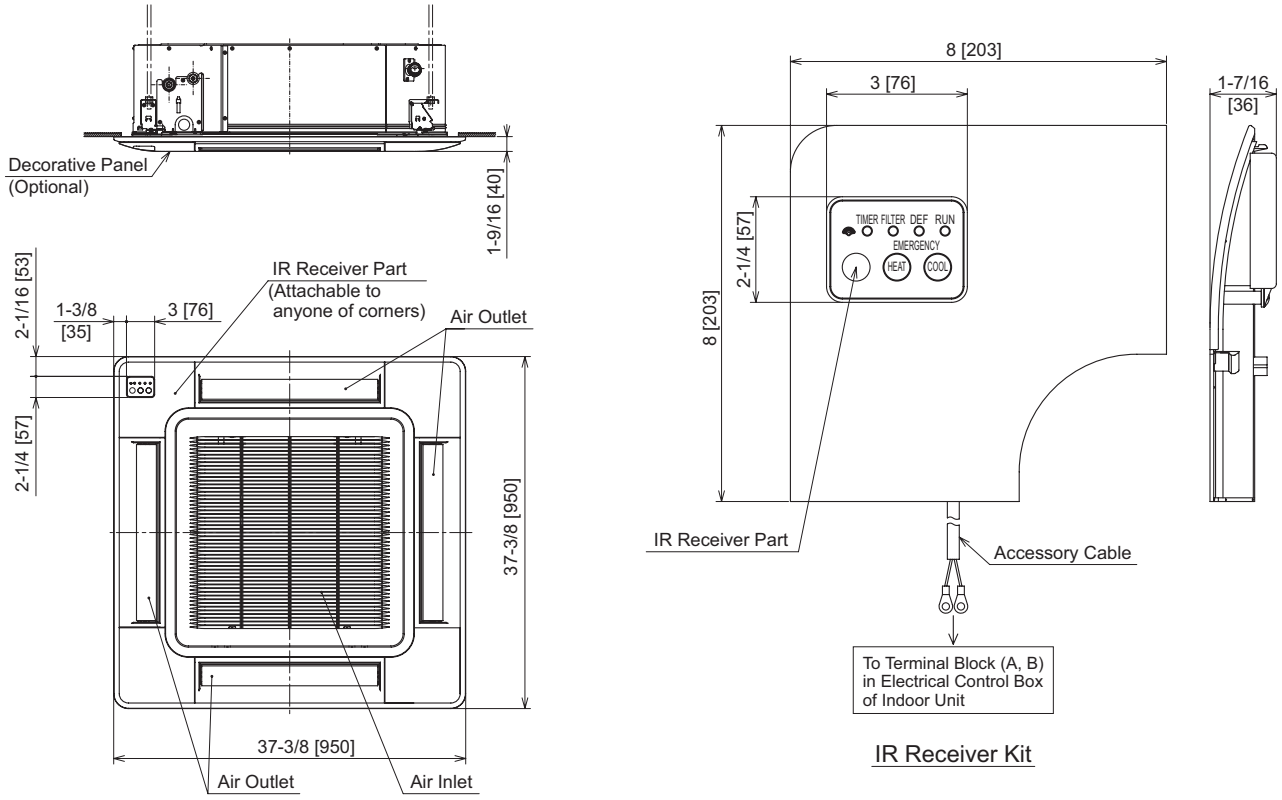
This IR receiver kit is installed with a 4-way cassette to use with the wireless controller.

3.8.1 Specifications

Model	C4IRK01
Outer Dimension < W × H × D >	8 × 8 × 1-7/16 inches (203 × 203 × 36 mm)

3.8.2 Dimensions

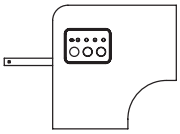
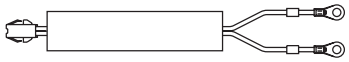
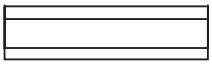
Unit: inch [mm]



3.8.3 Applicable Models

Model	C4IRK01
Applicable Indoor Unit Model	4-Way Cassette Type
Applicable Wireless Controller	CIR01

3.8.4 Accessories / Options

No.	Accessory	Qty.	Remarks
①	IR Receiver Kit C4IRK01 	1	With Connecting Cable
②	Connecting Cable 	1	-
③	Wiring Cover 	1	For Protection of Connecting Cable
④	Cable Band 	3	For Securing Wiring Cover and Connecting Cable
⑤	Installation Manual	1	-
⑥	Operation Manual	1	-

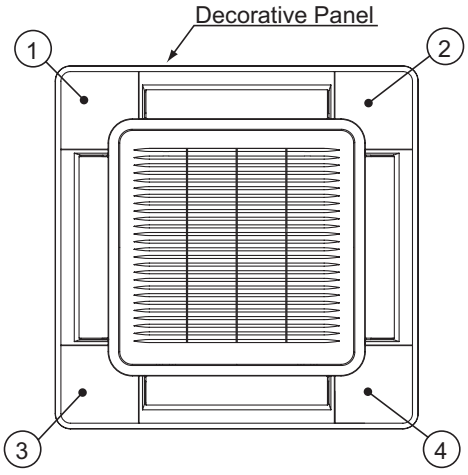
3.8.5 Installation

1 Perform the installation work for the IR receiver kit while the optional decorative panel is being attached to the indoor unit.

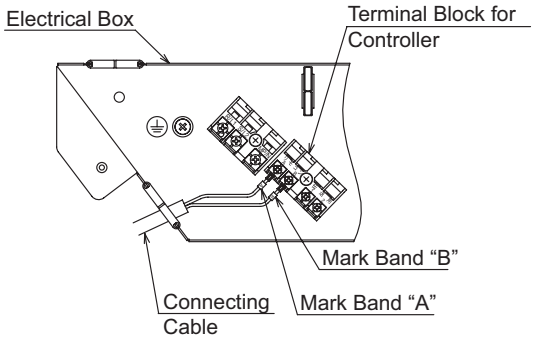
2 When the IR receiver kit is attached after the decorative panel is attached to the indoor unit, turn OFF the power supply of the indoor unit, and remove the decorative panel. Removing the decorative panel should be performed according to the Installation Manual for the decorative panel or the Service Manual.

3 This IR receiver kit can be attached to any of four corners: ①, ②, ③ and ④.
Determine the attachment location according to the purchaser's request.

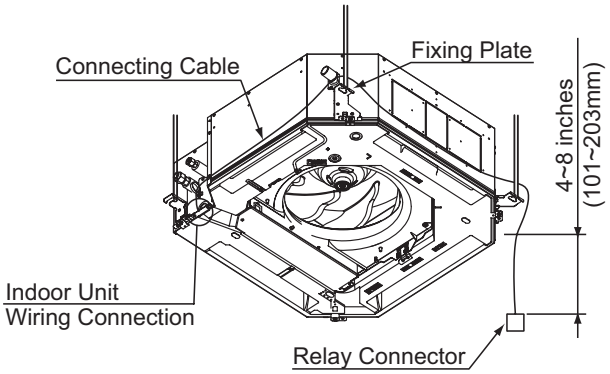
NOTE:
The DIP switch setting for the IR receiver kit is possible at more than one function. If the optional function selection is required, perform work according to the section, "Optional Functions" before the IR receiver kit is attached to the decorative panel.



4 Connect the accessory connecting cable to the terminal block.
Open the electrical box cover of the indoor unit. Attach the connecting cable to terminals A and B in the electrical box. (There is no polarity with terminals A and B.)



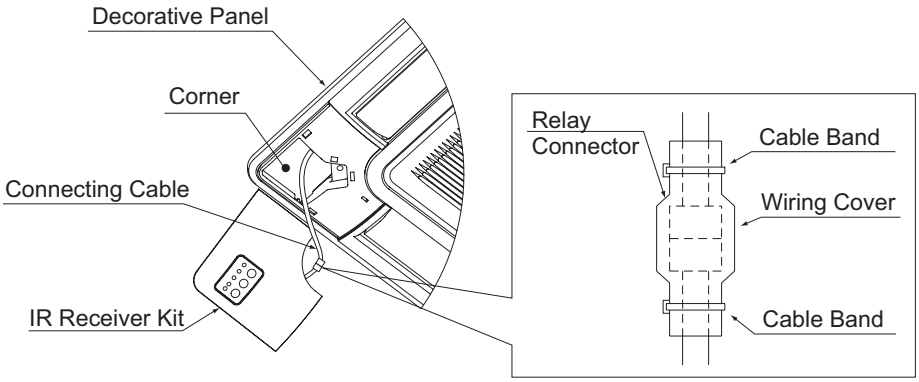
5 After attaching the connecting cable to each terminal, take it out to inside the false ceiling or outside of the unit. Connect it to the IR receiver kit. Refer to the “Installation and Maintenance Manual” of the indoor unit for indoor unit wiring instruction. When running the connecting cable, run it to the installation position of the IR receiver kit through the top of the fixing plate for the indoor unit. After running the connecting cable, take the distance (from 4 inches to 8 inches (from 101mm to 203mm) from the indoor unit under surface to the connecting cable as shown in the figure at the right.
After running the connecting cable, clamp the extra length of the connecting cable using the cable band and store it inside the ceiling.



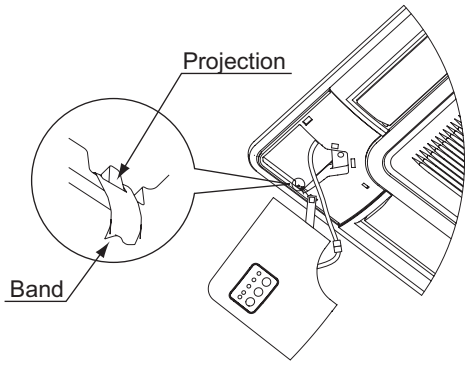
6 Attach the decorative panel.
Refer to the Installation Manual for the decorative panel.

7 After the installation work for the decorative panel is completed, attach the IR receiver kit.

(1) Take the connecting cable out from the corner of the decorative panel. Connect the wiring for the IR receiver kit to the relay connector as shown below.
After connecting, cover the relay connector connection with the wiring cover, and attach the wiring cover with the cable bands.

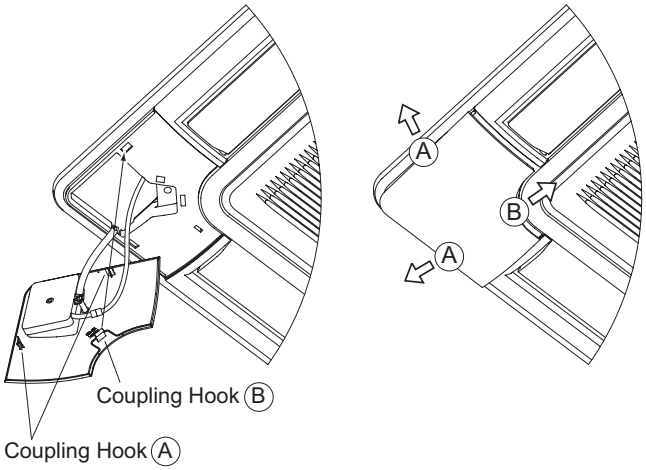


(2) Affix the band at the rear side of the IR receiver kit onto the projection at the decorative panel as shown in the figure at the right.

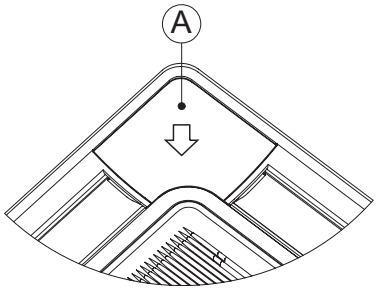


(3) While pushing the wiring into the corner, insert two coupling hooks at Ⓐ to the square hole of the decorative panel, and push the IR receiver kit in the direction of the arrow (Ⓐ) shown at the far right. Then, insert the fixing hook at Ⓑ to the square hole of the air panel.

NOTE:
Securely affix the coupling hooks of the IR receiver kit to the decorative panel to avoid damage to the fixing hooks.



(4) Removing Corner Cover
The corner covers can be removed pulling the Ⓐ part toward the arrow direction.



8 After the installation work for the IR receiver kit is completed, attach the corner covers (three parts). For details, refer to the Installation Manual for the decorative panel.

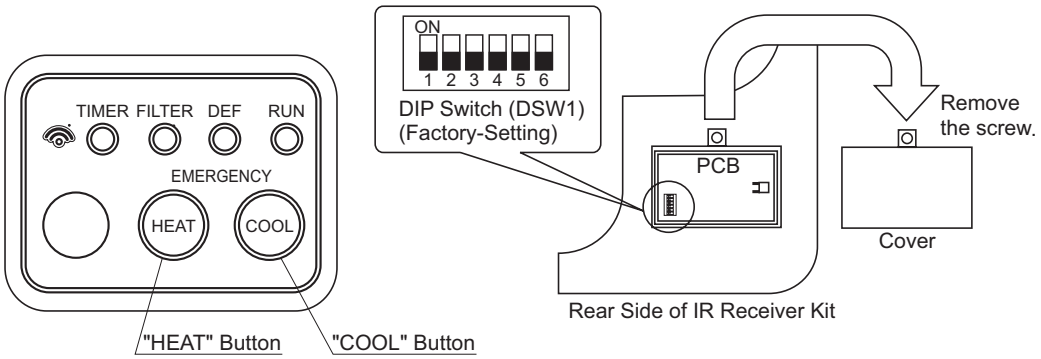
NOTE:
After the IR receiver kit is attached to the decorative panel, the one corner cover (attached with the decorative panel) becomes unnecessary.

3.8.6 Optional Functions

⚠WARNING

Turn OFF the power supply completely before setting the DIP switch for the IR receiver kit.
Not turning off the power may cause an electric shock.

1 The following switches are on the IR receiver kit.



2 Emergency Operation Setting

"COOL" and "HEAT" switches are used for emergency operation when the batteries for the wireless controller are low.

(1) Switch "COOL": Press "COOL" so that the cooling operation is started.
Press "COOL" again so that the cooling operation is stopped.

(2) Switch "HEAT": Press "HEAT" so that the heating operation is started.
Press "HEAT" again so that the heating operation is stopped.

NOTE:

During an emergency operation, a yellow light "((•))" flashes (0.5 second ON/0.5 second OFF).
The temperature setpoint and the fan speed for the cooling/heating operation are the same as before starting an emergency operation.

3 The DIP switch (DSW1) is for the optional function selection. If the optional function selection is required, set the DIP switch as follows.

Optional Function	DIP Switch Setting (DSW1)						Details
	1	2	3	4	5	6	
Main/Sub Setting	O	X	X	X	X	X	Change main (OFF setting)/ sub (ON setting) wireless controller for a two-wireless controller system.
Identifying of Indoor Unit	X	O	X	X	X	X	It functions as B Mode (identification of indoor unit) of the wireless controller when it is "ON".
Invalidity of Emergency Operation	X	X	X	O	X	X	The switches for emergency operation are invalid.

O: ON
X: OFF

NOTICE

Review the following settings when a function for the IR receiver kit is selected from the wireless controller or the centralized controller.

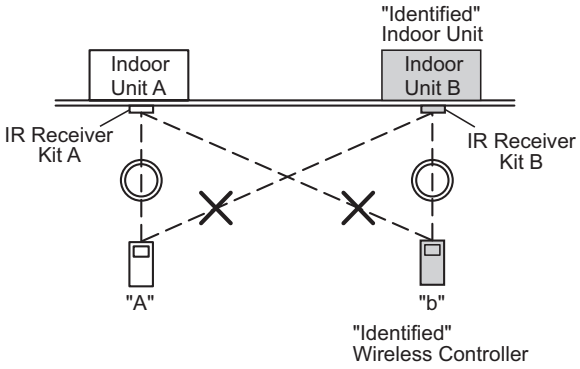
- The cooling lower limit for temperature setpoint and the heating upper limit for temperature setpoint are not available. The setting is available beyond the upper and lower limit for temperature setpoint from the wireless controller.
- The optional function setting "Fixing of Setting Temperature" is not available. When the operation mode is changed from the wireless controller, the indicated temperature on the wireless controller becomes the set temperature of the wired controller.

3.8.7 Identifying Indoor Units Installed for a Side-by-Side Operation

⚠WARNING

Turn OFF the power supply completely before setting the DIP switch for the IR receiver kit.
Not doing so may cause an electric shock.

If two indoor units are installed side by side, the commands from the wireless controller may be received by both indoor units. The function, “Identifying of Indoor Units Installed Side by Side” enables operation of the individual unit correctly without interfering with the other unit’s operation. As shown in the figure, the indoor units of A and B are set side by side. In this instance, unit B is set as “Identifying Indoor Units Installed Side by Side”.



Setting of Identifying of Indoor Units Installed Side by Side

1 IR Receiver Kit Setting
Set the number 2 pin of the IR receiver kit DIP switch (DSW1) at the “Identified” Unit B “ON” side.

2 Wireless Controller
Set the wireless controller according to the Installation and Maintenance Manual for the Wireless Controller.

Cancellation of Identifying of Indoor Units Installed Side by Side

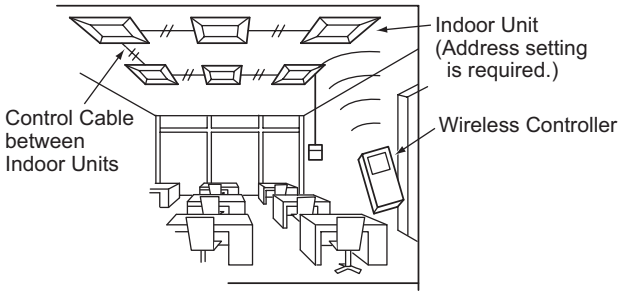
1 IR Receiver Kit Setting
Set the number 2 pin of the IR receiver kit DIP switch (DSW1) “OFF” side for cancellation.

2 Wireless Controller
Cancel the wireless controller setting according to the Installation and Maintenance Manual for the Wireless Controller.

3.8.8 Simultaneous Operation

Up to 16 indoor units can be simultaneously controlled using one wireless controller.
When multiple indoor units are installed in a large room, all the indoor units can be controlled to start/stop with only one wireless controller.

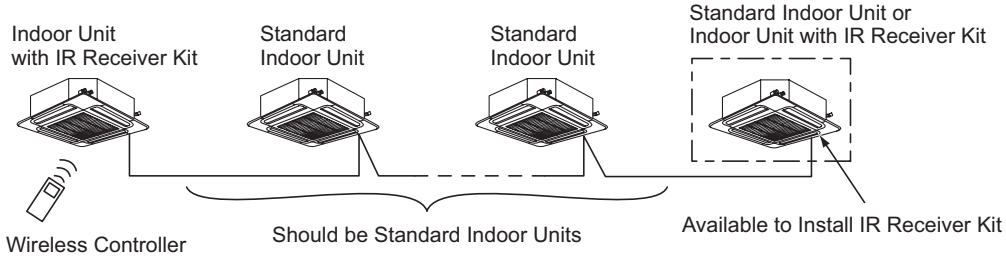
NOTE:
Do not apply a simultaneous operation for the indoor units installed separately in different rooms.
Some units may be left without turning OFF the power supply.



Control Example of Simultaneous Operation of Multiple Units

Installation of IR Receiver Kit

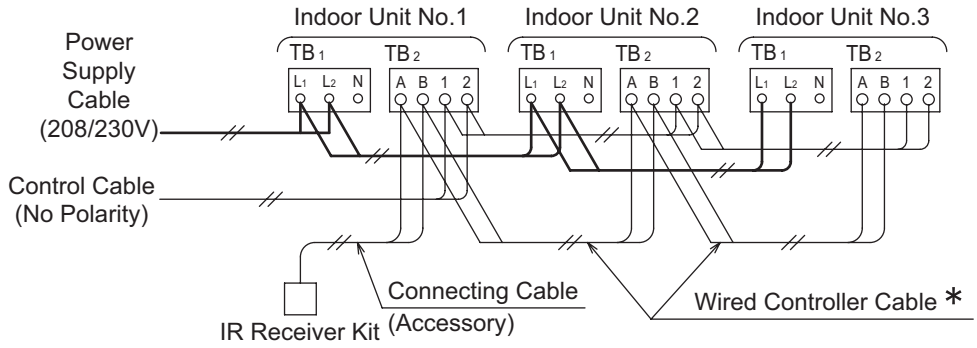
In an instance of simultaneous operation of multiple (up to 16) indoor units by the wireless controller, install the IR receiver kit only to the unit to be operated. Other units should be standard units without the IR receiver kit. If multiple IR receiver kits are required to be installed, two IR receiver kits are the maximum.



Electrical Wiring Connecting and Setting

1 Connection between Indoor Units
Perform the connection work as shown below.

Power Supply Cable 208/230V



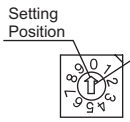
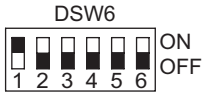
* For twin, triple or quad combinations, a communication cable for the wireless controller is not required.

Use the field-supplied communication cable (AWG18) for the wired controller cable. The total length should be within 1640ft (500m). If the total length is less than 98ft (30m), AWG22 cables can be used.

2 Do not run the connected wireless controller cable and the power supply cable (208/230V) in parallel in the indoor units.
Stabilize the cable with cable bands. Along with the wiring outside the indoor units, the control cables should not run with the power supply cable (208/230V). Keep a separation of more than 12 inches (30cm) or run the cable through a grounded metal conduit.

3 Unit Number Setting
The indoor unit numbers are set by the auto-address function. Therefore, an indoor unit number setting is not required. If the indoor unit number is fixed, set the unit numbers of all indoor units respectively and serially. It is recommended that the unit number settings begin with “1”. The setting is set not to overlap the unit number.

Unit Number Setting

DSW6 (Tens Digit)	RSW1 (Units Digit)	Ex.: Set for No. 16 Unit
		 Set No.1 pin ON. Set at "6".
Factory setting for DSW6 and RSW1 were set to "0". Max. 63 units are available for setting.		

3.8.9 Test Run by Wireless Controller (CIR01)

After all installations are completed, a test run should be performed.

(1) Perform the test run according to the installation manual for the wireless controller.

(2) The test run for the wireless controller will be completed in two hours. If the TIMER indicator (green) is flashing (0.5 second ON/0.5 second OFF) after two hours, an alarm may occur. Operate the indoor unit and check for abnormality.

3.8.10 Alarm Indication

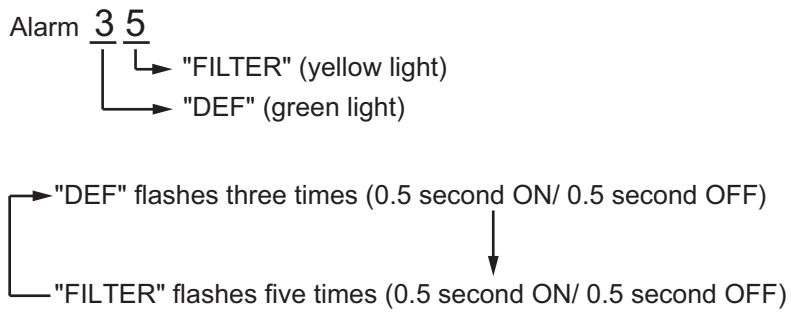
NOTICE

- If a malfunction occurs such as a safety device actuation, during the run test or the normal operation, “RUN” (red light) flashes (0.5 second ON/0.5 second OFF).
- The alarm codes are indicated by the flashing of “DEF” (green light) and “FILTER” (yellow light).

  The first LED light is green. The number of times this LED flashes (0.5 second ON and OFF) will tell you the “DEF” Alarm Code.

  The second LED light is yellow. The number of times this LED flashes (0.5 second ON and OFF) will tell you the “FILTER” Alarm Code.

Example



These signals are repeated until the alarm is reset.

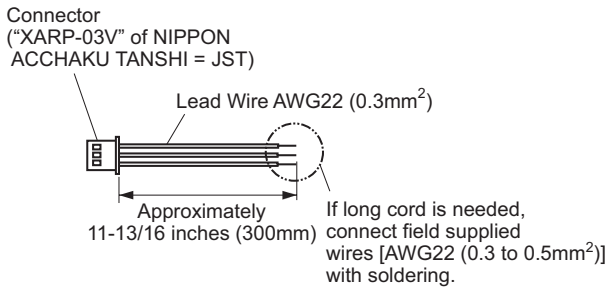
- ”RUN” (red light) flashing (1 second ON/1 second OFF) indicates an abnormal transmission (connector loose, connector disconnection, broken wire, or incorrect wiring, or something similar) between the indoor unit and the IR receiver kit.
- When the IR receiver kit is connected to multiple indoor units, the alarm code is indicated for each indoor unit in order.

Alarm Code Table

Further details for alarm codes can be found in the Installation and Maintenance Manual.

3.9 3P Connector Cable: PCC-1A

This accessory connector is utilized to provide remote start/stop capability (binary input) to an indoor unit and provide operating status (binary output) of an indoor unit's functions. (System Parts: One set contains five 3P cords.)



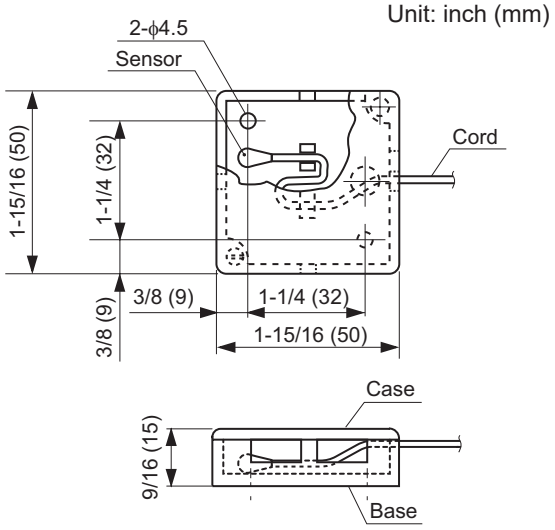
3P Connector Cable

Name	3P Connector Cable
Model	PCC-1A
Remarks	One set contains five 3P connector cables.

3.10 Remote Sensor: THM-R2A

When a remote temperature sensor is installed with an indoor unit, the indoor unit is configurable to use the temperature at the location of the remote sensor OR the average of the unit's return air temperature and the temperature at the location of the remote sensor to control that unit. (reference the specific controller Installation Manual for function configuration details)

Unit: inch (mm)



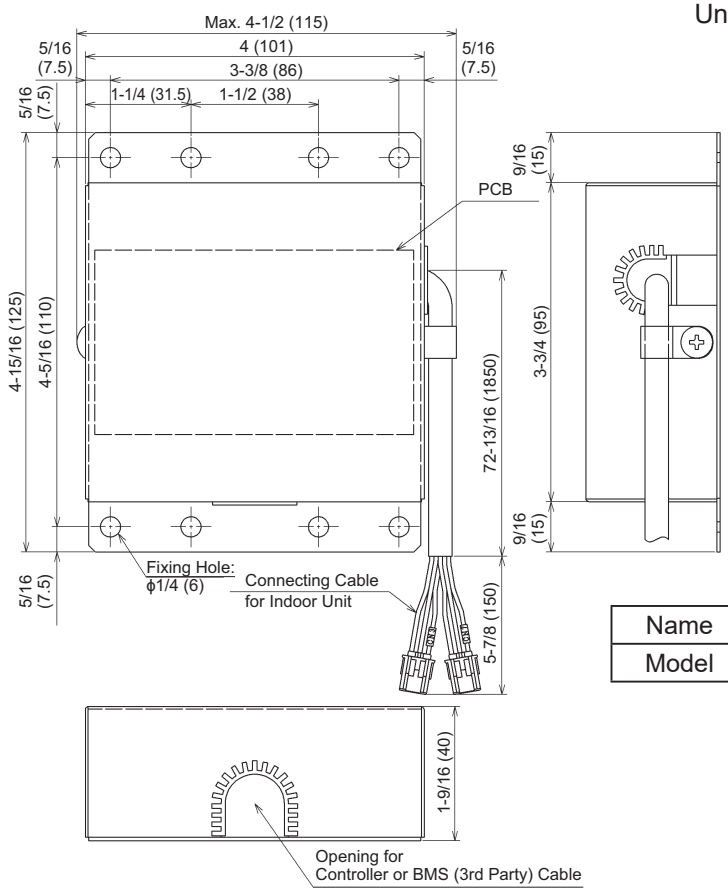
Specifications

Item		Specification
Model		THM-R2A
Case	Material	ABS Resin
	Color	Silky White
Base	Material	ABS Resin
	Color	Silky White
Sensor	Part Name	Thermistor
	Cord Length	approx. 26 ft (8m)

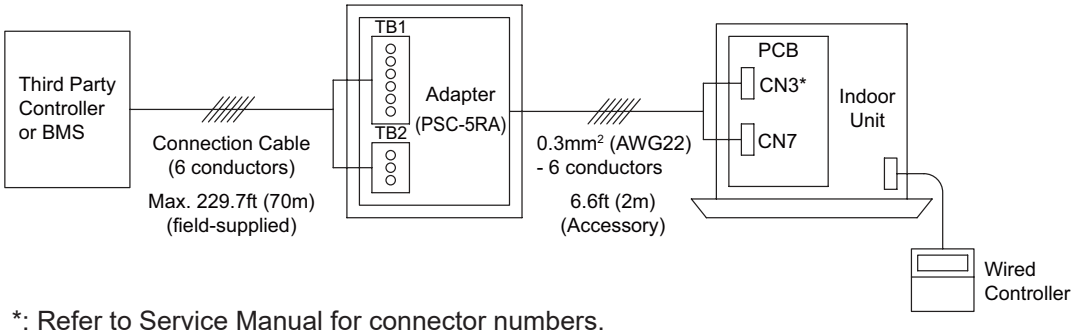
3.11 Relay and 3 Pin Connector Kit: PSC-5RA

This relay kit provides for basic input/output integration functionality (indoor unit ON/OFF, operating mode, alarm status) to third party controllers and Building Management Systems (BMS).

Unit: inch (mm)



Name	Relay and 3 Pin Connector Kit
Model	PSC-5RA



*: Refer to Service Manual for connector numbers.

Item	Signal	Description	Specifications
Third Party Controller or BMS	Input 1	Input level signal or pulse signal for voltage from the third party controller or BMS	Voltage: 12VDC, 10mA Voltage: 24VDC, 10mA Pulse Range: 500ms or more
	Input 2		
Third Party Controller or BMS	Output 1	Output signal from the wired controller	24VDC From 10mA to 1A
	Output 2		

Refer to the Indoor Unit Manual for Input/Output mode setting by the wired controller.

4. Selection Data

4.1 Selection Guide

Refer to Engineering Manual for the Outdoor Unit.

4.2 Capacity Table

4.2.1 Cooling Capacity

Models: (H,Y,C)IC4008B21S, (H,Y,C)IC4012B21S, (H,Y,C)IC4015B21S, (H,Y,C)IC4018B21S, (H,Y,C)IC4024B21S, (H,Y,C)IC4030B21S, (H,Y,C)IC4036B21S and (H,Y,C)IC4048B21S

Model	Indoor Air Temp (°F WB) / Outdoor Air Temp (°F DB)	61		63		65		67		69		71		73	
		TC (MBH)	SHC (MBH)	TC (MBH)	SHC (MBH)	TC (MBH)	SHC (MBH)	TC (MBH)	SHC (MBH)	TC (MBH)	SHC (MBH)	TC (MBH)	SHC (MBH)	TC (MBH)	SHC (MBH)
008	70	8.3	6.5	8.4	6.4	8.6	6.5	8.7	6.4	9.0	6.6	9.2	6.5	9.4	6.6
	80	8.0	6.2	8.2	6.3	8.3	6.3	8.4	6.3	8.7	6.4	8.9	6.4	9.1	6.5
	95	7.5	6.1	7.7	6.1	7.8	6.1	8.0	6.2	8.3	6.2	8.5	6.3	8.7	6.3
	110	5.4	5.0	5.3	4.9	5.2	4.9	5.1	4.8	5.1	4.8	5.2	4.9	5.2	4.9
	114	4.5	4.2	4.5	4.5	4.4	4.4	4.4	4.4	4.4	3.7	4.4	4.4	4.5	3.7
	118	3.7	3.7	3.7	3.4	3.7	3.7	3.7	3.7	3.7	3.2	3.7	3.7	3.7	3.4
012	70	12.4	9.5	12.7	9.7	12.9	9.7	13.0	9.6	13.5	9.7	13.8	9.8	14.2	9.8
	80	12.1	9.4	12.3	9.5	12.5	9.5	12.6	9.5	13.0	9.5	13.4	9.6	13.7	9.7
	95	11.3	9.0	11.5	9.1	11.8	9.2	12.0	9.2	12.4	9.3	12.8	9.3	13.1	9.4
	110	8.1	7.5	7.9	7.3	7.8	7.5	7.6	7.4	7.7	7.0	7.7	7.4	7.8	7.4
	114	6.8	6.6	6.7	5.6	6.7	5.6	6.6	6.6	6.6	5.6	6.7	6.7	6.7	6.7
	118	5.5	5.5	5.5	5.0	5.6	4.8	5.6	5.6	5.6	4.8	5.6	5.6	5.6	5.6
015	70	15.5	12.1	15.8	12.2	16.2	12.2	16.3	12.2	16.8	12.3	17.3	12.3	17.7	12.4
	80	15.1	11.8	15.3	11.9	15.6	11.9	15.8	12.0	16.3	12.1	16.8	12.1	17.1	12.1
	95	14.1	11.4	14.4	11.5	14.7	11.5	15.0	11.6	15.5	11.8	16.0	11.8	16.3	11.9
	110	10.1	9.4	9.9	9.3	9.7	9.1	9.5	9.0	9.6	9.1	9.7	9.2	9.7	9.1
	114	8.5	8.4	8.4	8.4	8.3	8.3	8.2	7.1	8.3	7.2	8.3	8.3	8.4	7.2
	118	6.9	6.9	6.9	6.3	6.9	6.9	7.0	6.5	7.0	6.2	7.0	7.0	7.0	6.3
018	70	18.6	16.6	19.0	16.7	19.4	16.7	19.6	16.9	20.2	17.0	20.7	17.2	21.2	17.4
	80	18.1	16.1	18.4	16.2	18.7	16.3	18.9	16.4	19.6	16.7	20.1	16.9	20.6	17.1
	95	16.9	15.4	17.3	15.7	17.6	15.7	18.0	16.0	18.6	16.2	19.2	16.3	19.6	16.7
	110	12.1	12.1	11.9	11.9	11.6	11.6	11.4	11.4	11.5	11.5	11.6	11.6	11.7	11.7
	114	10.2	10.2	10.1	10.1	10.0	10.0	9.9	9.9	9.9	9.9	10.0	10.0	10.0	10.0
	118	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.4	8.4	8.4	8.4	8.4	8.4
024	70	24.8	19.8	25.3	20.0	25.9	20.2	26.1	20.1	26.9	20.4	27.7	20.5	28.3	20.7
	80	24.1	19.5	24.5	19.6	24.9	19.7	25.2	19.7	26.1	19.8	26.8	20.1	27.4	20.3
	95	22.6	18.8	23.0	18.9	23.5	19.0	24.0	19.2	24.8	19.6	25.6	19.7	26.1	19.8
	110	16.2	15.7	15.8	15.5	15.5	15.3	15.2	15.2	15.3	15.3	15.5	15.5	15.5	15.5
	114	13.6	13.6	13.5	13.5	13.3	13.3	13.2	13.2	13.2	13.2	13.3	13.3	13.4	13.4
	118	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.2	11.2	11.2	11.2	11.2	11.2
030	70	31.0	25.4	31.6	25.6	32.3	25.8	32.6	25.8	33.7	26.3	34.6	26.6	35.4	26.9
	80	30.2	25.1	30.7	25.2	31.2	25.3	31.6	25.6	32.6	25.8	33.5	26.1	34.3	26.4
	95	28.2	24.0	28.8	24.2	29.4	24.4	30.0	24.6	31.0	25.1	32.0	25.3	32.6	25.4
	110	20.2	20.0	19.8	19.8	19.4	19.4	19.0	19.0	19.2	19.2	19.3	19.3	19.4	19.4
	114	17.0	17.0	16.8	16.8	16.6	16.6	16.5	16.5	16.6	16.6	16.7	16.7	16.7	16.7
	118	13.8	13.8	13.8	13.8	13.9	13.9	13.9	13.9	13.9	13.9	14.0	14.0	14.0	14.0
036	70	37.2	30.5	38.0	30.8	38.8	31.0	39.1	30.9	40.4	31.5	41.5	32.0	42.5	32.3
	80	36.2	30.0	36.8	30.2	37.4	30.3	37.9	30.7	39.1	30.9	40.2	31.4	41.2	31.7
	95	33.8	28.7	34.6	29.1	35.3	29.3	36.0	29.5	37.2	30.1	38.4	30.3	39.2	30.6
	110	24.2	24.0	23.8	23.8	23.3	23.3	22.8	22.8	23.0	23.0	23.2	23.2	23.3	23.3
	114	20.4	20.4	20.2	20.2	20.0	20.0	19.7	19.7	19.9	19.9	20.0	20.0	20.1	20.1
	118	16.6	16.6	16.6	16.6	16.7	16.7	16.7	16.7	16.7	16.7	16.8	16.8	16.8	16.8
048	70	49.5	40.6	50.6	41.0	51.7	41.4	52.1	41.2	53.9	42.0	55.3	42.6	56.6	43.0
	80	48.3	40.1	49.0	40.2	49.8	40.3	50.5	40.9	52.2	41.2	53.7	41.9	54.9	42.3
	95	45.1	38.3	46.1	38.7	47.0	39.0	48.0	39.4	49.6	40.2	51.2	40.4	52.2	40.7
	110	32.3	32.0	31.7	31.7	31.0	31.0	30.4	30.4	30.7	30.7	30.9	30.9	31.1	31.1
	114	27.2	27.2	26.9	26.9	26.6	26.6	26.3	26.3	26.5	26.5	26.7	26.7	26.8	26.8
	118	22.1	22.1	22.2	22.2	22.2	22.2	22.2	22.2	22.3	22.3	22.4	22.4	22.5	22.5

TC: Total Capacity
SHC: Sensible Heat Capacity

Refer to Outdoor Unit Capacity Tables as actual performance data affected by indoor and outdoor unit combination.

4.2.2 Heating Capacity

Models: (H,Y,C)IC4008B21S, (H,Y,C)IC4012B21S, (H,Y,C)IC4015B21S, (H,Y,C)IC4018B21S, (H,Y,C)IC4024B21S, (H,Y,C)IC4030B21S, (H,Y,C)IC4036B21S and (H,Y,C)IC4048B21S

Model	Indoor Air Temp (°F DB) / Outdoor Air Temp (°F WB)	63	66	68	70	74	77
		TC (MBH)	TC (MBH)	TC (MBH)	TC (MBH)	TC (MBH)	TC (MBH)
008	21	7.1	7.1	7.1	7.1	7.0	7.0
	25	7.4	7.4	7.4	7.4	7.3	7.2
	29	7.8	7.8	7.8	7.8	7.6	7.5
	33	8.1	8.1	8.1	8.1	8.0	7.8
	37	8.5	8.5	8.5	8.5	8.3	8.1
	41	8.8	8.8	8.8	8.8	8.6	8.4
	43	9.0	9.0	9.0	9.0	8.7	8.5
	47	9.4	9.4	9.4	9.3	9.0	8.5
	51	9.7	9.7	9.7	9.6	9.0	8.5
	55	10.2	10.1	9.8	9.6	9.0	8.5
	59	10.2	10.1	9.8	9.6	9.0	8.5
012	21	10.6	10.6	10.6	10.6	10.5	10.4
	25	11.1	11.1	11.2	11.2	11.0	10.9
	29	11.7	11.7	11.7	11.7	11.5	11.3
	33	12.2	12.2	12.2	12.2	11.9	11.7
	37	12.7	12.7	12.7	12.7	12.4	12.2
	41	13.3	13.3	13.2	13.2	12.9	12.6
	43	13.5	13.5	13.5	13.5	13.1	12.8
	47	14.1	14.0	14.0	14.0	13.5	12.8
	51	14.6	14.6	14.6	14.4	13.5	12.8
	55	15.3	15.1	14.8	14.4	13.5	12.8
	59	15.3	15.1	14.8	14.4	13.5	12.8
015	21	13.4	13.4	13.4	13.4	13.3	13.1
	25	14.0	14.0	14.0	14.1	13.8	13.7
	29	14.7	14.7	14.7	14.7	14.4	14.2
	33	15.4	15.4	15.4	15.4	15.0	14.8
	37	16.0	16.0	16.0	16.0	15.6	15.3
	41	16.7	16.7	16.7	16.7	16.2	15.9
	43	17.0	17.0	17.0	17.0	16.5	16.1
	47	17.7	17.7	17.7	17.7	17.0	16.1
	51	18.4	18.4	18.3	18.2	17.0	16.1
	55	19.3	19.0	18.6	18.2	17.0	16.1
	59	19.3	19.0	18.6	18.2	17.0	16.1
018	21	15.7	15.7	15.7	15.8	15.6	15.5
	25	16.5	16.5	16.5	16.5	16.3	16.1
	29	17.3	17.3	17.3	17.3	17.0	16.7
	33	18.1	18.1	18.1	18.1	17.7	17.4
	37	18.9	18.9	18.9	18.8	18.4	18.0
	41	19.7	19.6	19.6	19.6	19.1	18.7
	43	20.1	20.0	20.0	20.0	19.4	19.0
	47	20.8	20.8	20.8	20.8	20.0	19.0
	51	21.6	21.6	21.6	21.4	20.0	19.0
	55	22.7	22.4	21.9	21.4	20.0	19.0
	59	22.7	22.4	21.9	21.4	20.0	19.0

Model	Indoor Air Temp (°F DB) / Outdoor Air Temp (°F WB)	63	66	68	70	74	77
		TC (MBH)	TC (MBH)	TC (MBH)	TC (MBH)	TC (MBH)	TC (MBH)
024	21	21.2	21.2	21.3	21.3	21.0	20.9
	25	22.3	22.3	22.3	22.3	22.0	21.7
	29	23.4	23.3	23.4	23.4	22.9	22.6
	33	24.4	24.4	24.4	24.4	23.9	23.5
	37	25.5	25.5	25.4	25.4	24.8	24.3
	41	26.5	26.5	26.5	26.5	25.7	25.2
	43	27.1	27.0	27.0	27.0	26.2	25.6
	47	28.1	28.1	28.1	28.0	27.0	25.6
	51	29.2	29.2	29.1	28.8	27.0	25.6
	55	30.6	30.2	29.5	28.8	27.0	25.6
	59	30.6	30.2	29.5	28.8	27.0	25.6
030	21	26.7	26.7	26.8	26.8	26.5	26.3
	25	28.1	28.1	28.1	28.1	27.7	27.4
	29	29.4	29.4	29.4	29.4	28.9	28.5
	33	30.7	30.7	30.7	30.7	30.1	29.5
	37	32.1	32.1	32.0	32.0	31.2	30.6
	41	33.4	33.4	33.4	33.3	32.4	31.7
	43	34.1	34.0	34.0	34.0	33.0	32.3
	47	35.4	35.4	35.3	35.3	34.0	32.3
	51	36.8	36.7	36.7	36.3	34.0	32.3
	55	38.6	38.1	37.2	36.3	34.0	32.3
	59	38.6	38.1	37.2	36.3	34.0	32.3
036	21	31.4	31.4	31.5	31.5	31.2	30.9
	25	33.0	33.0	33.0	33.1	32.6	32.2
	29	34.6	34.6	34.6	34.6	34.0	33.5
	33	36.2	36.1	36.1	36.1	35.4	34.7
	37	37.8	37.7	37.7	37.7	36.7	36.0
	41	39.3	39.3	39.2	39.2	38.1	37.3
	43	40.1	40.1	40.0	40.0	38.8	38.0
	47	41.7	41.6	41.6	41.5	40.0	38.0
	51	43.3	43.2	43.1	42.7	40.0	38.0
	55	45.4	44.8	43.8	42.7	40.0	38.0
	59	45.4	44.8	43.8	42.7	40.0	38.0
048	21	42.4	42.4	42.5	42.6	42.1	41.7
	25	44.6	44.6	44.6	44.6	44.0	43.5
	29	46.7	46.7	46.7	46.7	45.8	45.2
	33	48.8	48.8	48.8	48.8	47.7	46.9
	37	51.0	50.9	50.9	50.9	49.6	48.6
	41	53.1	53.0	53.0	53.0	51.5	50.4
	43	54.2	54.1	54.0	54.0	52.4	51.2
	47	56.3	56.2	56.1	56.1	54.0	51.2
	51	58.4	58.3	58.2	57.7	54.0	51.2
	55	61.2	60.5	59.1	57.7	54.0	51.2
	59	61.2	60.5	59.1	57.7	54.0	51.2

TC: Total Capacity

Refer to Outdoor Unit Capacity Tables as actual performance data affected by indoor and outdoor unit combination.

Annex

Important Notices about Indoor Units Produced in September 2019 or Later*1

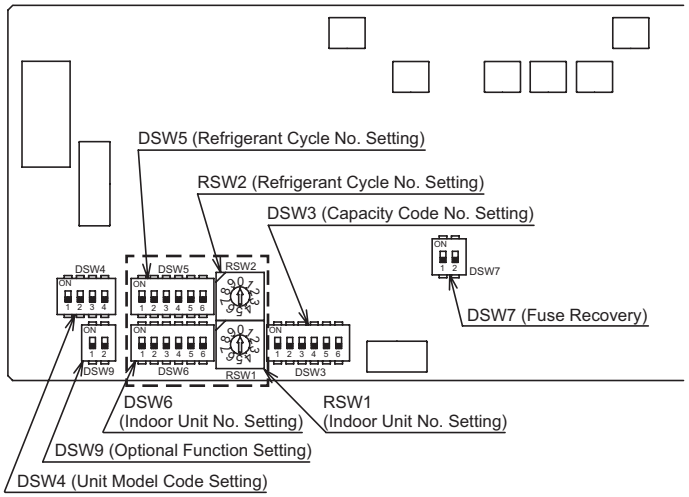
*1 Refer to Technical Bulletin for applicable serial numbers.

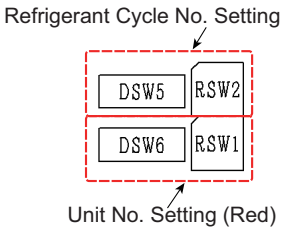
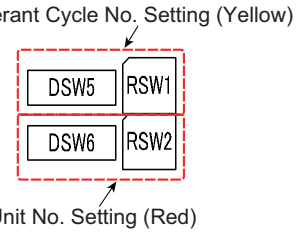
2. Indoor Unit Type

2.11.4 Wiring Diagram (Continued)

Control PCB for the following models are changed and layout of rotary switch and DIP switch settings are changed. Due to this change, wiring diagrams are also changed.

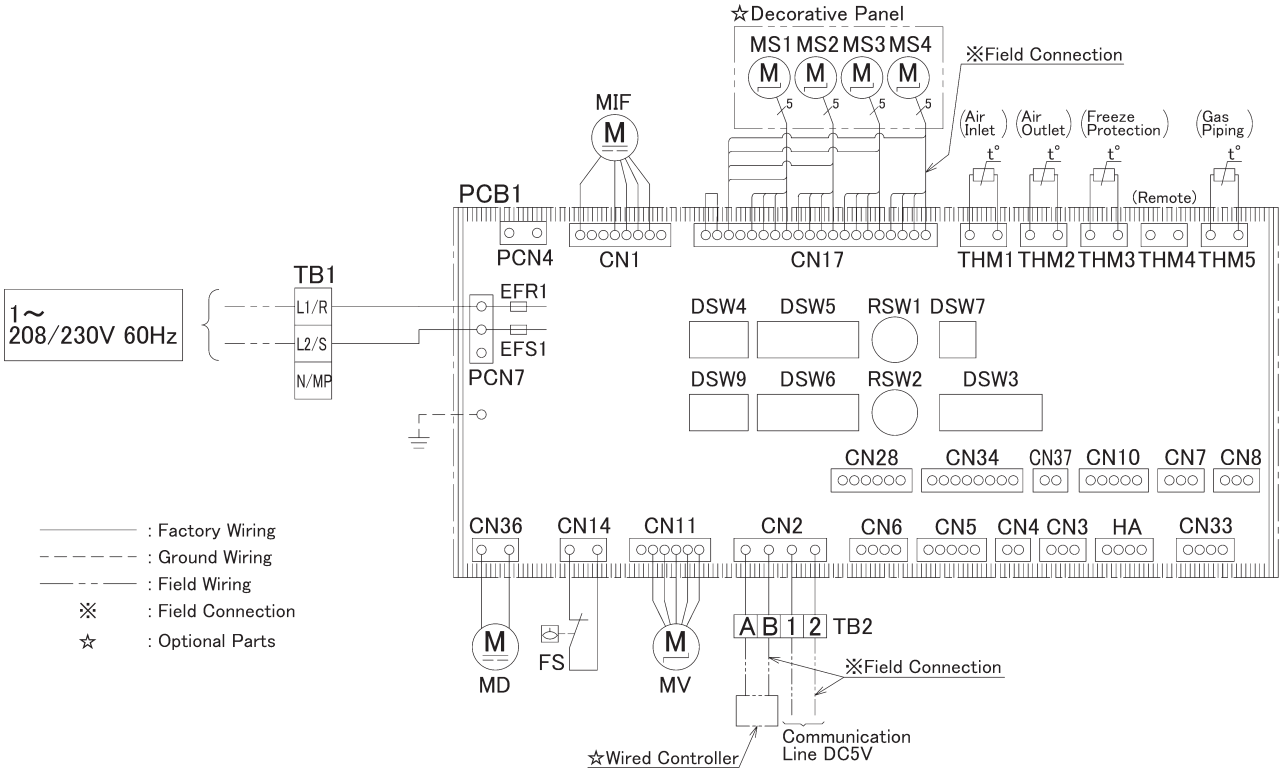
4-Way Cassette [(H,Y,C)IC4008 to 048B21S]
2-Way Cassette [(H,Y,C)IC2018, 024B21S]
1-Way Cassette [(H,Y,C)IC1006 to 015B21S]
4-Way Cassette Mini [(H,Y,C)ICM008 to 018B21S]
Ceiling Suspended [(H,Y,C)ICS015 to 036B21S]



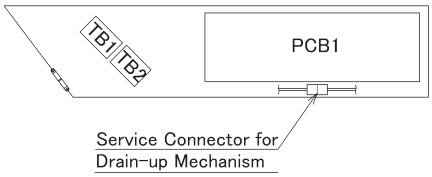
Produced in August 2019 or Earlier	Produced in September 2019 or Later
Arrangement of Rotary Switch and DIP Switch	Arrangement of Rotary Switch and DIP Switch
	
Unit No. Setting (RSW1 and DSW6) DSW6 (Tens Digit) / RSW1 (Units Digit) Setting Position — Set by inserting slotted screwdriver into the groove. ON / OFF 1 2 3 4 5 6 Before shipment, DSW6 and RSW1 are set at "0". For the units supporting H-LINK II, the unit No. can be set for Max. 64 indoor units (No.0~63). Ex.) Set at No.16 Unit DSW6: ON / OFF 1 2 3 4 5 6 Set No.1 Pin at ON side RSW1 Set at "6"	Unit No. Setting (RSW2 and DSW6) DSW6 (Tens Digit) / RSW2 (Units Digit) Setting Position — Set by inserting slotted screwdriver into the groove. ON / OFF 1 2 3 4 5 6 Before shipment, DSW6 and RSW2 are set at "0". For the units supporting H-LINK II, the unit No. can be set for Max. 64 indoor units (No.0~63). Ex.) Set at No.16 Unit DSW6: ON / OFF 1 2 3 4 5 6 Set No.1 Pin at ON side RSW2 Set at "6"
Refrigerant Cycle No. Setting (RSW2 and DSW5) DSW5 (Tens Digit) / RSW2 (Units Digit) Setting Position — Set by inserting slotted screwdriver into the groove. ON / OFF 1 2 3 4 5 6 Before shipment, DSW5 and RSW2 are set at "0". For the units supporting H-LINK II, the ref. cycle No. can be set for Max. 64 cycles. (No. 0~63) Ex.) Set at No.5 Cycle DSW5: ON / OFF 1 2 3 4 5 6 Set All Pins OFF RSW2 Set at "5"	Refrigerant Cycle No. Setting (RSW1 and DSW5) DSW5 (Tens Digit) / RSW1 (Units Digit) Setting Position — Set by inserting slotted screwdriver into the groove. ON / OFF 1 2 3 4 5 6 Before shipment, DSW5 and RSW1 are set at "0". For the units supporting H-LINK II, the ref. cycle No. can be set for Max. 64 cycles. (No. 0~63) Ex.) Set at No.5 Cycle DSW5: ON / OFF 1 2 3 4 5 6 Set All Pins OFF RSW1 Set at "5"

4-Way Cassette Type Indoor Unit

Models: (H,Y,C)IC4008B21S, (H,Y,C)IC4012B21S, (H,Y,C)IC4015B21S, (H,Y,C)IC4018B21S, (H,Y,C)IC4024B21S, (H,Y,C)IC4030B21S, (H,Y,C)IC4036B21S and (H,Y,C)IC4048B21S with Decorative Panel P-AP160NA2

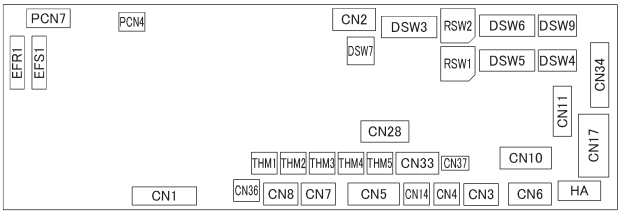


Electrical Control Box of Indoor Unit



Printed Circuit Board

PCB1

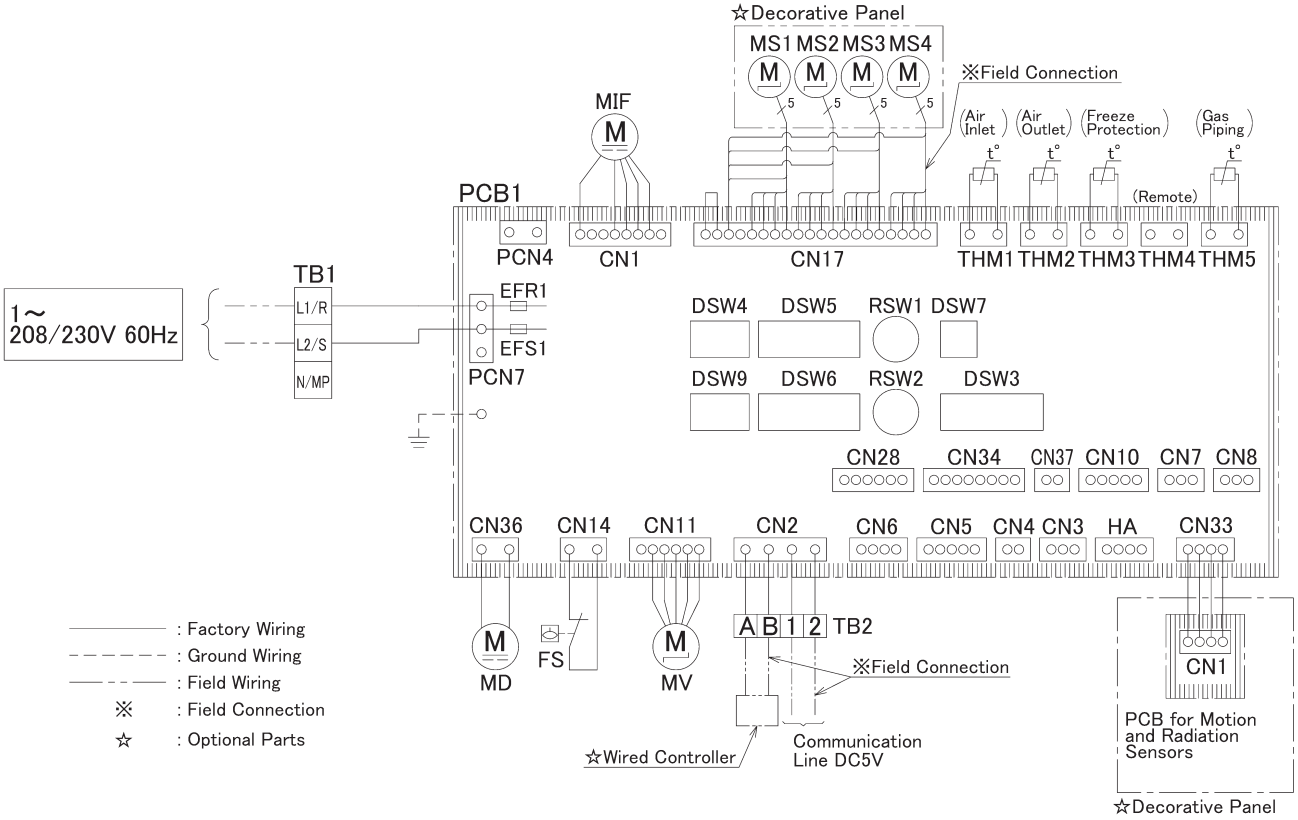


NOTE:

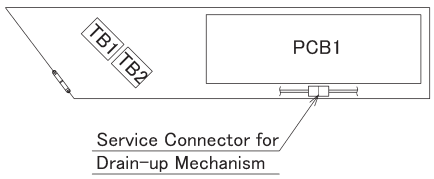
1. All the field wiring and equipment must comply with local codes.

Mark	Name
CN3	Optional Connector (For Signal Input)
CN7,8	Optional Connector (For Signal Output)
CN33	Optional Connector (For Motion and Radiation Sensors)
DSW3, 4, 7, 9	DIP Switch for Setting
EFR1, EFS1	Fuse
FS	Float Switch
MIF	Motor for Indoor Fan
MS1～4	Motor for Automatic Swing Louver
MV	Electronic Expansion Valve
MD	Motor for Drain-up Mechanism
PCB1	Printed Circuit Board
RSW1	Rotary Switch for Refrigerant Cycle No. Setting (Ones Digit)
DSW5	DIP Switch for Refrigerant Cycle No. Setting (Tens Digit)
RSW2	Rotary Switch for Unit No. Setting (Ones Digit)
DSW6	DIP Switch for Unit No. Setting (Tens Digit)
TB1,2	Terminal Block
THM1～3, 5	Thermistor
THM4	Optional Connector (For Remote Temperature Sensor)
CN4～6, 10, 28, 34, 37, HA, PCN4	Reserved Connector on PCB

Models: (H,Y,C)IC4008B21S, (H,Y,C)IC4012B21S, (H,Y,C)IC4015B21S, (H,Y,C)IC4018B21S, (H,Y,C)IC4024B21S, (H,Y,C)IC4030B21S, (H,Y,C)IC4036B21S and (H,Y,C)IC4048B21S with Decorative Panel P-AP160NAE1

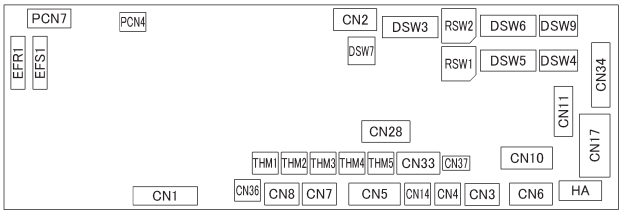


Electrical Control Box of Indoor Unit



Printed Circuit Board

PCB1



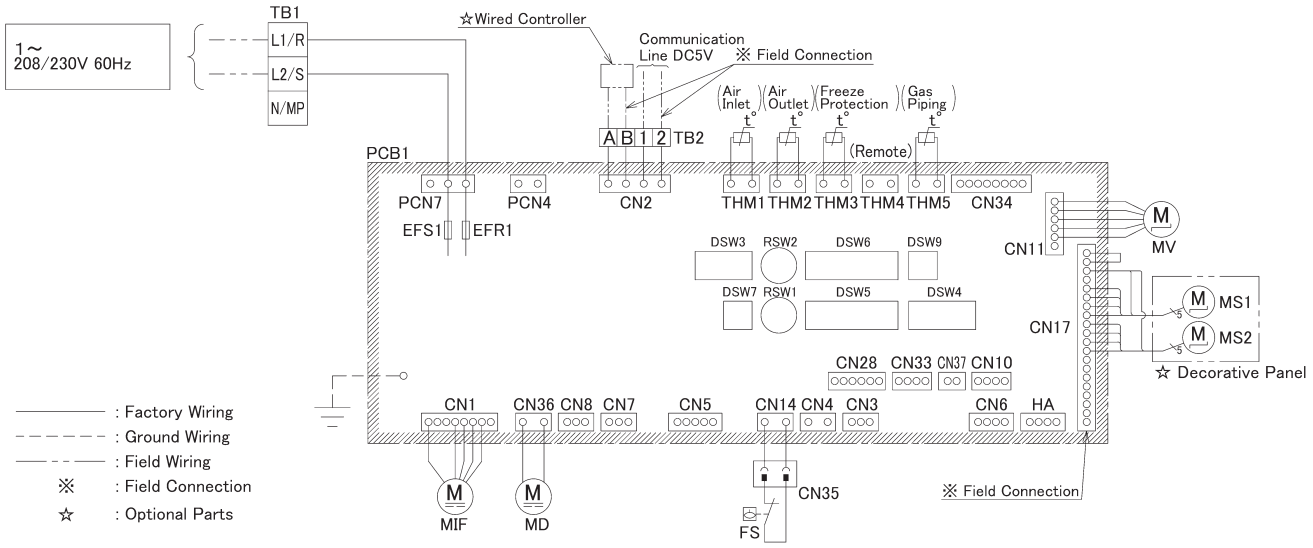
NOTE:

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

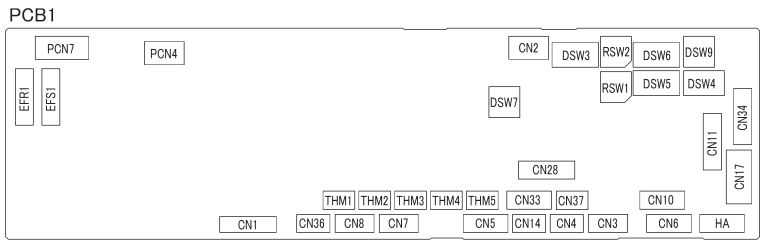
Mark	Name
CN3	Optional Connector (For Signal Input)
CN7,8	Optional Connector (For Signal Output)
DSW3, 4, 7, 9	DIP Switch for Setting
EFR1, EFS1	Fuse
FS	Float Switch
MIF	Motor for Indoor Fan
MS1～4	Motor for Automatic Swing Louver
MV	Electronic Expansion Valve
MD	Motor for Drain-up Mechanism
PCB1	Printed Circuit Board
RSW1	Rotary Switch for Refrigerant Cycle No. Setting (Ones Digit)
DSW5	DIP Switch for Refrigerant Cycle No. Setting (Tens Digit)
RSW2	Rotary Switch for Unit No. Setting (Ones Digit)
DSW6	DIP Switch for Unit No. Setting (Tens Digit)
TB1,2	Terminal Block
THM1～3, 5	Thermistor
THM4	Optional Connector (For Remote Temperature Sensor)
CN4～6, 10, 28, 34, 37, HA, PCN4	Reserved Connector on PCB

2-Way Cassette Type Indoor Unit

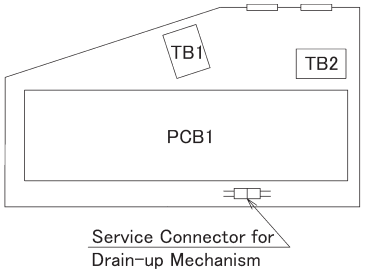
Models: (H,Y,C)IC2018B21S and (H,Y,C)IC2024B21S



Printed Circuit Board



Electrical Control Box of Indoor Unit



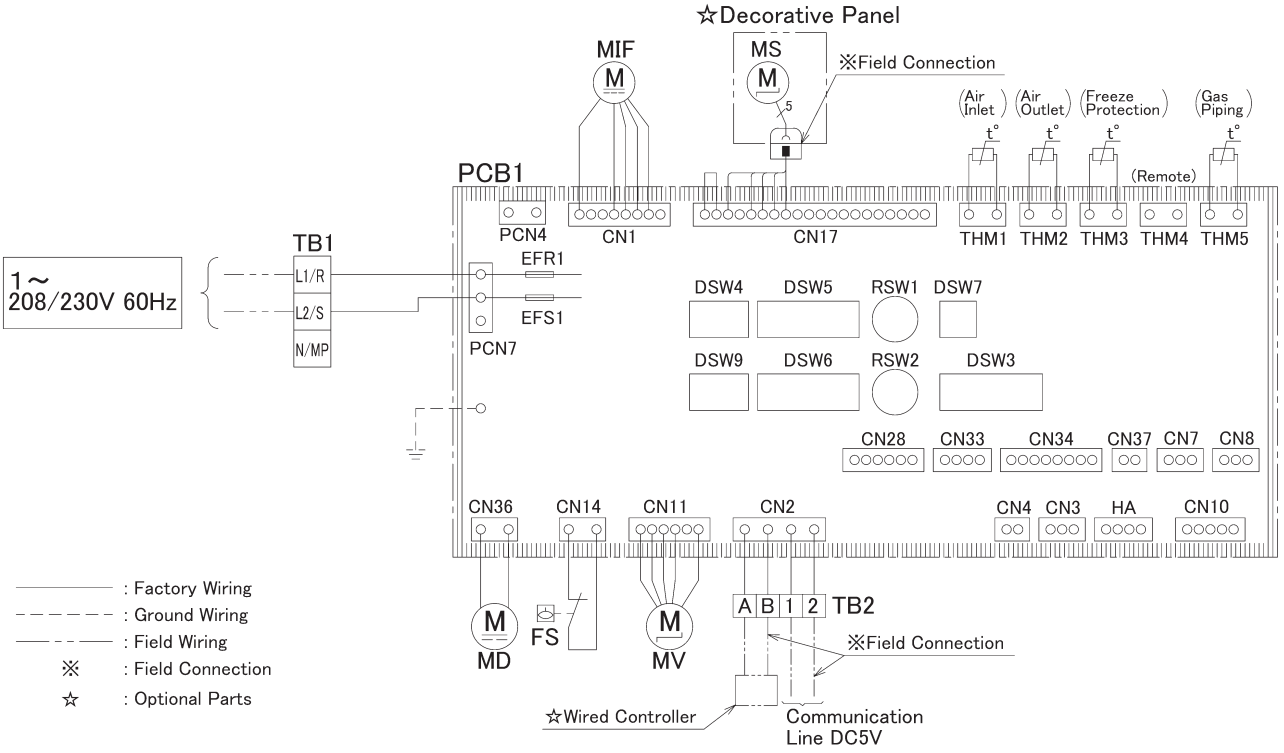
NOTE:

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

Mark	Name
CN3	Optional Connector (For Signal Input)
CN7,8	Optional Connector (For Signal Output)
CN10	Optional Connector (For Motion Sensor)
DSW3, 4, 7, 9	DIP Switch for Setting
EFR1, EFS1	Fuse
MIF	Motor for Indoor Fan
MS1, 2	Motor for Automatic Swing Louver
MV	Electronic Expansion Valve
MD	Motor for Drain-up Mechanism
PCB1	Printed Circuit Board
RSW1	Rotary Switch for Refrigerant Cycle No. Setting (Ones Digit)
DSW5	DIP Switch for Refrigerant Cycle No. Setting (Tens Digit)
RSW2	Rotary Switch for Unit No. Setting (Ones Digit)
DSW6	DIP Switch for Unit No. Setting (Tens Digit)
TB1,2	Terminal Block
THM1～3, 5	Thermistor
THM4	Optional Connector (For Remote Temperature Sensor)
CN4～6, 28, 33, 34, 37, HA, PCN4	Reserved Connector on PCB

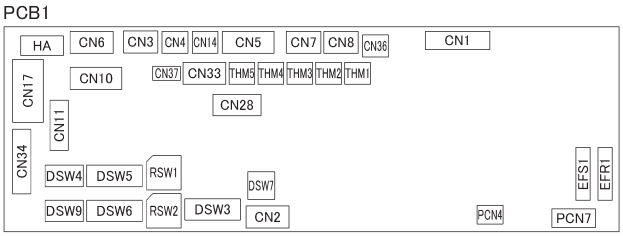
1-Way Cassette Type Indoor Unit

Models: (H,Y,C)IC1006B21S, (H,Y,C)IC1008B21S, (H,Y,C)IC1012B21S and (H,Y,C)IC1015B21S



Electrical Control Box of Indoor Unit

Printed Circuit Board



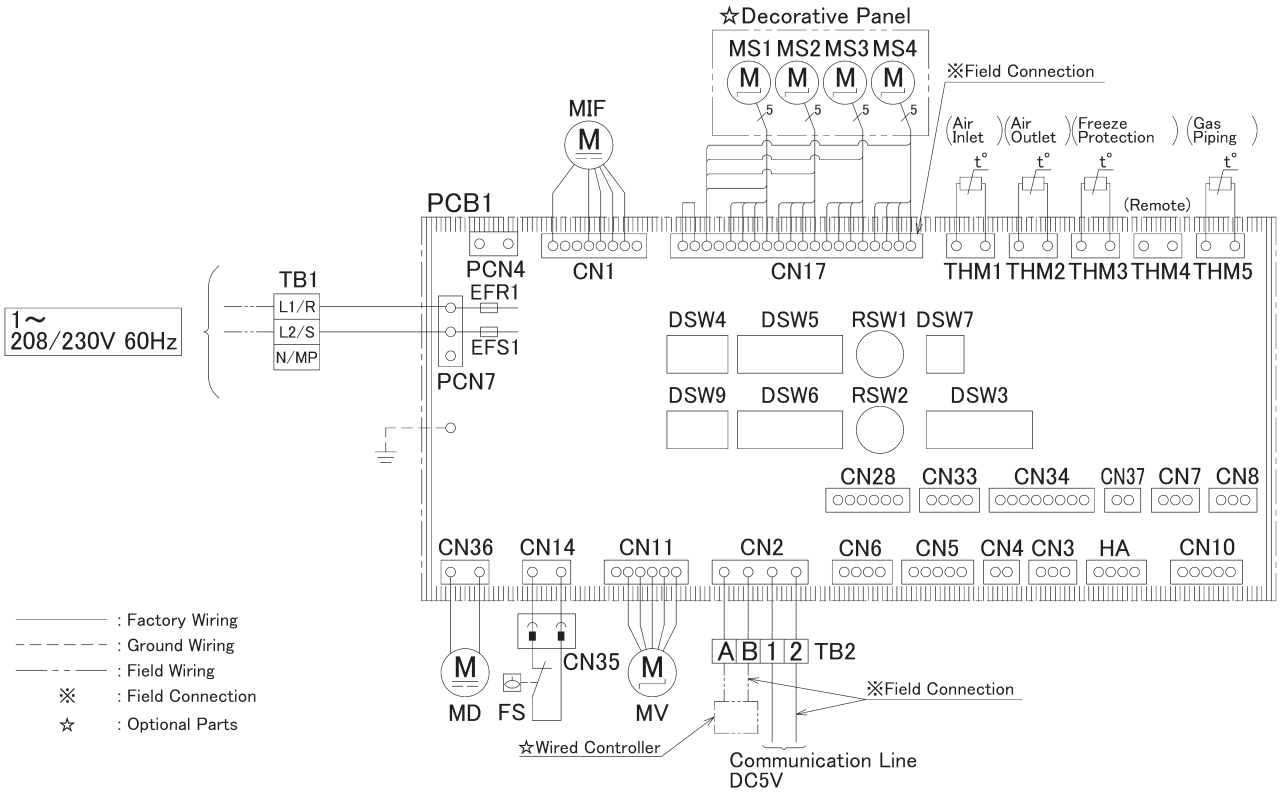
Note:

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

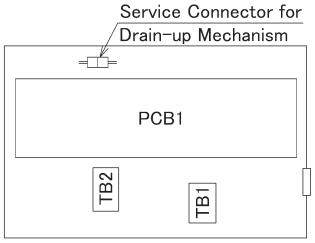
Mark	Name
CN3	Optional Connector (For Signal Input)
CN7,8	Optional Connector (For Signal Output)
CN10	Optional Connector (For Motion Sensor)
DSW3, 4, 7, 9	DIP Switch for Setting
EFR1, EFS1	Fuse
FS	Float Switch
MIF	Motor for Indoor Fan
MS	Motor for Automatic Swing Louver
MV	Electronic Expansion Valve
MD	Motor for Drain-up Mechanism
PCB1	Printed Circuit Board
RSW1	Rotary Switch for Refrigerant Cycle No. Setting (Ones Digit)
DSW5	DIP Switch for Refrigerant Cycle No. Setting (Tens Digit)
RSW2	Rotary Switch for Unit No. Setting (Ones Digit)
DSW6	DIP Switch for Unit No. Setting (Tens Digit)
TB1,2	Terminal Block
THM1～3, 5	Thermistor
THM4	Optional Connector (For Remote Temperature Sensor)
CN4～6, 28, 33, 34, 37, HA, PCN4	Reserved Connector on PCB

4-Way Cassette Mini Type Indoor Unit

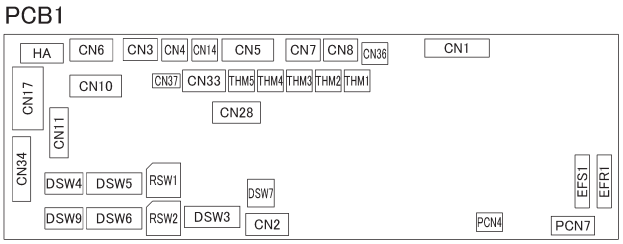
Models: (H,Y,C)ICM008B21S, (H,Y,C)ICM012B21S, (H,Y,C)ICM015B21S and (H,Y,C)ICM018B21S



Electrical Control Box of Indoor Unit



Printed Circuit Board



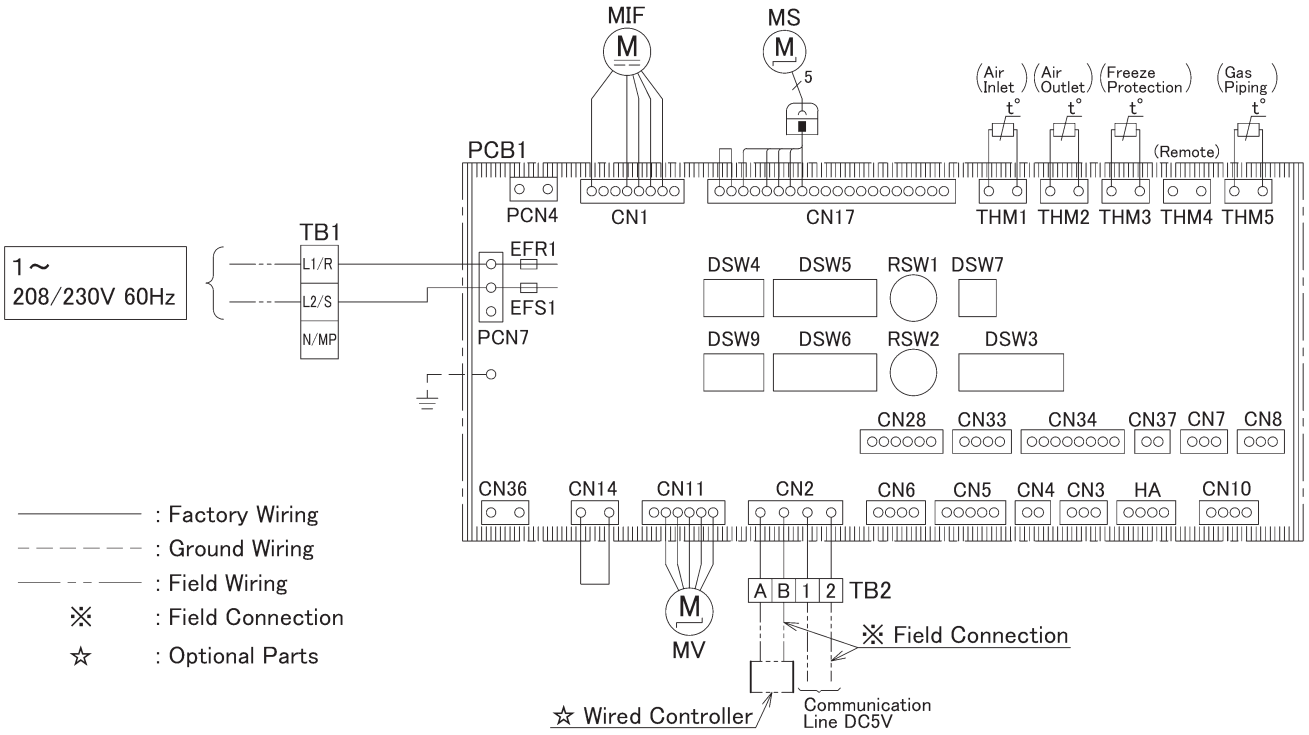
NOTE:

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

Mark	Name
CN3	Optional Connector (For Signal Input)
CN7,8	Optional Connector (For Signal Output)
CN10	Optional Connector (For Motion Sensor)
DSW3, 4, 7, 9	DIP Switch for Setting
EFR1, EFS1	Fuse
MIF	Motor for Indoor Fan
MS1～4	Motor for Automatic Swing Louver
MV	Electronic Expansion Valve
MD	Motor for Drain-up Mechanism
PCB1	Printed Circuit Board
RSW1	Rotary Switch for Refrigerant Cycle No. Setting (Ones Digit)
DSW5	DIP Switch for Refrigerant Cycle No. Setting (Tens Digit)
RSW2	Rotary Switch for Unit No. Setting (Ones Digit)
DSW6	DIP Switch for Unit No. Setting (Tens Digit)
TB1,2	Terminal Block
THM1～3, 5	Thermistor
THM4	Optional Connector (For Remote Temperature Sensor)
CN4～6, 28, 33, 34, 37, HA, PCN4	Reserved Connector on PCB

Ceiling Suspended Type Indoor Unit

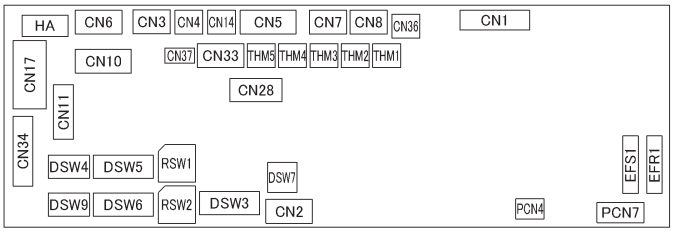
Models: (H,Y,C)ICS015B21S, (H,Y,C)ICS024B21S, (H,Y,C)ICS030B21S and (H,Y,C)ICS036B21S



Electrical Control Box of Indoor Unit

Printed Circuit Board

PCB1



NOTE:

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

Mark	Name
CN3	Optional Connector (For Signal Input)
CN7, 8	Optional Connector (For Signal Output)
CN10	Optional Connector (For Motion Sensor)
CN14, 36	Optional Connector (For Drain Pump Kit)
DSW3, 4, 7, 9	DIP Switch for Setting
EFR1, EFS1	Fuse
MIF	Motor for Indoor Fan
MS	Motor for Automatic Swing Louver
MV	Electronic Expansion Valve
PCB1	Printed Circuit Board
RSW1	Rotary Switch for Refrigerant Cycle No. Setting (Ones Digit)
DSW5	DIP Switch for Refrigerant Cycle No. Setting (Tens Digit)
RSW2	Rotary Switch for Unit No. Setting (Ones Digit)
DSW6	DIP Switch for Unit No. Setting (Tens Digit)
TB1, 2	Terminal Block
THM1～3, 5	Thermistor
THM4	Optional Connector (For Remote Temperature Sensor)
CN4～6, 28, 33, 34, 37, HA, PCN4	Reserved Connector on PCB

3. Optional Parts

3.1 Line Up (Continued)

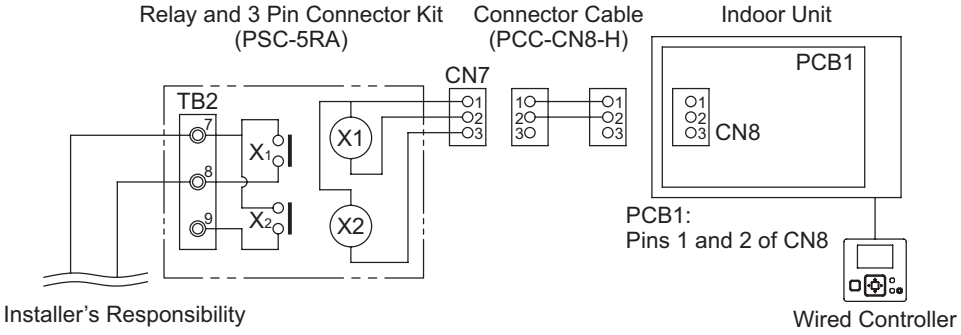
Item No.	Optional Parts	Adopting Unit Type	Adopting Model Name	Optional Parts Model Name
1	Connector Cable	Ducted (Medium Static) [1st Generation]	(H,Y,C)IDM006 to 048B21S	PCC-CN8-H
		Ducted (Slim)	(H,Y,C)IDS006 to 018B21S	
		Ducted (EconoFresh)	(H,Y,C)IDM030 to 048B21E	
		Wall Mount	TIWM006 to 030B22S	
		2-Way Cassette	(H,Y,C)IC2018, 024B21S	
		4-Way Cassette Mini	(H,Y,C)ICM008 to 018B21S	
		4-Way Cassette	(H,Y,C)IC4008 to 048B21S	
		1-Way Cassette	(H,Y,C)IC1006 to 015B21S	
		Ceiling Suspended	(H,Y,C)ICS015 to 036B21S	
2	Connector Cable	Ducted (High Static) [1st Generation]	(H,Y)IDH018 to 096B21S	PCC-CN1925-H
		Floor Exposed	(H,Y,C)IFE006 to 015B21S	
		Floor Concealed	(H,Y,C)IFC006 to 015B21S	
		DX-Kit for UPG VAH	EXV-018 to 060E	

1. Connector Cable: PCC-CN8-H

This optional connector is utilized to provide auxiliary heater signal output capability from indoor unit PCB connector (CN8) to PSC-5RA connector (CN7) for auxiliary heater installation. (System Parts: One set contains one connector cable.)

Name	Connector Cable
Model	PCC-CN8-H
Remarks	One set contains one connector cable.

Connect the connector cable as shown below.



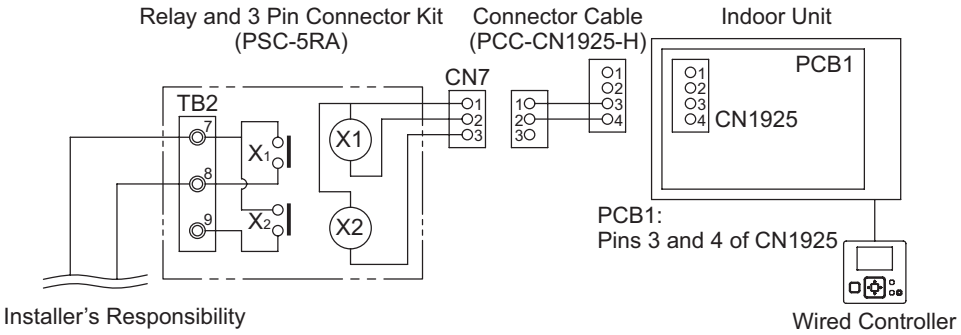
During installation, refer also to the "Installation and Maintenance Manual" for connecting indoor unit.

2. Connector Cable: PCC-CN1925-H

This optional connector is utilized to provide auxiliary heater signal output capability from indoor unit PCB connector (CN1925) to PSC-5RA connector (CN7) for auxiliary heater installation. (System Parts: One set contains one connector cable.)

Name	Connector Cable
Model	PCC-CN1925-H
Remarks	One set contains one connector cable.

Connect the connector cable as shown below.



During installation, refer also to the "Installation and Maintenance Manual" for connecting indoor unit.

TC-17005-rev.3

Code No. LIT-12012560
Revised September 2019