DAIKIN

INSTALLATION MANUAL
OPERATION MANUAL

CEILING CONCEALED SPLIT TYPE AIR-CONDITIONER

FDKR200BV16
FDKR300BV16
FDKR400BV16

3P724053-3 E

DAIKIN

Ceiling Concealed
Split Type Air Conditioner
Installation Manual & Operation Manual

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INSTALLATION MANUAL

This manual provides the procedures of installation to ensure a safe and good standard of operation for the air conditioner unit.
Special adjustment may be necessary to suit local requirements.
Before using your air conditioner, please read this instruction manual carefully and keep it for future reference.
This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.

1. SAFETY PRECAUTIONS

⚠ WARNING

- Installation and maintenance should be performed by qualified persons who are familiar with local code and regulation, and experienced with this type of appliance.
- All field wiring must be installed in accordance with the national wiring regulation.
- Ensure that the rated voltage of the unit corresponds to that of the name plate before commencing wiring work according to the wiring diagram.
- The unit must be GROUNDED to prevent possible hazard due to insulation failure.
- **Be sure to install an earth leakage breaker. Failure to install an earth leakage breaker may result in electric shocks or fire.**
- All electrical wiring must not touch the refrigerant piping, or any moving parts of the fan motors.
- Confirm that the unit has been switched OFF before installing or servicing the unit.
- Disconnect from the main power supply before servicing the air conditioner unit.
- DO NOT pull out the power cord when the power is ON. This may cause serious electrical shocks which may result in fire hazards.
- Keep the indoor and outdoor units, power cable and transmission wiring, at least 1m from TVs and radios, to prevent distorted pictures and static. (Depending on the type and source of the electrical waves, static may be heard even when more than 1m away).

Special notice of product

[REFRIGERANT]
The system uses R410A refrigerant.
The refrigerant R410A requires that strict precautions be observed for keeping the system clean, dry and tightly sealed. The following procedures must be followed correctly,

A. Clean and dry
Strict measures must be taken to keep impurities (including SUNISO oil and other mineral oils as well as moisture) out of the system.

B. Tight sealed
Take care to keep the system tight when installing. R410A contains no chlorine, does not destroy the ozone layer and so does not reduce the earth's protection against harmful ultraviolet radiations. R410A will contribute only slightly to the greenhouse effect if released to the atmosphere.

⚠ CAUTION

Please take note of the following important points when installing.

- **Do not install the unit where leakage of flammable gas may occur.**
  If gas leaks and accumulates around the unit, it may cause fire ignition.
- **Ensure that drainage piping is connected properly.**
  If the drainage piping is not connected properly, it may cause water leakage which will dampen the furniture.
- **Do not overcharge the unit.**
  Overcharge will cause over-current or damage to the compressor.
- **Ensure that the unit's panel is closed after service or installation.**
  Unsecured panels will cause the unit to operate noisily.
- **Sharp edges and coil surfaces are potential locations which may cause injury hazards. Avoid from being in contact with these places.**
- **Before turning off the power supply, set the remote controller's ON/OFF switch to the "OFF" position to prevent the nuisance tripping of the unit.** If this is not done, the unit's fans will start turning automatically when power resumes, posing a hazard to service personnel or the user.
- **Do not install the units at or near doorway.**
- **Do not operate any heating apparatus too close to the air conditioner unit or use in room where mineral oil, oil vapour or oil steam exist, this may cause plastic part to melt or deform as a result of excessive heat or chemical reaction.**
- **When the unit is used in kitchen, keep flour away from going into suction of the unit.**
- **This unit is not suitable for factory used where cutting oil mist or iron powder exist or voltage fluctuates greatly.**
- **Do not install the units at area like hot spring or oil refinery plant where sulphide gas exists.**
- **Ensure the color of wires of the outdoor unit and the terminal markings are same to the indoors respectively.**
- **IMPORTANT: DO NOT INSTALL OR USE THE AIR CONDITIONER UNIT IN A LAUNDRY ROOM.**
- **Don't use joined and twisted wires for incoming power supply.**

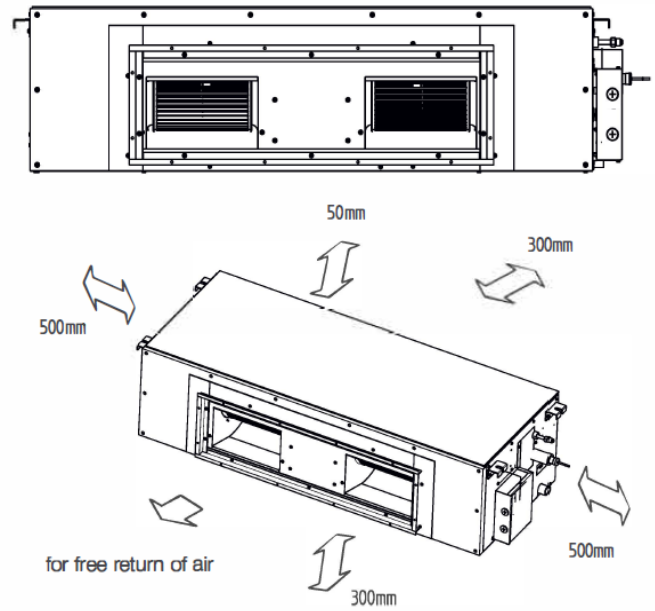
NOTE:
[DESIGN PRESSURE]
The design pressure of the system in 4.17MPa. Since R410A is a mixed refrigerant, the required additional refrigerant must be charged in its liquid state (if the system is charged with refrigerant in its gaseous state, the system will not function normally due to the composition change).

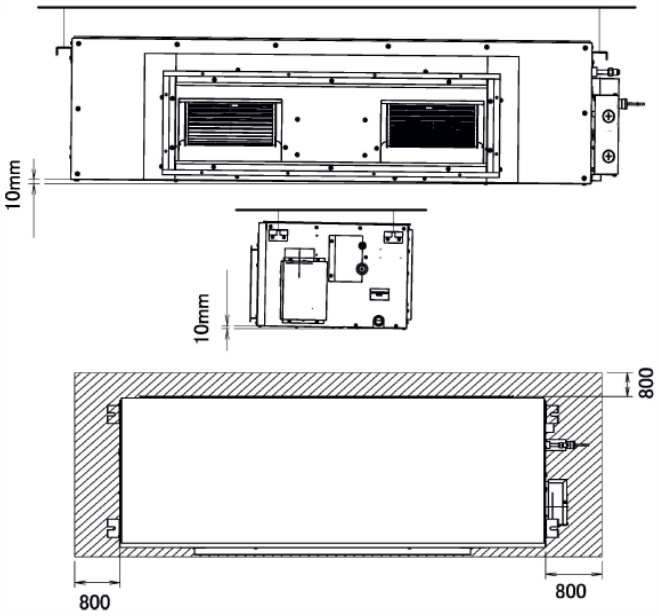
2. INSTALLATION OF THE INDOOR UNIT

Mounting

Ensure that the overhead supports are strong enough to hold the unit's weight. Position hanger rods and check for alignment with the unit. Check that hangers are secure and that the base of fan-coil unit is level in the two horizontal directions, taking into account the gradient recommended for drainage flow as shown.
Check the gradient recommended for drainage flow as follow.

Provide clearance for servicing and optimal air flow as shown in the diagram.
The indoor unit must be installed such that there is no short circuit of cool discharge with air discharge.
Respect the installation clearance.
Do not put the indoor unit where there is direct sunlight on unit. The location is suitable for piping and drainage and it must be have a large distance between a door and unit.

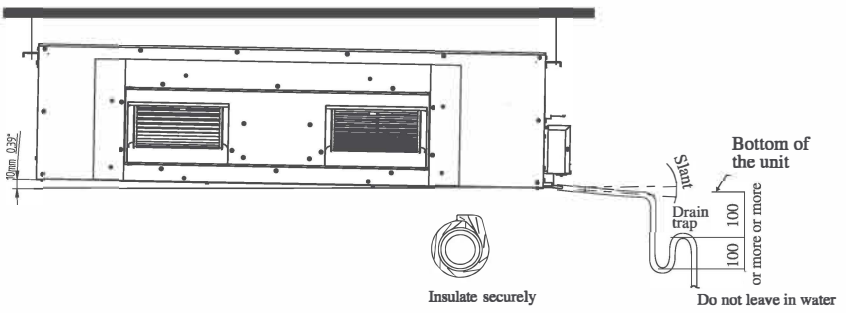




All dimensions in mm.

Important: 1. While brazing the Liquid and Gas pipe for indoor unit, use wet cloth to prevent the burning of insulation. Insulation must be provided on Liquid and Gas pipe for indoor unit after brazing.
2. Use M10/M12 rods for installation of Indoor units total Number of installation rods should be in accordance with number of hanger metal provided for installation.

Ceiling Concealed Drain Piping Work



Unit : mm

- The drain pipe must be installed as shown in the diagram (see diagram above) to avoid damage caused by leaks and condensation.
- For the best result, keep the piping as short as possible. Slant the piping at an angle to improve the flow.
- Unit installation should be tilted . In range of 10 to 15mm
- The drain pipe slope shall be kept at least 1:100.
- Ensure the drain pipe is securely insulated.
- It is necessary to provide a drain trap in the drain outlet to relieve pressure that exists within the unit compared to the outside atmospheric pressure when the unit is operating. The drain trap is to avoid possibility of splashes or an odour.
- Keep pipes as straight as possible for easy cleaning and to prevent the accumulation of dirt and debris.
- Conduct a water drainage test after the installation is completed. Make sure that the drainage flow is smooth.
- In humid environments, use an extra drain pan to cover the entire area of indoor unit.

3. INSTALLATION OF THE OUTDOOR UNIT

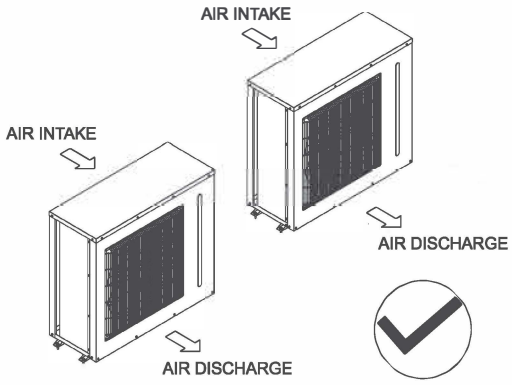
Location For Installation

Install the outdoor unit in such way that air distributed by the outdoor unit cannot be drawn in again (as in the case of short cycling of discharge air). Allow sufficient space for maintenance around the unit.
Select the coolest possible place where intake air should not be higher than the outside temperature (maximum 48°C).
Ensure that there are no obstruction of air flow into or out of the unit. Remove obstacles which block air intake or discharge.
When two or more outdoor units are installed in a location, they must be positioned such that one unit will not be taking the discharge air from another.
This also applies when two or more units are installed one above the other. The all units must face the same direction, or opposite direction (back to back), such that air short cycling does not occur.
The location must be well ventilated, so that the unit can draw and distribute plenty of air.
A place capable of bearing the weight of the outdoor unit and isolating noise and vibration.
A place protected from direct sunlight. Otherwise use an awning for protection, if necessary.
A place where smooth drainage of rain water and water formed by defrosting is acceptable.
A place where the unit will not be buried in snow.
A place where air outlet port is not exposed to strong wind.
A place where the air discharge and operating sound level will not annoy the neighbours.
The location must not be susceptible to dust or oil mist.

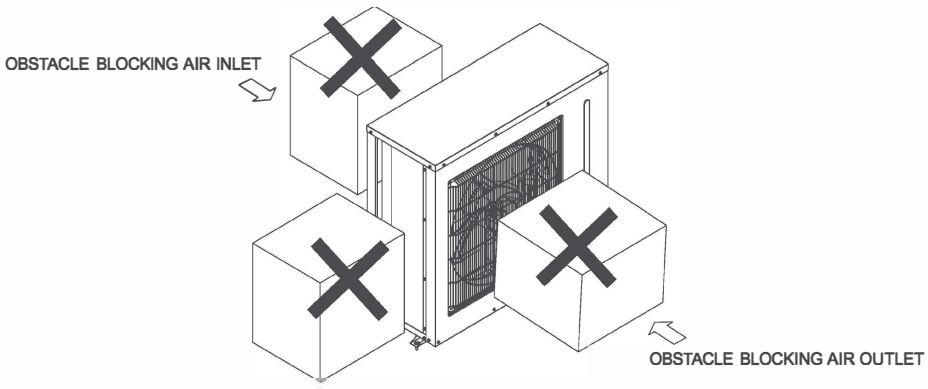
Location For Installation Of The Condensing Units

As condensing temperature rises, evaporating temperature rises and cooling capacity drops. In order to achieve maximum cooling capacity, the location selected should fulfill the following requirements:-

a) Install the condensing (outdoor) unit in a way such that hot air distributed by the outdoor condensing unit cannot be drawn in again (as in the case of short cycling of hot discharge air). Allow sufficient space for maintenance around the unit.



b) Ensure that there is no obstruction of air flow into or out of the unit. Remove obstacle which block air intake or discharge.



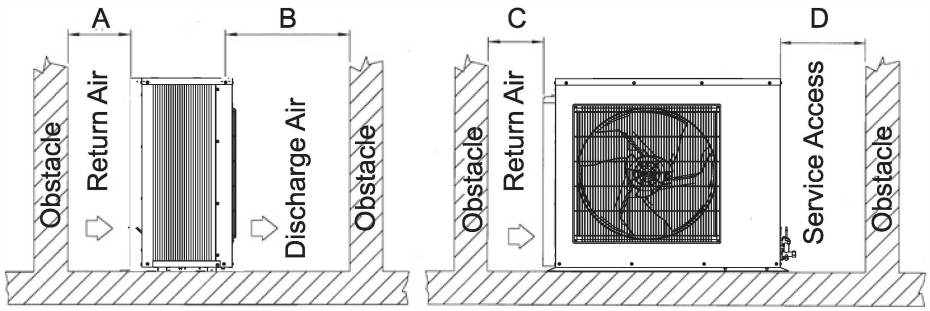
c) The location must be well ventilated, so that the unit can draw and distribute plenty of air thus lowering the condensing temperature.
d) A place capable of bearing the weight of the outdoor unit and isolating noise and vibration.
e) A place protected from direct sunlight. Otherwise use an awning for protection, if necessary.
f) A place where the hot air discharge and operating sound level will not annoy the neighbours.
g) The location must not be susceptible to dust or oil mist.

Caution: If the condensing unit is operated in an atmosphere containing oils (including machine oils), salt (coastal area), sulphide gas (near hot spring, oil refinery plant), such substances may lead to failure of the unit.

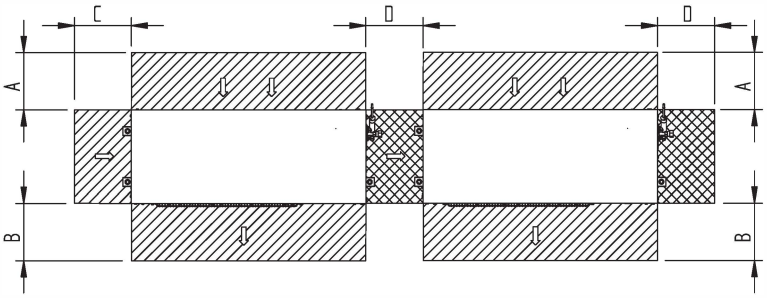
INSTALLATION CLEARANCE

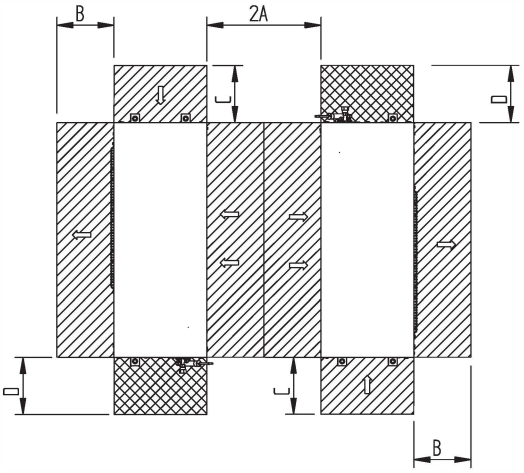
When two or more outdoor units are installed in a location, they must be positioned such that one unit will not be taking the hot discharge air from another to avoid hot air short cycling.This also applies when two or more units are installed one above the other. Below are the installation clearance guidelines:

Model	RZR200BY16	RZR300BY16	RZR400BY16
A (mm)	500	500	700
B (mm)	750	750	1000
C (mm)	1200	1200	1200
D (mm)	1000	1000	1000



Horizontal air discharge





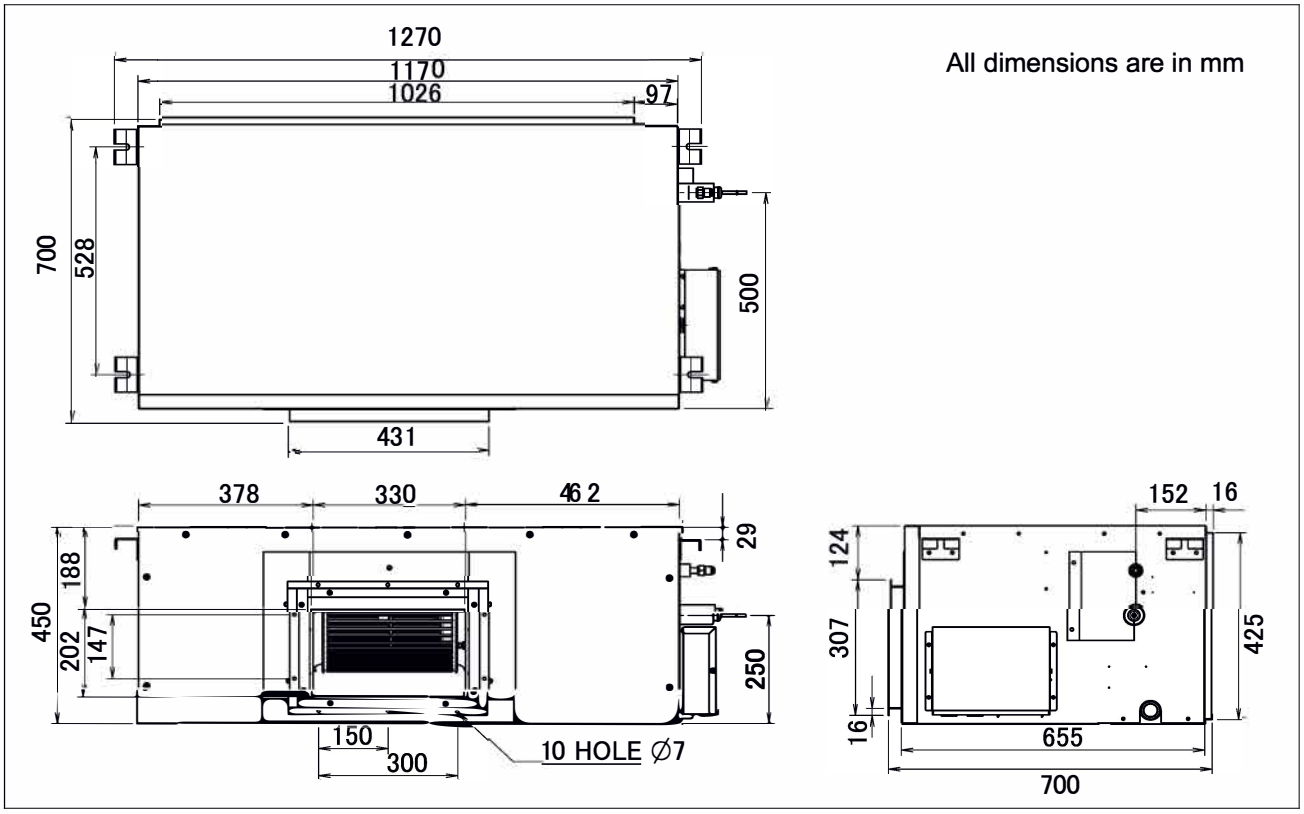
LEGEND

SPACE FOR AIR FLOW

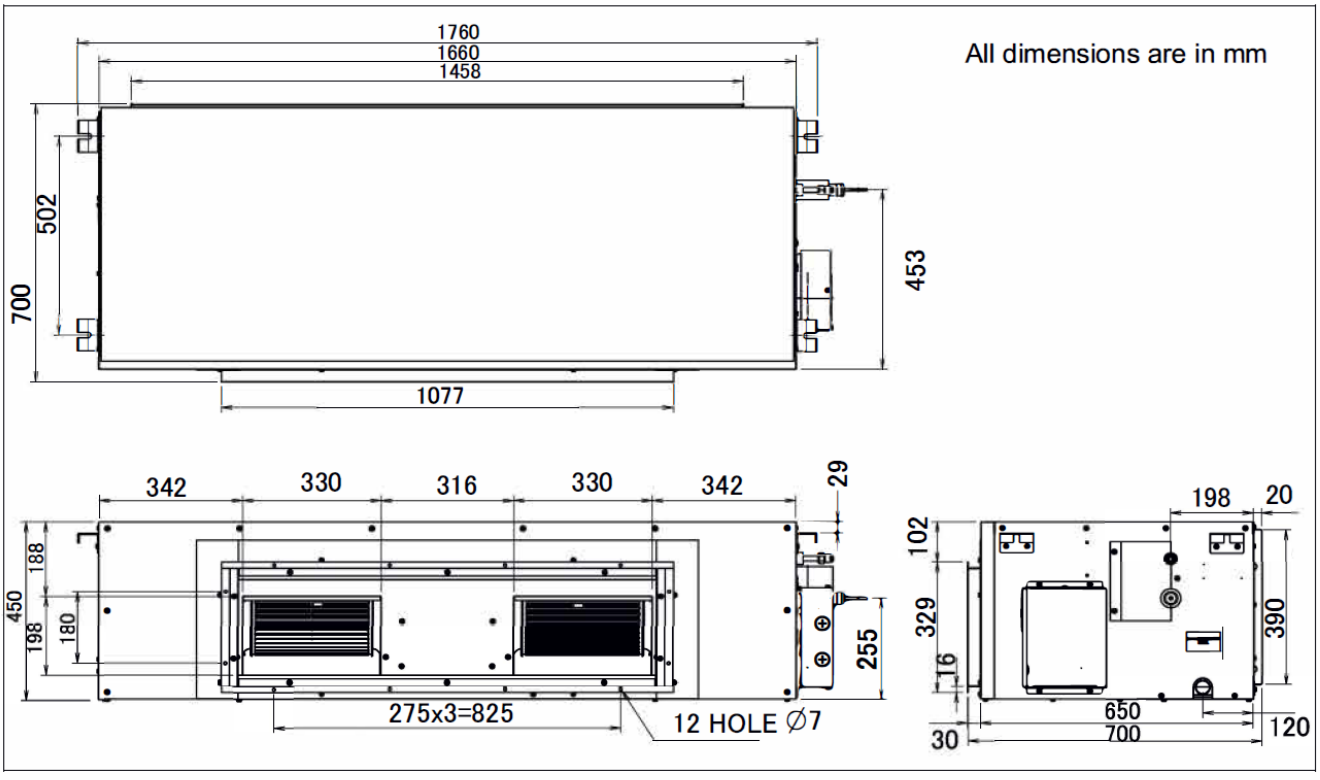
SPACE FOR SERVICE

4. OUTLINE AND DIMENSIONS

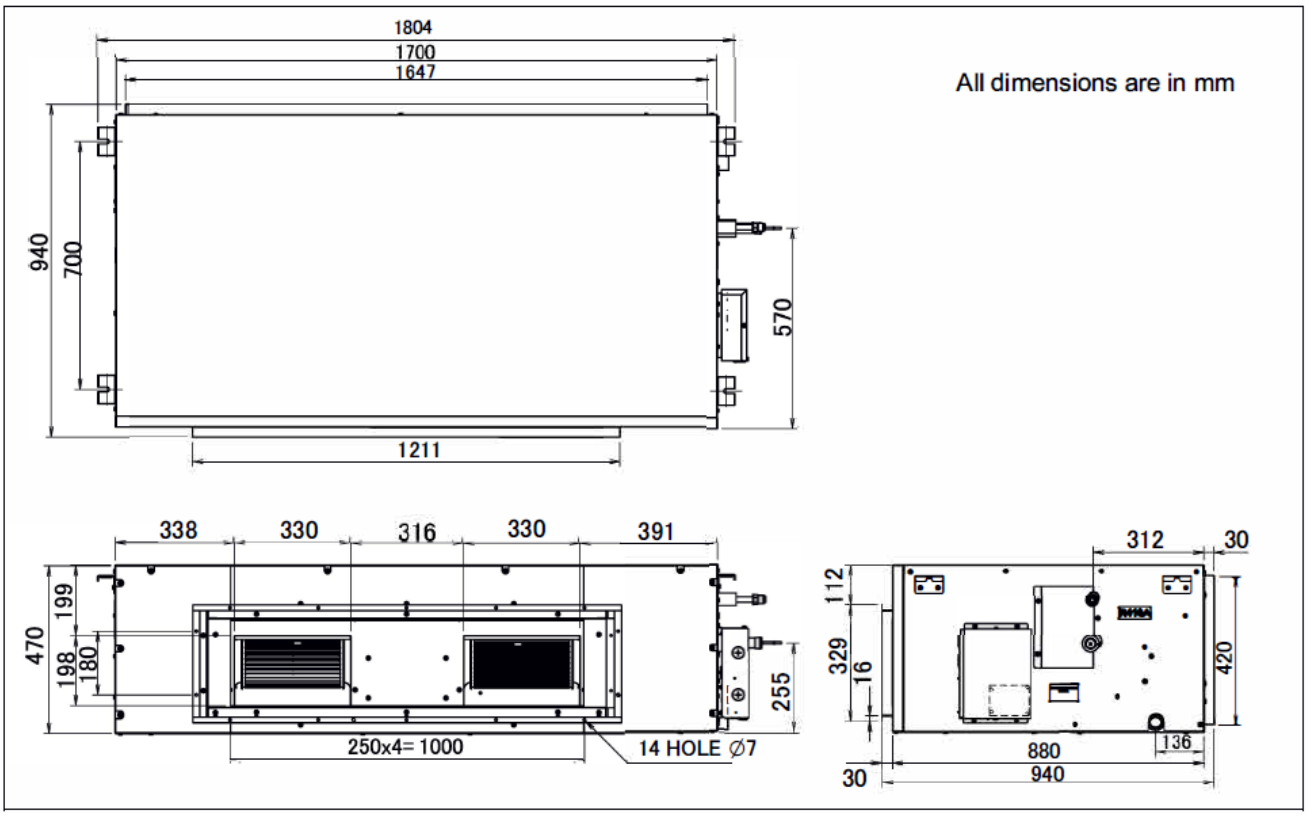
Indoor Unit FDKR200BV16



Indoor Unit FDKR300BV16

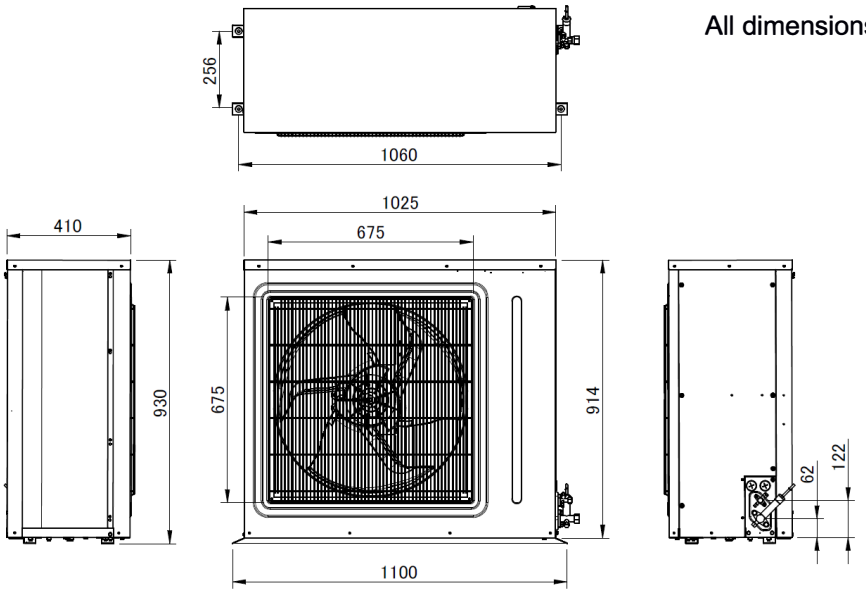


Indoor Unit FDKR400BV16



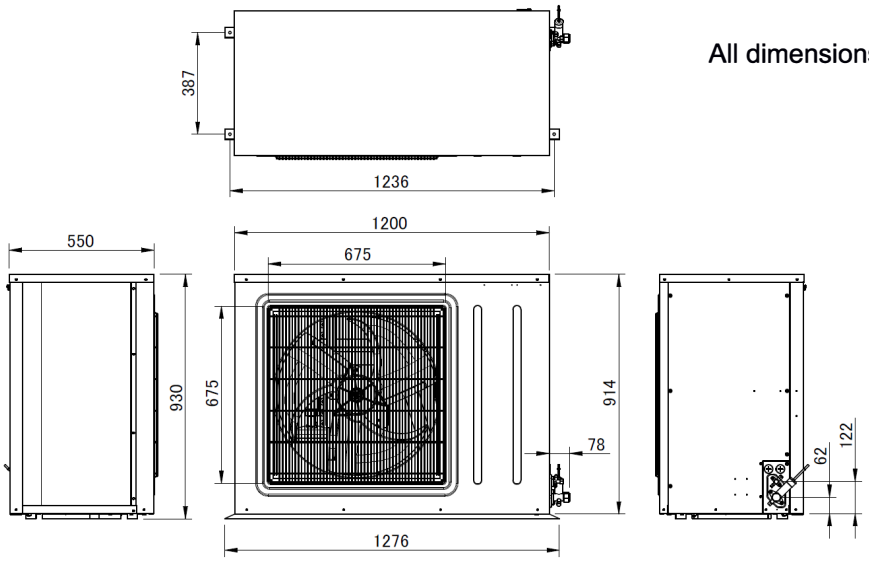
Outdoor Unit RZR200BY16 Horizontal Air Discharge

All dimensions are in mm



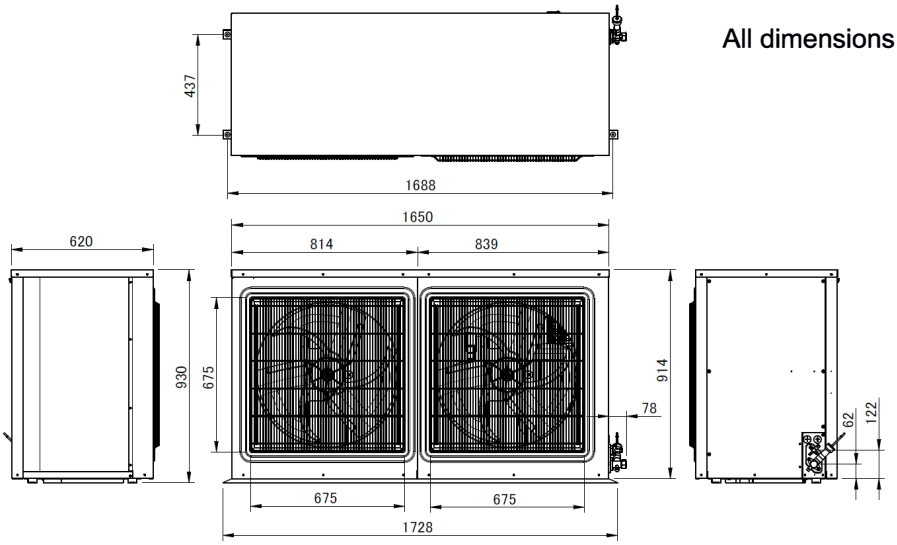
Outdoor Unit RZR300BY16 Horizontal Air Discharge

All dimensions are in mm



Outdoor Unit RZR400BY16 Horizontal Air Discharge

All dimensions are in mm



5. REFRIGERANT PIPING

Maximum Pipe Length And Maximum No. Of Bends

When the pipe length becomes too long, both the capacity and reliability will drop and as the no. of bends increases, system piping resistance to the refrigerant flow increases, thus lowering the capacity. As a result the compressor may fail. Always choose the shortest path and follow the recommendations as tabulated below:-

Field piping

To ensure satisfactory operation and performance, the following points should be noted for the field piping arrangements of the complete refrigerant cycle.

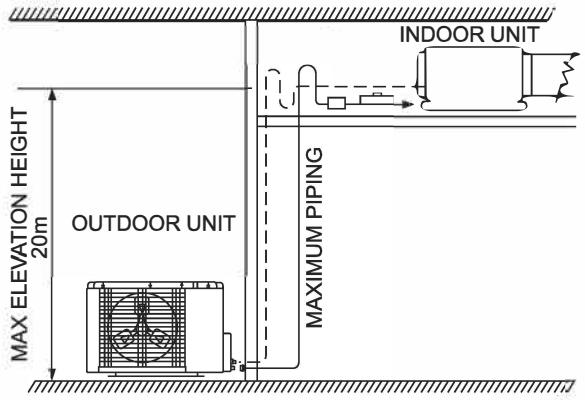
a) Liquid loops or oil traps must be provided according to the position of the outdoor and the indoor units (depending on whether the indoor unit is above or below the outdoor unit)

Always choose the shortest piping path and follow the recommendations as shown below:

Model	Max. Elevation, m (ft.)	Max. Total Length, m (ft.)	Accumulator Liquid holding capacity (ltr.)	Max. of Bends
		With Accumulator		
RZR200BY16	20 (65.6)	50 (164.04)	4.8	8
RZR300BY16		50 (164.04)	5.27	
RZR400BY16		50 (164.04)	8.4	

Caution:

1. Our guarantee on performance of our air-conditioners is strictly revoked if the height, length and/or the number of bends of the refrigerant piping system installed is beyond the limit above.
2. Bendings must be carefully made so as not to crush the pipe. Use a pipe bender to bend a pipe as far as possible.



Field Connection pipe size detail

Indoor	Liquid Pipe	Gas Pipe	Outdoor	Liquid Pipe	Gas Pipe
FDKR200BV16	1/2"	7/8"	RZR200BY16	1/2"	7/8"
FDKR300BV16	1/2"	1-1/8"	RZR300BY16	1/2"	1-1/8"
FDKR400BV16	5/8"	1-1/8"	RZR400BY16	5/8"	1-1/8"

Precautions on refrigerant piping

i. Do not allow anything other than the designated refrigerant to get mixed into the refrigerant cycle, such as air, nitrogen,etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.

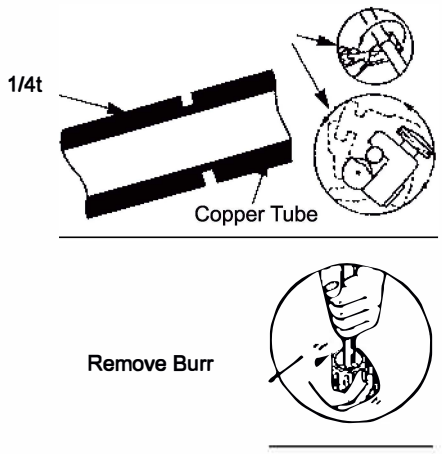
ii. Use R410A only when adding refrigerant.

iii. Installation tools:

Make sure to use installation tools (gauge manifold, charge hose, etc.) that are exclusively use for R410A installations to withstand the pressure and to prevent foreign materials (e.g. mineral oils and moisture) from mixing into the system.

Piping Works & Brazing Technique

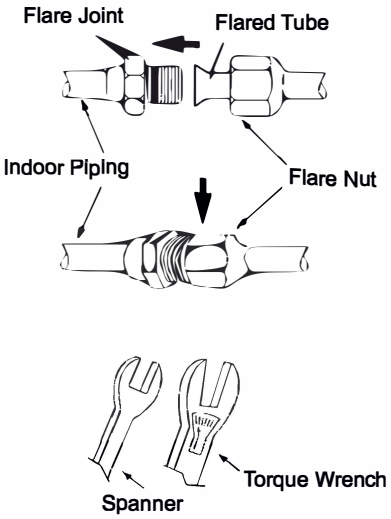
- Do not use contaminated or damaged copper tubing. If any pipings, evaporator or condenser had been exposed or had been opened for 15 seconds or more, then vacuum and purge with field supplied refrigerant. Generally, do not remove plastic, rubber plugs and brass nuts from the valves, fittings, tubings and coils until it is ready to connect suction or liquid line into valves or fittings.
- If any brazing work is required, ensure that the nitrogen gas is passed through coil and joints while the brazing work is being done. This will eliminate soot formation on the inside walls of the copper tubings.
- Cut the pipe stage by stage, advancing the blade of the pipe cutter slowly. Extra force and deep cut will cause more distortion on the pipe and thus extra burr. See figure.
- Remove burrs from cut edges of the pipes with remover as shown in the figure. Hold the end of the pipe downwards to prevent metal chips from entering the pipe.



Piping Connection To The Units

- Align the center of the piping and tighten the flare nut sufficiently with fingers.
- Finally, tighten the flare nut with the torque wrench until the wrench clicks.
- When tightening the flare nut with the torque wrench, ensure that the tightening direction follows the arrow indicated on the wrench.

Pipe Size (mm/in)	Torque (Nm)
6.35 (1/4")	18
9.53 (3/8")	42
12.7 (1/2")	55
15.88 (5/8")	65
19.05 (3/4")	78



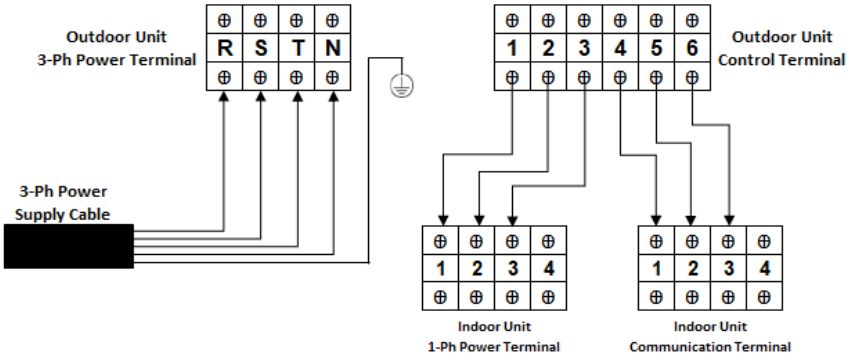
6. ELECTRICAL WIRING WORK

IMPORTANT: * These values are for information only, they should be checked and selected to comply with the local and/or national codes and regulations. They are also subjected to the type of installation and size of conductors.

** The appropriate voltage range should be checked with data label on the unit.

Model		Indoor Unit	FDKR200BV16	FDKR300BV16	FDKR400BV16
		Outdoor Unit	RZR200BY16	RZR300BY16	RZR400BY16
Voltage Range**		Indoor Unit	230V / 1PH / 50Hz		
		Outdoor Unit	415V / 3PH / 50Hz		
3-Ph Power Supply Cable	Cable Size	mm²	2.5	4	6
	No. of Conductors	Nos.	5	5	5
Interconnecting Power Supply Cable	Cable size	mm²	1.5	1.5	1.5
	No. of Conductors	Nos.	3	3	3
Interconnecting Communication Cable	Cable size	mm²	0.5	0.5	0.5
	No. of Conductors	Nos.	3	3	3
Recommended Fuse*		Amp.	20	32	40

Field Wiring Connection



OVERALL CHECKING

Ensure the following, in particular:-

1. The unit is mounted solidly and rigid in position.
2. Piping and connections are leak proof after charging.
3. Proper wiring has been done (see fig below).

Drainage check:- Pour some water into left side of drain pan (drainage are in right side of unit).

- Test run:

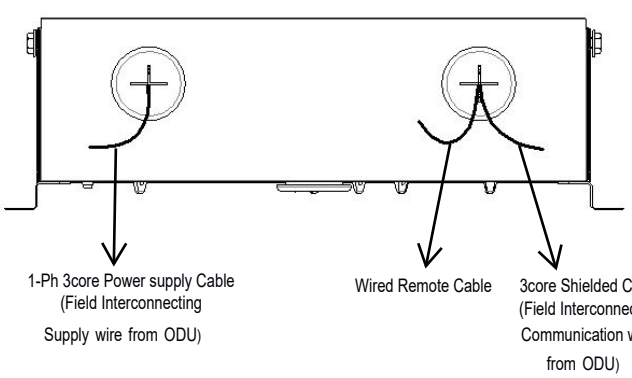
1. Conduct a test run after water drainage test and gas leakage test.
2. Watch out for the following:-
   a) Is the electric plug firmly inserted into the socket?
   b) Is there any abnormal sound from unit?
   c) Is there smooth drainage of water?

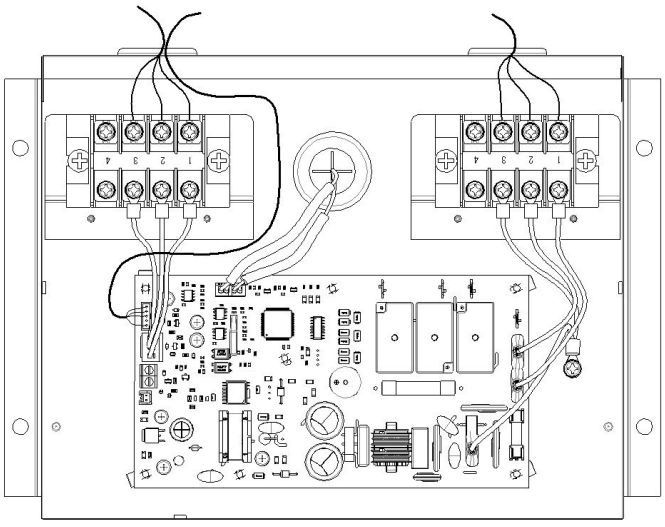
- Check that:

1. Condenser fan is running, with warm air blowing off the condensing unit.
2. Evaporator blower is running and discharge cool air.
3. The remote controller incorporates a 3 minute delay in the circuit. Thus, it requires about 3 minutes before the outdoor condensing unit can start up.

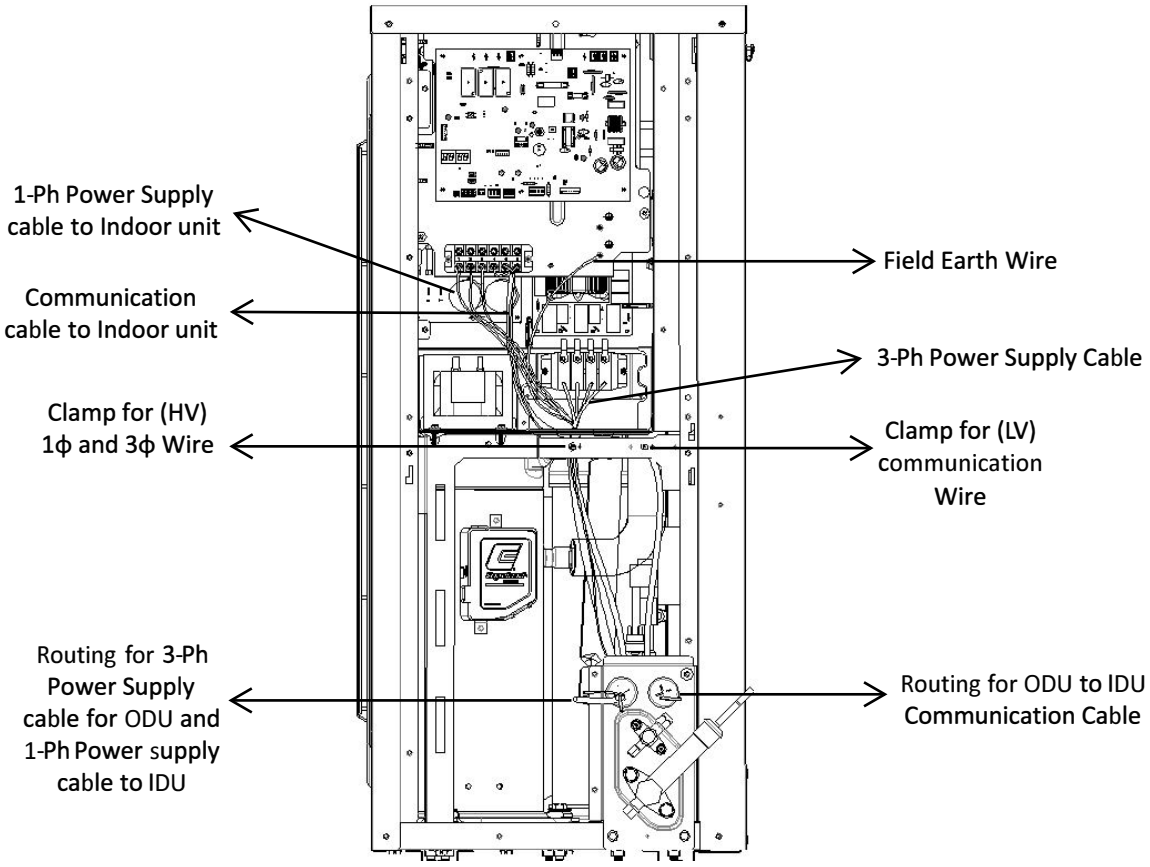
Indoor Unit Field Wiring Instruction:

FDKR200BV16
FDKR300BV16
FDKR400BV16

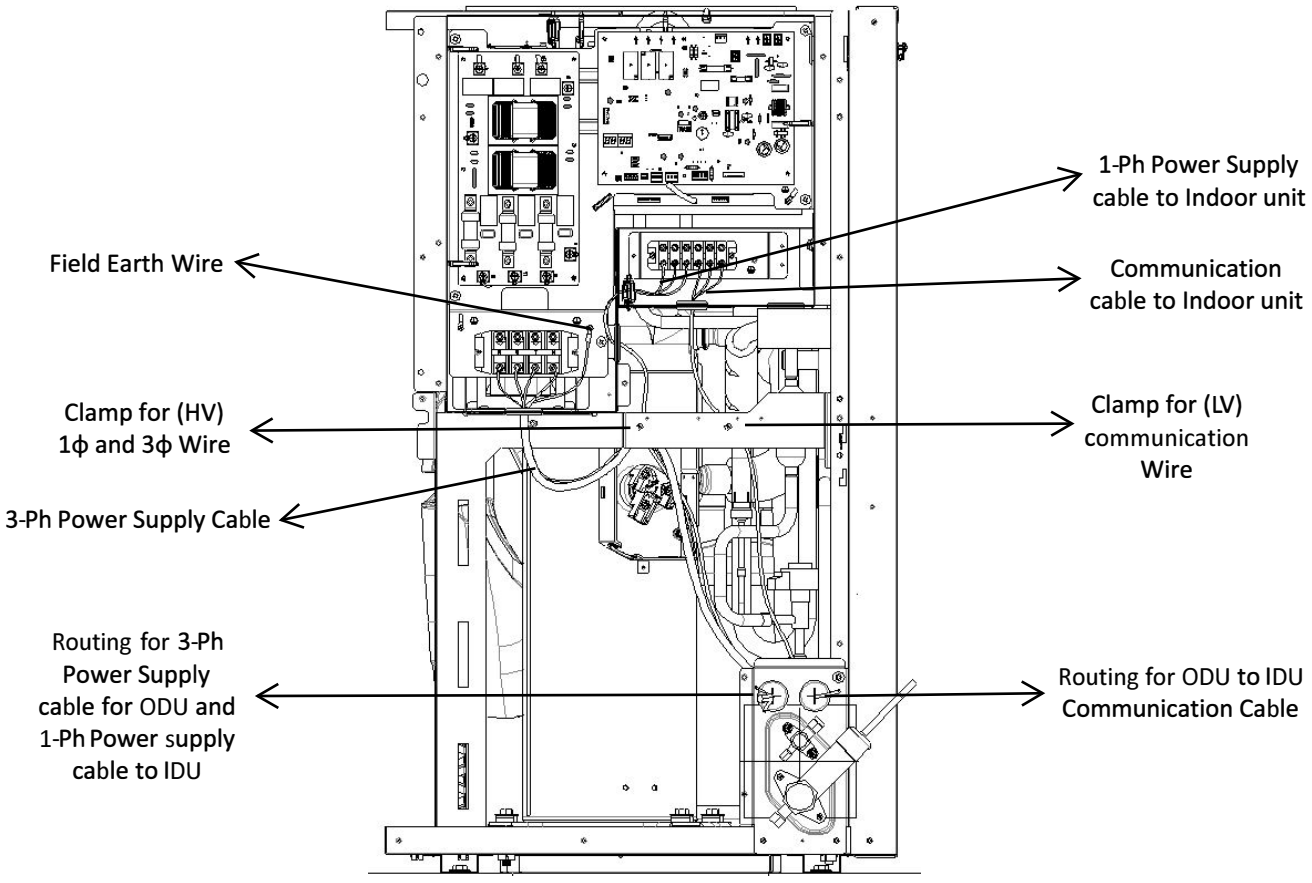




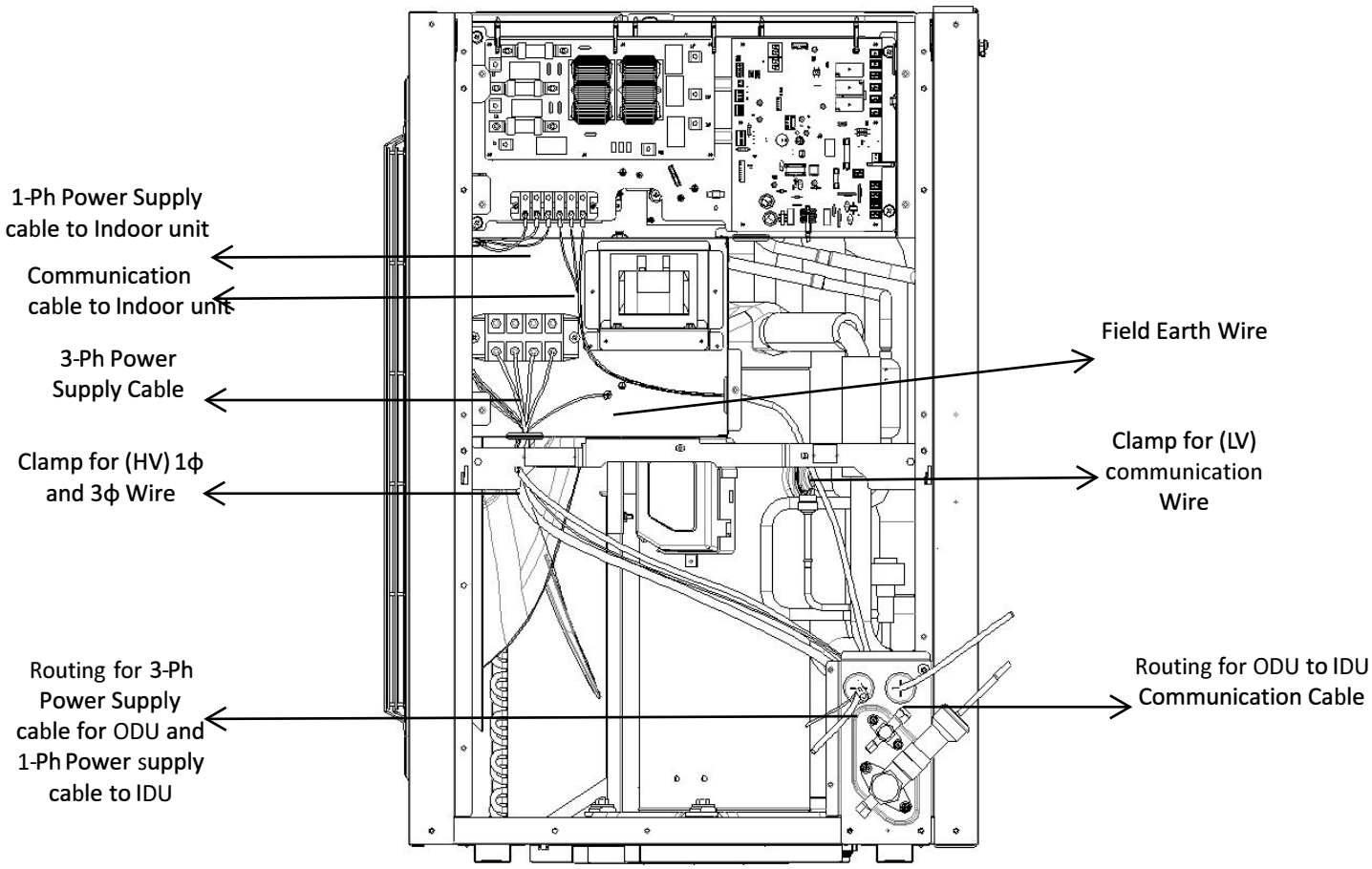
RZR200BY16 Outdoor Unit Field Wiring Instruction:

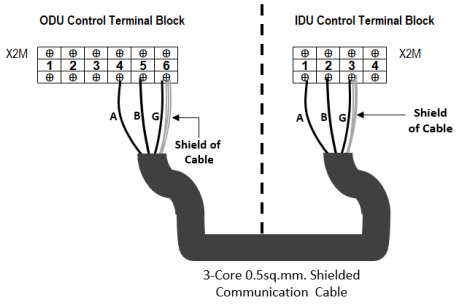


RZR300BY16 Outdoor Unit Field Wiring Instruction:



RZR400BY16 Outdoor Unit Field Wiring Instruction:





NOTE:

1. Minimum 25mm or more gap to be maintained between High Voltage(HV) and Low Voltage (LV) wires during field installation.
2. For Indoor to outdoor communication, use only 3 core shielded cable of 0.5 mm^2 for field wiring. Connect the ground cable and shield of the communication cable together at both end IDU and ODU terminal block.

7. OIL REFILL CHARGE GUIDELINES

1. **In case of majority Oil spill/Loss by Leakage in field ------**
   Remove all remaning oil from the compressor. Add fresh oil charge in the compressor as per below table.

Indoor	Outdoor	Refill oil charge ltr/30m pipe length
FDKR200BV16	RZR200BY16	1.656
FDKR300BV16	RZR300BY16	2.395
FDKR400BV16	RZR400BY16	2.632

OIL REMOVING PROCEDURE :

1. To remove all remaining oil from the compressor, first remove compressor from the system.
   Take it out side & tilt in such a way so that all oil can come outside from suction port.

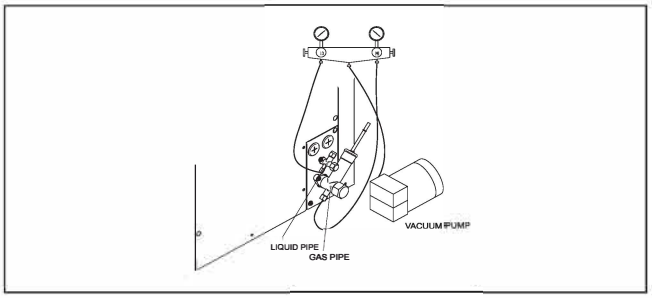
Note : Check quality of oil, if oil color is clear (not black or turbide), use same oil for refilling & top up fresh oil to maintain total refill quantity as per above table. If oil color is not clear, do not use this oil, refill with fresh oil only.

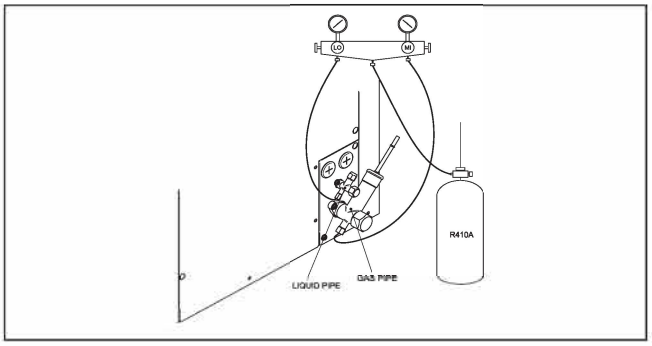
OIL REFILL PROCEDURE :

1. Charge oil through the suction port of compressor.

8. VACUUMING AND CHARGING

Vacuuming is necessary to eliminate all moisture and air from the system. The outdoor unit is provided with valve fittings.





Vacuuming

Before vacuuming, perform leak check for refrigeration circuit. After the system piping are properly connected, connect the flexible hoses to the correct charging nipples as shown in the diagram. Ensure that flexible hose from charging nipples are connected to the vacuum pump via standard servicing valves and pressure gauges (gauge manifold). Vacuum the air conditioner system to at least 500 microns Hg. Do not start the unit when the system is engaged in vacuuming.

Charging

Before recharging, the vacuum must be held at 500 microns Hg for at least 15 minutes, then break vacuum by charging R-410A refrigerant. Operate the unit for 15 minutes and ensure the refrigerant charge is of correct amount as specified below.

After ensuring the system is correctly charged, remove flexible hose from charging nipples and replace caps.

Precautions while charging

i. Refrigerant cannot be charged until field wiring has been completed.
ii. Refrigerant may only be charged after performing the leak test and vacuum drying.
iii. When charging a system, care shall be taken that its maximum permissible charge is never exceeded, in view of danger of liquid hammer.
iv. Charging with an unstable substance may cause explosions and accidents, so always ensure that the appropriate refrigerant R410A is charged.

SYSTEM REFRIGERANT CHARGE LEVEL GUIDELINES

Cooling only

Indoor	Outdoor	Liquid Pipe	Gas Pipe	Refrigerant Charge (kg/7.5m pipe length)
FDKR200BV16	RZR200BY16	1/2"	7/8"	3.3
FDKR300BV16	RZR300BY16	1/2"	1-1/8"	4.0
FDKR400BV16	RZR400BY16	5/8"	1-1/8"	8.0

* Keep minimum 7.5m pipe length during installation.

ADDITIONAL CHARGE

Based on liquid pipe size per meter length:

MODEL	Additional Charge (Kg/m)
RZR200BY16	0.043
RZR300BY16	0.055
RZR400BY16	0.08

Note: The additional refrigerant charge amount recommended is a guideline for longer piping application. The actual charge required may be different from the guideline due to different application and variation in site conditions.

9. SPECIAL PRECAUTIONS WHEN CHARGING UNIT WITH SCROLL COMPRESSORS

These precautions are intended for use with scroll compressors only with R22, R407C, R134A, R404A, R507 and R410A refrigerants but are not applied to reciprocating compressors or competitive scroll compressors.

Scroll compressors have a very high volumetric efficiency and quickly pump a deep vacuum if there is insufficient refrigerant in the system or if refrigerant is added too slowly. Operation with low suction pressure will quickly lead to very high discharge temperatures. While this process is happening, the scrolls are not being well lubricated – scrolls depend on the oil mist in the refrigerant for lubrication. A lack of lubrication leads to high friction between the scroll flanks and tips and generates additional heat. The combination of heat of compression and heat from increased friction is concentrated in a small localized discharge area where temperatures can quickly rise to more than 300˚C. These extreme temperatures damage the Scroll spirals and the orbiting Scroll bearing. This damage can occur in less than one minute especially on larger compressors. Failure may occur in the first few hours or the damage done during field charging may show up some time later.

Other typical field charging problems include undercharging, overcharging, moisture or air in the system etc. In time each one of these problems can cause compressor failure.

Minimal equipment is required for field charging. The minimum equipment required to do a satisfactory job is:-

Set of service gauges	Vacuum gauge
Hoses	Scales
Vacuum pump	Thermometer

The proper refrigerant charge should follow the volume as recommended by manufacturer and recommendation should be followed by the installer.

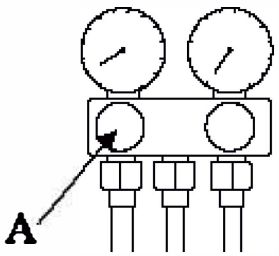
1. **Charging procedures – Single phase compressors**

   Evacuate the system to 500 microns Hg (67Pa). To reduce evacuation time, use short, large diameter hoses and connect to unrestricted service ports on the system. Quality of vacuum cannot be determined by time – a reliable vacuum gauge must be used. (eg. electronic vacuum gauge)

   Turn the refrigerant cylinder upside down, purge the charging hose and charge liquid through the liquid line charging port until refrigerant no longer flows or until the correct charge has been weighed in. If additional charge is required, start the system and slowly bleed liquid into the suction side until the system is full.

   It is recommended to charge liquid refrigerant in a CONTROLLED manner into the suction side until the system is full. This recommendation does not hold true for reciprocating compressors where liquid charging into the suction side could cause severe damage.

   Carefully monitor the suction and discharge pressures – ensure that the suction pressure does not fall below 25 psig (1.7 bar) at any time during the charging process.



There are many ways of charging liquid in a “controlled manner” into the suction side:-

1. Use valve A on the manifold gauge set
2. Use the valve on the refrigerant cylinder
3. Charge through a Shredder valve
4. Use a hose with a Shredder valve depressor
5. Charge into the suction side at some distance from the compressor

2. **Charging procedures – Three phase compressors**

   The fundamental procedure is the same as for single phase models but the compressor can run in the wrong direction on starting. If this happens reverse any two phases and start again. Short term reverse rotation will not damage the compressor.

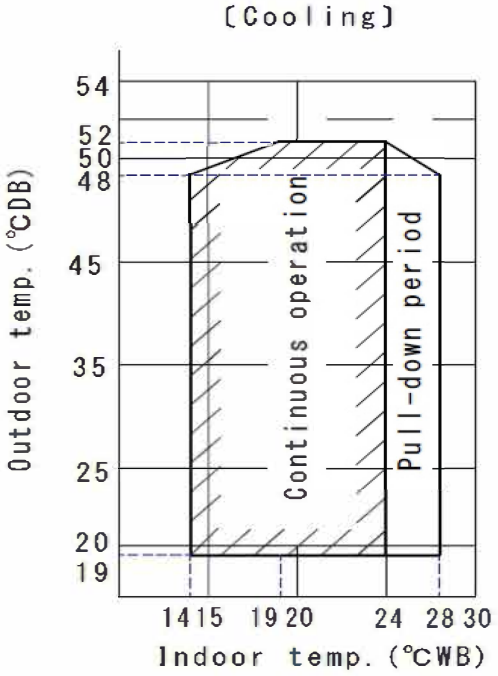
   All Scroll Compressors have internal discharge temperature protectors which are very effective in preventing dangerously high discharge temperatures during charging. The protection module will trip and lock the compressor out for 30 minutes. It is not normally necessary to wait 30 minutes for the module to reset. When the compressor has cooled down, the module can be reset by breaking the power supply to the control circuit. Very often the serviceman does not understand why the module tripped and uses a jumper wire to bypass it. He continues to charge the system and removes the jumper when charging is complete. The compressor may or may not run with the protector back in the circuit but it is certain that the compressor has been damaged and premature failure is inevitable.

Caution for refrigerant leaks

This system uses R410A as refrigerant . R410A itself is an entirely safe, non toxic, non- combustible refrigerant . Nevertheless care must be taken to ensure that air conditioning facilities are installed in a room which is sufficiently large. This assures that the maximum concentration level of refrigerant gas is not exceeded, in the unlikely event of major leak in the system and this in accordance to the local applicable regulations and standards.

10. STANDARD OPERATING CONDITIONS

Cooling only



NOTES:
The graph is based on the following conditions:
Equivalent piping length: 7.5m
Level difference : 0m
Air Flow Rate : High

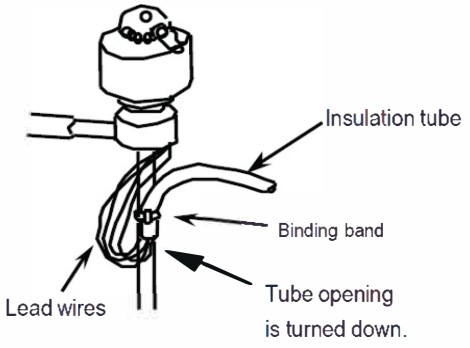
AUTO RANDOM RE-START FUNCTION

If there is a power cut when the unit is operating, it will automatically resume the same operating mode when the power is restored. (Applicable only to units with this feature)

11. SERVICE AND MAINTENANCE

Service Parts	Maintenance Procedures	Period
Indoor air filter	1. Remove any dust adhering to the filter by using a vacuum cleaner or wash in lukewarm water (below 40°C) with a neutral cleaning detergent. 2. Rinse the filter well and dry before placing it back onto the unit. 3. Do not use gasoline, volatile substances or chemicals to clean the filter.	At least once every 2 weeks. More frequently if necessary.
Indoor unit	1. Clean any dirt or dust on the grille or panel by wiping it with a soft cloth soaked in lukewarm water (below 40°C) and a neutral detergent solution. 2. Do not use gasoline, volatile substances or chemicals to clean the indoor unit.	At least once every 2 weeks. More frequently if necessary.

Note: In case of EXV replacement in field installed units, EXV wire insulation tube opening should be always in downward direction to avoid water droplets entering into insulation tube.



OPERATION MANUAL

1. SAFETY PRECAUTIONS

To gain full advantage of the air conditioner's functions and to avoid malfunction due to mishandling, please read this operation manual carefully before use.
Read the precautions thoroughly to avoid misuse of the equipment.
This product comes under the term “appliances not accessible to the general public“.

This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall only be done by persons described in manual.

The appliance is not intended for use by unattended young children or persons who are incompetent to operate air conditioners. It may result in injury or electric shocks.

- The precautions described herein are classified as WARNING and CAUTION. they both contain important information regarding safety. Be sure to observe all precautions without failure.
- There are two kinds of safety precaution and tips listed in the following.

⚠ WARNING.....Indicates a potential hazardous situation which, if not avoided,could result in death or serious injury.

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

- After reading, keep this manual in a convenient place so that you can refer to it whenever necessary. If the equipment is transferred to a new user, be sure also to hand over the manual.

■ DISPOSAL REQUIREMENTS

Disposal requirements
Your air conditioning product is marked with this symbol. This means that electrical and electronic products shall not be mixed with unsorted household waste.
Do not try to dismantle the system yourself: the dismantling of the air conditioning system, treatment of the refrigerant, of oil and of other parts must be done by qualified installer in accordance with relevant local and national legislation.

Air conditioners must be treated at a specialized treatment facility for reuse, recycling and recovery. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health. Please contact the installer or local authority for more information.
Batteries must be removed from the remote controller and disposed of separately in accordance with relevant local and national legislation.

⚠ WARNING

- **Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.**
- **The appliance must be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).**
- **Do not pierce or burn.**
- **Be aware that refrigerants may not contain an odour.**
- **Floor area required for installation of the equipment, refer to the installation manual of the outdoor unit.**
- **Do not place burners or heaters in places exposed to the airflow from the unit as this may impair combustion of the burner or heater.**
- **When the air conditioner is malfunctioning (giving off a burning odour, etc.), turn off the power to the air conditioner and contact your local dealer.**
  Continued operation under such circumstances may result in a failure, electric shocks or fire.

- **Consult your local dealer regarding modification, repair and maintenance of the air conditioner.** Improper workmanship may result in water leakage, electric shocks or a fire.
  Be sure to use fuses with the correct ampere reading.

- **Be sure to use fuses with the correct ampere reading.**
  Do not use improper fuses, copper or other wiring as a substitute, as this may result in electric shocks, fire, damage to the air conditioner.

- **Consult your local dealer if the air conditioner submerges owing to a natural disaster, such as flood or typhoon.**
  Do not operate the air conditioner in that case, or otherwise a malfunction, electric shocks, or fire may result.

- **Start or stop the air conditioner with the remote controller. Never use the power circuit breaker for this purpose.** Otherwise, it may cause fire or water leakage. Furthermore, if an automatic restart control is provided against power failure and the power is recovered, the fan will rotate suddenly and may cause injury.

- **Do not use the air conditioner in the atmosphere contaminated with oil vapor, such as cooking oil or machine oil vapor.**
  Oil vapor may cause crack damage to the air conditioner, electric shocks, or fire.

- **Do not use flammable materials (e.g., hairspray or insecticide) near the air conditioner. Do not clean the air conditioner with organic solvents such as paint thinner.**
  The use of organic solvents may cause crack damage to the air conditioner, electric shocks, or fire.

- **Do not use the air conditioner in places with excessive oily smoke, such as cooking rooms, or in places with flammable gas, corrosive gas or metal dust.**
  Using the air conditioner in such places may cause a fire or air conditioner failures.

- **Beware of a fire in case of refrigerant leakage.**
  If the air conditioner is not operating correctly, i.e. not generating cool or warm air, refrigerant leakage could be the cause. Consult your local dealer for assistance. The refrigerant used for the air conditioner is safe and normally does not leak. However, if the refrigerant leaks and gets in contact with a naked burner, heater or cooker, it may generate hazardous compounds. Turn off the air conditioner and call your local dealer. Turn on the air conditioner after the qualified service person makes sure to confirm that the leakage is repaired.

- **Do not place objects, including rods, your fingers, etc., in the air inlet or outlet.**
  Injury may result due to contact with the air conditioner's high speed fan blades.

- **Consult your local dealer regarding cleaning the inside of the air conditioner.**
  Improper cleaning may cause breakage of plastic parts, water leakage and other damage as well as electric shocks.

- **Be aware that prolonged, direct exposure to cool or warm air from the air conditioner, or to air that is too cool or too warm can be harmful to your physical condition and health. Consult your local dealer about installation work.**
  Doing the work yourself may result in water leakage, electric shocks or a fire.

- **Contact professional personnel about attachment of accessories and be sure to use only accessories specified by the manufacturer.**
  If a defect results from your own workmanship, it may result in water leakage, electric shocks or a fire .

- **Consult your local dealer regarding relocation and re-installation of the air conditioner.** Improper installation work may result in leakage, electric shocks or a fire.

- **Be sure to earth the air conditioner.**
  Do not earth the air conditioner to a utility piping, lightning conductor or telephone earth lead. Imperfect earthing may result in electric shocks or a fire. A high surge current from lightning or other sources may cause damage to the air conditioner.

- **Be sure to install an earth leakage breaker.**
  Failure to install an earth leakage breaker may result in electric shocks or a fire.

- **Be sure to use a dedicated power supply for the air conditioner.**
  The use of any other power supply may cause heat generation, a fire, or air conditioner failures.

- **Consult your local dealer regarding what to do in case of refrigerant leakage.**
  When the air conditioner is installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.

⚠ CAUTION

- **Children should be watched so that they do not play with indoor unit or its remote controller.**
  Accidental operation by a child may result in injury or electric shocks.

- **Do not allow a child to mount on the outdoor unit or avoid placing any object on it.**
  Falling or tumbling may result in injury.

- **Do not let children play on or around the outdoor unit.**
  If they touch the unit carelessly, injury may be caused.

- **Be sure that children, plants or animals are not exposed directly to airflow from the indoor unit, as adverse effects may ensue.**
- **Do not place flammable sprays or operate spray containers near the air conditioner as this may result in a fire.**
- **Do not wash the air conditioner or the remote controller with water, as this may result in electric shocks or fire.**

- **Do not place water containers (flower vases, etc.) on the indoor unit, as this may result in electric shocks or a fire.**
- **Do not put flammable containers, such as spray cans, within 1 m from the air outlet.**
  The containers may explode because the warm air from the indoor or outdoor unit will affect them.

- **Turn off the main power switch when the air conditioner is not to be used for prolonged periods.**
  When the main power switch is left on, some electrical power (watts) is still consumed even if the air conditioner is not operating. Therefore, switch off the main power switch to save energy. When resuming operation, to ensure smooth running, turn on the main power switch 6 hours before operating the air conditioner again.

- **Do not place objects in direct proximity of the outdoor unit and do not let leaves and other debris accumulate around the unit.**
  Leaves are a hotbed for small animals which can enter the unit. Once in the unit, such animals can cause malfunctions, smoke or a fire when making contact with electrical parts.

- **Before cleaning, be sure to stop the air conditioner operation, turn the power circuit breaker off.**
  Otherwise, an electric shocks and injury may result.

- **To avoid electric shocks, do not operate with wet hand**
  Never touch the internal parts of the remote controller.
  Touching certain internal parts will cause electric shocks and damage to the remote controller. Consult your local dealer about checking and adjustment of internal parts.

- **To avoid oxygen deficiency, ensure that the room is adequately ventilated if equipment such as a burner is used together with the air conditioner.**
  Do not leave the remote controller wherever there is a risk of wetting.
  If water gets into the remote controller there is a risk of electrical leakage and damage to electronic components.

- **Watch your steps at the time of air filter cleaning or inspection.**
  High-place work is required, to which utmost attention must be paid.
  If the scaffold is unstable, you may fall or topple down, thus causing injury.

- **Do not remove the outdoor unit's outlet side grille.**
  The grille protects against the unit's high speed fan, which may cause injury.

- **To avoid injury, do not touch the air inlet or aluminium fins of the air conditioner.**
- **Do not place objects that are susceptible to moisture directly beneath the indoor or outdoor units.**
  Under certain conditions, condensation on the unit or refrigerant piping, air filter dirt or drain blockage may cause dripping, resulting in fouling or failure of the object concerned.

- **Do not place heaters directly below the indoor unit, as resulting heat can cause deformation.**

- **Do not place appliances that produce naked flames in places exposed to the airflow from the air conditioner as this may impair combustion of the burner.**

- **Do not block air inlets and outlets.**
  Impaired airflow may result in insufficient performance or trouble.

- **Do not use the air conditioner for purposes other than those for which it is intended.**
  Do not use the air conditioner for cooling precision instruments, food, plants, animals or works of art as this may adversely affect the performance, quality and/or longevity of the object concerned.

- **Do not Install the air conditioner at any place where there is a danger of flammable gas leakage.**
  In the event of a gas leakage, build-up of gas near the air conditioner may result in a fire

- **Carry out drain piping properly to ensure complete drainage.**
  If drain piping is not carried out properly, drain will not flow out. Then, dirt and debris may be accumulated in the drain piping and may cause water leakage. If it occurs, stop the air conditioner and call your local dealer for assistance.

- **After prolonged use, check the unit stand and its mounts for damage**.
  If left in a damaged condition, the unit may fall and cause injury.

- **Do not sit or place objects on the outdoor unit.**
  Falling yourself or falling objects could cause injury.

- **Arrange the drain hose to ensure smooth drainage.**
  Imperfect drainage may cause wetting of the building, furniture etc.

- **Ensure that the remote controller is not exposed to direct sunlight.**
  This will cause discoloration of the LCD display with resulting loss of readability.

- **Do not wipe the controller panel with benzene or other organic solvent.**
  This will cause discoloration and/or peeling.
  If the panel needs cleaning, use a damp cloth with some water-diluted neutral detergent.
  Wipe with a dry cloth afterwards.

- **Never operate remote controller buttons with hard, pointed objects.**
- **Do not pull or twist the remote controller cord.**
  This may cause malfunctioning.

- **Do not operate the air conditioner when using a room fumigation type insecticide.**
  Fumigation chemicals deposited in the unit could endanger the health of those who are hypersensitive to such chemicals.

- **Take care of scaffolding and exercise caution when working high above ground level.**
- **Do not operate with the control panel lid open.**
  If water gets inside the panel, it may result in equipment failure or electric shock.

2. INSTALLATION SITE

Regarding places for installation

- **Is the air conditioner installed at a well ventilated place where there are no obstacles around?**
- **Do not use the air conditioner in the following places.**
  a. Filled with much mineral oil such as cutting oil.
  b. Where there is much salt such as a beach area.
  c. Where sulphured gas exists such as a hot–spring resort.
  d. Where there are considerable voltage fluctuation such as a factory or plant.
  e. Vehicles and vessels.
  f. Where there is much spray of oil and vapour such as a cookery, etc.
  g. Where there are machines generating electromagnetic waves.
  h. Filled with acid and /or alkaline steam or vapour.
- **Is a snow protection measure taken?**
  For details, consult your local dealer about snow protection hoods, etc.

Regarding places for installation

- **All wiring must be performed by a qualified personnel.**
  To do wiring, ask your local dealer. Never do it by yourself.
- **Make sure that a separate power supply circuit is provided for air conditioner and that all electrical work is carried out by qualified personnel according to local laws and regulations.**

Pay attention to running noises too.

- **Are the following places selected ?**
  a. A place that can sufficiently withstand the mass of the air conditioner with less running noises and vibrations.
  b. A place where the hot wind discharged from the air outlet of the outdoor unit and the running noises do not cause a nuisance to neighbours.
- **Are you sure that there are no obstacles near the air outlet of the outdoor unit ?**
  Such obstacles may result in declined performance and increased running noises.
- **If abnormal noises occur in use, stop the operation of the air conditioner, consult your local dealer.**

Regarding drainage of drain piping

- **Is the drain piping carried out properly to ensure complete drainage?**
  If drain piping is not carried out properly, dirt and debris may be accumulated in the drain piping and cause water leakage. If it occurs, stop the air conditioner and consult with your local dealer for assistance.

System relocation

- Consult your Daikin dealer about remodelling and relocation.

3. OPERATION PROCEDURE

- Operating procedure varies with heat pump type and cooling only type. Contact your local dealer to confirm your system type.
- To protect the air conditioner, turn on the main power switch 6 hours before operation.
- Do not shut off the power supply during seasonal use of the air conditioner.
  This is required in order to activate the air conditioner smoothly.
- If the main power supply is turned off during operation, operation will restart automatically after the power turns back on again.

Read the operation manual attached to the remote controller.

4. OPERATION CHARACTERISTICS

■ CHARACTERISTICS OF THE COOLING OPERATION

- If the COOLING OPERATION is used when the indoor temperature is low, frost forms on the heat exchanger of the indoor unit. This can decrease the cooling capacity. In this case, the air conditioner automatically switches to the DEFROST OPERATION for a while. During the DEFROST OPERATION, the low fan speed is used to prevent the discharge of melt water. (The remote controller displays the fan speed that is set.)

- When the outdoor temperature is high, it takes some time until the indoor temperature reaches the set temperature.

5. OPERATION RANGE

If the temperature or the humidity is beyond the following conditions, safety devices may work and the air conditioner may not operate, or sometimes, water may drop from the indoor unit.

Observe the following precautions to ensure the air conditioner operates.

OUTDOOR UNIT	INDOOR			OUTDOOR TEMPERATURE	
	TEMPERATURE		HUMIDITY		
RZR200BY16 RZR300BY16 RZR400BY16	DB	19 to 35	80% or below	DB	19 to 52
	WB	14 to 24			

DB: Dry bulb temperature (°C)
WB: Wet bulb temperature (°C)

6. OPTIMUM OPERATION

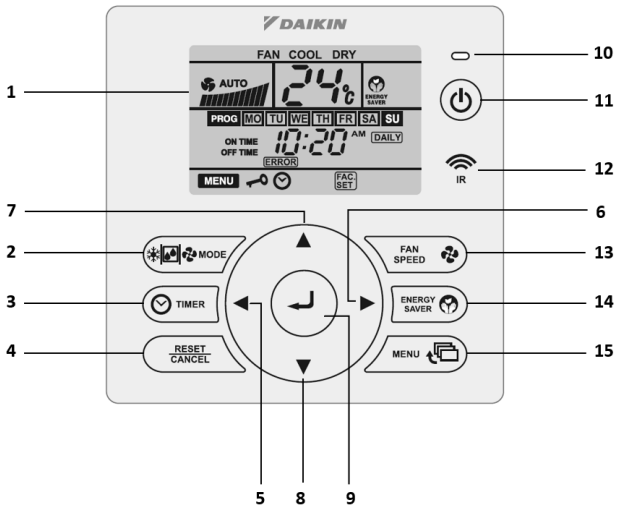
- Prevent direct sunlight from the window by using curtains or blinds during the COOLING OPERATION.
- Keep doors and windows closed. If the doors and windows remain open, room air will flow out and decrease the effect of cooling and heating.
- Never place objects near the air inlet and the air outlet of the air conditioner. It may decrease the effect or stop the operation.
- Set the airflow of the air discharge grille horizontally not to obstruct the wind. Otherwise, the wind will not come out and a failure may result.
- Adjust the room temperature properly for a comfortable environment. Avoid excessive heating or cooling.
- Operating the indoor unit with stained air filter may decrease capacity or cause malfunction.
- Install TV's, radios and stereos 1m ar more away from the indoor unit and remote controller. Images may become fuzzy and noise may be generated.

Turn off the power circuit breaker when it is not in use for a long period. When the power circuit breaker is turned on, small amount of power is consumed even if the air conditioner is not in operation.(*1)
Turn off the power circuit breaker for saving energy. When re-operating, turn on the power circuit breaker 6 hours before operation for smooth running.(*2)

*1 The consumed power while the outdoor unit is not in operation depends on the model.
*2 The setting before the power circuit breaker is cut off is stored. (The timer setting is cleared.)

Use the TIMER OPERATION effectively.
It takes some time until the indoor temperature reaches the set temperature. It is advisable to start operation in advance using the TIMER OPERATION.

7. OPERATING INSTRUCTION



1. LCD DISPLAY

It shows essential information and setting for controlling the AC Unit
It displays Set Temperature, Mode Indication, Fan Speed, Timer Setting, Menu Settings, etc.

2. MODE

Display operation modes COOL, DRY and FAN

3. TIMER

When user presses “TIMER” Key, PROG MO TU WE TH FR SA SU and DAILY will appear and MO will start flashing which shows user can enter in MONDAY Timers. For other days user can move to other days by LEFT/RIGHT Key.
There is 1 On-Timers & 1 Off-Timer for any day of week, with added “Daily” feature.

Procedure to Set Timers: -

a)Press Enter to set day. On set, selected day and ON TIME will get “ON” and “HOUR” of Timer will start blinking. On press LEFT/RIGHT key user can switch between HOUR&MINUTES. Blinking of hour/minute will show that it can be changed by UP/DOWN Key. With enter key user can set timer. If not press cancel key.
b)On set/ cancel on-timer "ON TIME" symbol will get ON and user can set/cancel off-timer with same way as on-timer.
c)After Sunday we get option of DAILY. we can set timers of daily in the same way as we did for other days.

Note:

-If “Daily” is selected then only “Daily” Timer will be effective for every Day and will hide all timers.
-On set of any timer, time will be shown for 2 sec on screen.
-On cancel of any timer “ “will be shown for 2 sec on screen.
-AM and PM will change when Hour changes at 12.

NOTE:

If any of timers is set for any day then on/OFF Timer icon gets on display for that day. ON/OFF Timer Icon will not get remove from display after Timer Execution. When day will get change then ON/OFF Timer Icon will get remove for screen if no timer is set for next day.

4. RESET / CANCEL

Press this key to reset or cancel the current operation.

5. LEFT KEY

Press this key to move the cursor position Left.

6. RIGHT KEY

Press this key to move the cursor position Right.

7. UP KEY

Press this key to increase the set temperature and change the timer values in Timers & clock time in Clock setting.

8. DOWN KEY

Press this key to decrease the set temperature and change the timer values in Timers & clock time in Clock setting.

9. ENTER KEY

This key is used to set the Timers & clock.
To set Slave setting of connected Slave.
To set lock feature on/off.
To set any settings in BMS
To check Slave id of respective Slave

10. POWER LED (Green in color)

On valid IR signal reception, this LED will blinks 2 times.
During any error in system LED will start blink.
If no abnormality in system, this LED will glow continuously.
LED will turned OFF when Power key is pressed.

11. POWER KEY

Press this key to turn ON & OFF the unit.

12. IR MODULE

Used to recieve the Signals from wireless remote.

13. FAN SPEED

Press this key to change the Fan Speed to Low, Medium, High and Auto.

14. ENERGY SAVER

Energy saver Mode work only in cool mode. In Energy saver mode, Set Temperature become "26" and Fan speed become "Medium". Set temperature and fan speed will not get changed.
Energy saver mode will get cancel by Mode Change or in standby mode or by pressing energy saver key again. On cancel Energy Saver, Fan Speed and set temperature will achieve their last status.

15. MENU

When “Menu” key pressed once then, “MENU” Symbol and all options of Menu Mode gets “ON”. Blinking of any symbol will show the cursor position of Menu Options.
To move on other options, use "Left" or “Right” key. MENU can have following options:

A) Key Pad Lock.
B) Clock Setting.
C) Factory Reset.
D) BMS Feature.

Above options are explained below:

A) Key Pad Lock:

To lock keypad, press Menu Key, MENU symbol and other symbol will get “ON”. Only "KEY" symbol will blink which indicates that user can toggle the lock keypad status. On pressing Enter key user can lock or unlock keypad.
If lock is activated, “ON/OFF”, “FAN SPEED”, “MODE”, “RESET/CANCEL” &”MENU” key will be active and Menu Mode will have only options to unlock keypad.
If invalid key is pressed on lock activation, "Key" symbol flashes 3 times to indicate that keypad is locked.

B) Clock Setting:

To change clock timings and day, press “MENU” Key. In Menu mode, user can reach to "CLOCK" symbol by left and right key and can enter in clock setting mode by pressing "Enter" key when clock symbol blinks.
On enter in clock setting mode, other options of Menu Mode will get cleared from screen and "**Clock**" & "**MO**" will start blinking. User can change day with Left or Right key. Press Enter to set day. On set, selected day will get “ON” and “HOUR” of clock will start blinking. On press LEFT/RIGHT key user can switch between HOUR & MINUTES. Blinking of hour/minute will show that it can be changed by UP/DOWN Key. When user press Enter Key in this mode, clock gets set with set Hour and minute and gets exit from this mode with clock symbol “ON” with clock time on this window.
Note:
1) If user wants to exit from clock setting mode, press RESET/CANCEL Key at any stage of above process.
2) AM and PM will change when Hour changes from 12 to 1.

C) Factory Reset:

In Menu mode, user can reach to -symbol by left and right key and can do Factory Reset by pressing
-Enter key when symbol blinks.
On Factory Reset, below setting gets applied:
Set Temp- 24˚C
Mode-Cool
Fan Speed-High
7 days Programmable timer- All set timers will get cleared and will get “--:--“and timer active will also get “OFF”.

D) BMS FEATURE

1) **BMS mode**: - when Slave is in BMS mode then setting of that Slave can't be changed from pendant of Slave. In this case only Master controller will have authority to change that Slave setting.

2) **Non- BMS mode**: - when Slave is in non-BMS mode then setting of that Slave can be change from pendant of Slave. In this case Master controller will not have authority to change that Slave setting. Master only show slave current settings.

How to Enable BMS ?

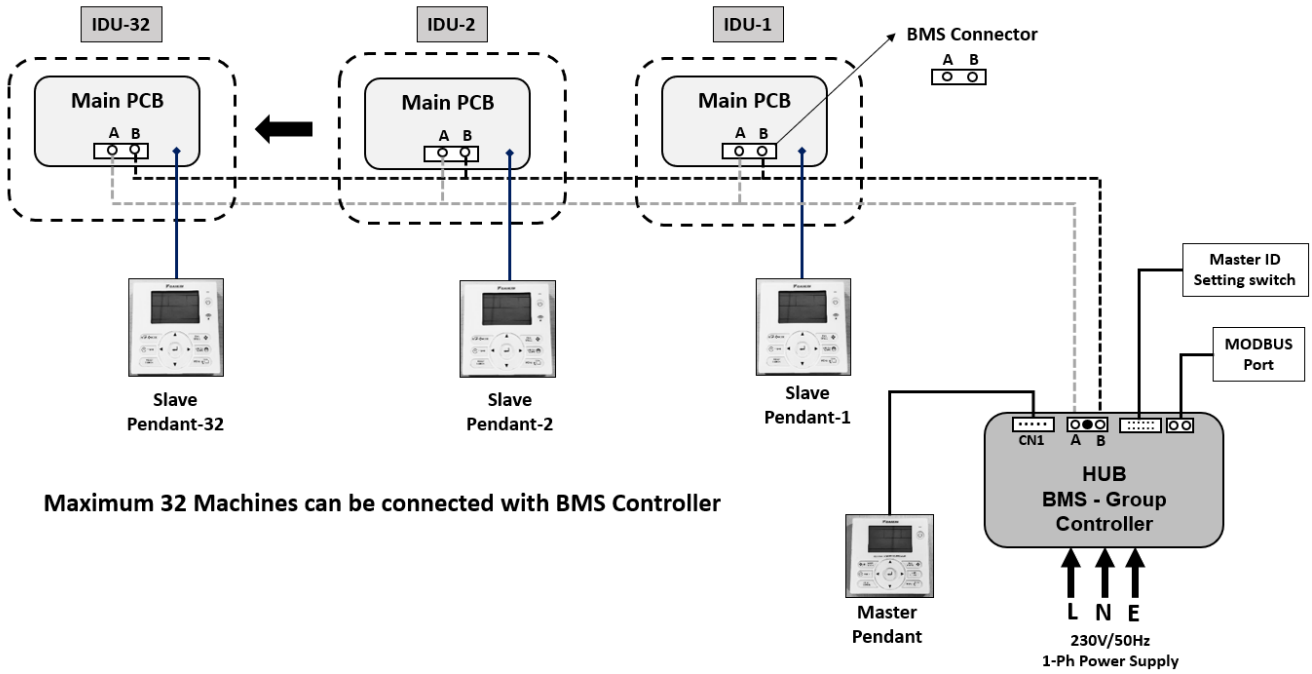
• Press MENU key and blinking of the icon is cursor position. Press left/right key to reach BMS icon. Press "Enter" on BMS icon to enter in BMS setting mode.
• Display blinks "00" & "PSrd" not blinks. Enter factory password "25" by up/down key. Cursor can move from 1's place & 10's place by left/right key then press Enter key. If wrong password is entered then display shows "Er"
• If correct password is entered then display will show "00" (indicates system is in NON-BMS mode) Change to "01" from UP/DOWN Key and press "Enter" key the BMS function will get enabled.
• If Slave is in BMS mode then only SLAVE will receive MASTER setting. If slave is in non- BMS mode then master only show setting change from slave.
• When BMS is enabled in slave Pendent and if FAN key, MODE key, Timer key, ENERGY SAVER key, Power key and enter key pressed then BMS icon blinked 3 Times.

NOTE :

1) If slave pendent is in BMS mode then, Real Time clock feature and Factory Reset feature will not appears on slave pendent display.
2) Master will scan Real time clock and Factory Reset can only be done from Master Pendent.
3) Master have no authority to change slave settings when BMS mode is disabled

How to allot Slave ID in Slave Pendent ?

Connect all slave units by looping the wire through BMS connector available in IDU PCB and terminate in HUB Controller Slave Port. Refer below connection diagram of PA Inverter Ducted units with BMS :



Maximum 32 Machines can be connected with BMS Controller

• Enable BMS Setting as per above procedure.
• Press MODE & RESET Key simultaneously for 5sec. Display blinks "00" & "PSrd" not blinks. Enter password "25" by up/down key. Cursor can move from 1's place & 10's place by left/right key then press Enter key. If wrong password is entered then display shows "Er" - blinks 3 times
• If correct password is entered then display will show "— —" and S-Id (Slave ID).
• When IDU Controller connected with HUB Controller available Slave IDs will get appear in place of "— —". With the help of UP/DOWN Key user can select available slave IDs and by pressing Enter key that particular ID get alloted to slave.
• When IDU Controller is not connected to HUB controller then, All Slave IDs from 1-32 will be available and operator can set any ID in between 1-32. If no key pressed for 10 seconds in slave ID selecting menu, then system exits to main window.
Note:- If no salve ID's are allotted then, in that case "nO S-Id" will be appears on Master at slave ID setting mode.

If Communication is not healthy between Master and Slave :

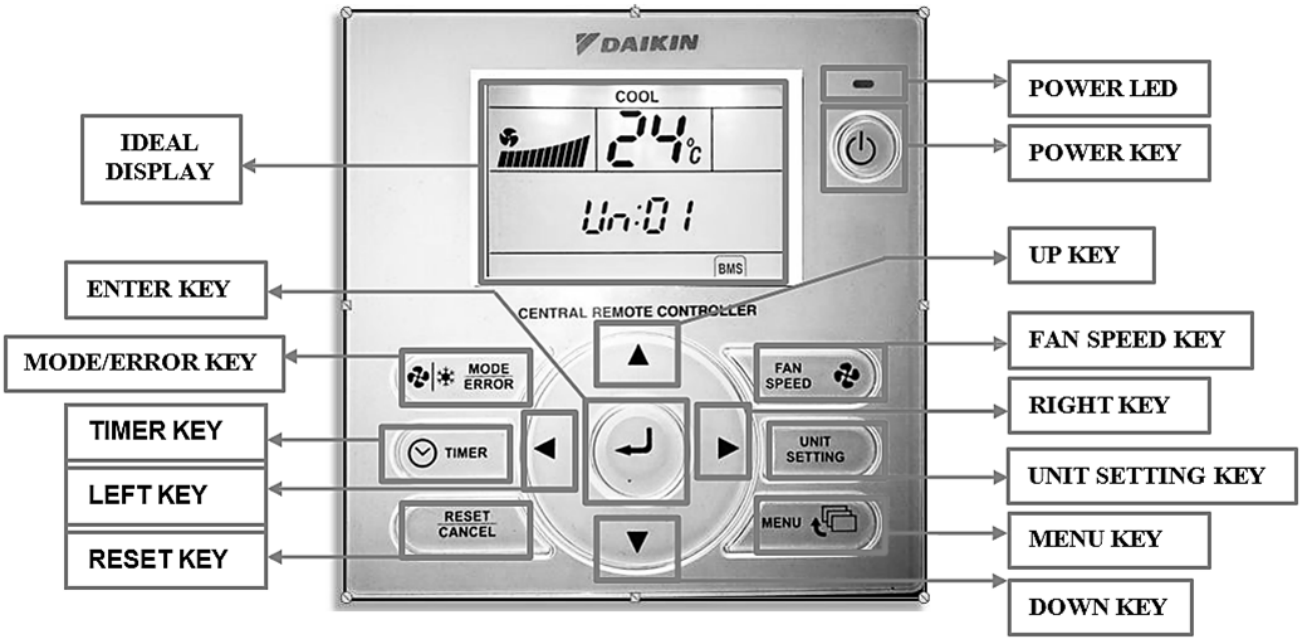
If communication between HUB and SLAVE is not healthy then that SLAVE Pendant display will show “bCEr” error.
On occurrence of bCEr” - Error Code

- ✓ System get Shut down (FAN & COMPRESOR will be turned OFF).
- ✓ If user wants to run the system, then user must disable the BMS feature.
- ✓ Note: - “bCER” Occurs after 3:30 Minute.

MASTER CONTROLLER

Master Controller is the controller which controls all BMS compatible slaves connected in system. The master pendant can display all the individual slave errors when they come. It consists of two sections: -

1) **Power Supply box:** Provides Power Supply to Master Pendant & two wires of communication channel will get terminated in this box
2) **Master Pendant:** The Pendant (as shown below) will be connected with Power Supply box.



Master Can Send Command in 2 Ways:

a) Slave Common Control Option (CCnt): In this mode all slaves will get the same settings.
b) Slave Individual Control Option (ICnt): In this mode Each Slave can have separate settings.

Master controller can control:
1) ON/OFF
2) SET TEMPERATURE
3) MODE
4) FAN SPEED (where applicable).
5) ON/OFF TIMER
6) MASTER will sync Clock of all BMS enabled connected slaves.

KEYS ON MASTER CONTROLLER:-

1. **Power Key:** This key is used to set power on/off feature of the Slave controller while doing Slave setting.
2. **Mode/Error key**: This key is used to set MODE of the Slave controller while doing Slave setting & used to check the Slave error.
3. **Fan speed** key: This key is used to set FAN SPEED of the Slave controller while doing Slave setting.
4. **Timer key**: This key is used to set ON/OFF Timer of the Slave controller.
5. **Unit setting** key: This key is used to enter in Slave Setting Mode.
6. **Reset/Cancel key**: This key is used to RESET Manual Error in the Slave, To exit from Timer Setting Mode, Menu Options, Slave setting Mode & Error view Mode and To cancel the ON/OFF Timer of Slaves.
7. **Menu key**: This key is used to see all options of Menu Mode.
8. **Up key:** This key is used to increment the ON/OFF Timer values, change Set Temperature & enable/disable Slave BMS feature.
9. **Down key**: This key is used to decrement the ON/OFF Timer values, change Set Temperature & enable/disable Slave BMS feature.

10. **Left key:**
- This key is used to see the other connected Slave on idle display.
- With help of this key we can view errors of other Slave in error display mode.
- To move the cursor towards left in Timer Setting Mode, Menu Mode.
- In Slave setting mode, this key is used to move on other BMS connected Slave
- In Slave BMS setting mode, this key is used to move on other connected Slave

11. **Right key:**
- This key is used to see the next connected Slave on idle display.
- With help of this key we can view errors of other Slave in error display mode.
- To move the cursor towards right in Timer Setting Mode, Menu Mode.
- In Slave setting mode, this key is used to move on next BMS connected Slave.
- In Slave BMS setting mode, this key is used to move on next connected Slave.

12. **Enter key:**
- This key is used to set the Timers & clock.
- To set Slave setting of connected Slave.
- To set lock feature on/off.
- To enter in any mode & To set any setting
- To check Slave id of respective Slave

DURING INSTALLATION, PLEASE READ BELOW INSTRUCTIONS:-

From Factory, SLAVE controller & MASTER controller both will come in “Factory set” mode.

Factory setting of SLAVE are:-

Slave Id	-	“00”
Temp	-	24˚C
Mode	-	Cool
Fan Speed	-	High
Unit status	-	If unit is ON, then unit will remain ON. If unit is OFF then, unit will remain OFF.
7 days Timer	-	All set timers will be reset

Factory setting of MASTER are:-

SLAVE Control (SCnt)	-	Common Control (CCnt) mode
Temp	-	24˚C
Mode	-	Cool
Fan Speed	-	High
Unit status	-	ON
Programmable timer	-	All set timers will be reset

Note: -

1) All BMS enabled slaves connected to System will get above setting.
2) If user wants to control all BMS enabled connected SLAVE individually then change “SCnt” setting to “ICnt” from “CCnt” in Menu mode option.
To communicate with MASTER, user have to change slave setting to BMS mode then, assigned slave ID number to SLAVE in between 1 to 32. If no slave id is allotted to slave pedant then, SLAVE will not communicate with MASTER.
If Slave is having ID=”00” then "00 S - Id" will be shown on Slave display for 1 second after every 5 second as warning.
If Slave Pendent in BMS mode and no valid ID have been provided then System get shut down (FAN & Compressor gets OFF).

VIEW SLAVE PARAMETERS IN MASTER:-

- If Master is not in any setting mode, then it will display status of each Slave connected to system.
- Master will display status of connected Unit 01 then it will display Unit 02 and so on (up to Unit 32). Parameters which can be viewed are:

1) Set Temperature
2) Mode
3) Fan speed
4) ON/OFF status
5) Any error (Er) occurred.
6) BMS/Non-BMS setting of Slave

- If any error gets occur in Slave then MASTER response on idle display:-
- If any error occurs in Slave then Master idle display shows blinking “ERROR” icon when parameter of respective Slave are on display.

For Example: If unit 2 is having HP error, then "ERROR" icon will blink on Un: 02 but in Un: 01 as there is no error so "ERROR" icon will not appear on remote display.

- If any Slave controller demands for Manual Reset then, it will be shown at Master display. User can reset with the help of Reset/Cancel key from Master pendant which have error.

• To Reset manual error from Master pendent:- wait on ideal display, when manual error occurred slave displayed or Press right/ left key and go to manual error occurred slave, and press “Reset/Cancel" key to reset manual error.
• To Reset manual error form slave Pendent:- If slave is in non BMS mode, then press "Reset/Cancel" key, manual error gets removed. If slave is in BMS mode and disable BMS mode and press Reset key, manual error removed.
If slave is in NON-BMS mode then, manual reset error occurs then, it can reset form both MASTER pendent and slave pendent.
If slave is in BMS mode and manual reset error occurs then, it only reset form MASTER pendent.

Slave error check by Mode Key from Master:-

✓ If Slave is having error, then error of each Slave can be seen with the help of Mode key. Press Mode key to enter in Error Display Mode. In this Mode, Slave id gets appear on Set Temperature window and below that Error Code will appear Er.
✓ Press “Left/Right” key to move next/previous Slave id's.

✓ The errors will be shown automatically with an interval of 5 sec on each Slave and it get exit to idle display after completing one cycle of connected Slave Ids or move to next Slave (if error present).
✓ If any error occurs in any of the Slave then Master POWER LED also get blink.
✓ If no any error is present on Slaves then Master display show “nO Er” by pressing of Mode key

MENU KEY FUNCTION IN MASTER PENDENT:

When “MENU” Key is pressed, ”MENU” Symbol and all options of Menu Mode gets “ON”. Blinking of any symbol will show the cursor position of Menu Options.
To move on other options, use "Left/Right" key.
MENU can have following options:
1) SLAVE Control Options (SCnt)
2) Key Pad Lock.
3) Clock Setting.
4) Factory Reset.
5) BMS Setting.

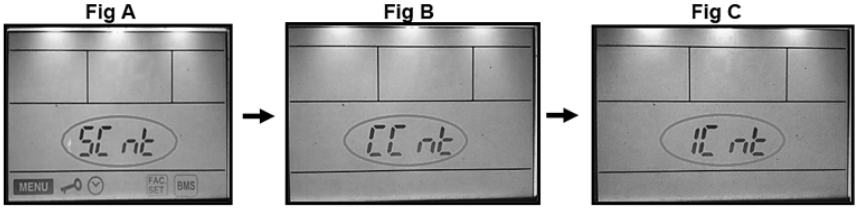
NOTE:- If slave pendent in BMS mode then, Real Time clock feature and Factory Default feature will not work. These feature only work when BMS mode is disable.

Above options are explained below:-
In Menu Mode, there will be two conditions:
1) If Master is not locked then “SCnt” Icon will start blink which shows cursor is on this Option.
2) If Master is locked then only “Key” Icon will blink

➢ **SLAVE Control Options (SCnt) settings :-**

Slaves can be operated in 2 modes:-
1) Slave Common Control Option (CCnt): In this mode all BMS Selected Slaves will get same settings which are set in “UALL” option of slave setting.
2) Slave Individual Control Option (ICnt): In this mode all BMS selected Slaves will get their respective settings which are set in “U:01” to “U:32” option of slave setting.
If system is not locked then we can enter in Menu mode by pressing of "MENU" key. When enter in menu option "SCnt" start blinking now, press "ENTER" key to enter in "SCnt" options. If previous state is "CCnt" mode then on entering "CCnt" will blink on window as shown in Fig B.
If pervious state is "ICnt" then on entering "ICnt" will blink on window as shown in Fig C
To switch between two modes, Press “ UP” or “ DOWN” Keys. After selection, Press Enter Key to save your selection.
On enter Key Press, it will return to ideal display.
Note: - If previous set setting is “ICnt” mode and user change setting to “CCnt” mode then, slave which is in BMS mode gets OFF.

Fig A Fig B Fig C



➢ **Key Pad Lock:**

To lock keypad, press Menu Key, MENU symbol “SCnt” start blinking and other symbol will get “ON”. Now, from “Right/ Left” key get to “keypad lock” icon this symbol will start blinking. Which indicates that user can toggle the lock keypad status. On pressing Enter key user can lock or unlock keypad.
If lock is activated then “MENU” key is pressed then, Menu Mode gets open. In menu mode only “keypad lock” icon start blinking. To UNLOCK press “Enter key”. when Invalid key is pressed and lock is activated, symbol flashes 3 times to indicate that keypad is locked.

➢ **Clock Setting:**

To change clock timings and day, press “MENU” Key. In Menu mode, user can reach to "CLOCK" symbol by left and right key and can enter in clock setting mode by pressing "Enter" key when clock symbol blinks.

On entering in clock setting mode, other options of Menu Mode will get cleared from screen and & will start blinking. User can change day with Left or Right key. Press "Enter" to set day. On set, selected day will get “ON” and “HOUR” of clock will start blinking. On press "LEFT/RIGHT" key user can switch between HOUR & MINUTES. Blinking of hour/minute will show that it can be changed by UP/DOWN Key. When user press Enter Key in this mode, clock gets set with set Hour and minute and gets exit from this mode with clock symbol “ON” with clock time on this window.

Note:

1) If user wants to exit from clock setting mode, press RESET/CANCEL Key at any stage of above process.
2) AM and PM will change when Hour changes at 12.
3) Master clock will be sync to all BMS enabled connected slaves.

➢ **Factory Reset in Master Pendant**

On Factory Reset Master get set in slave common control (CCnt) mode. UALL parameter in MASTER will get following settings:-

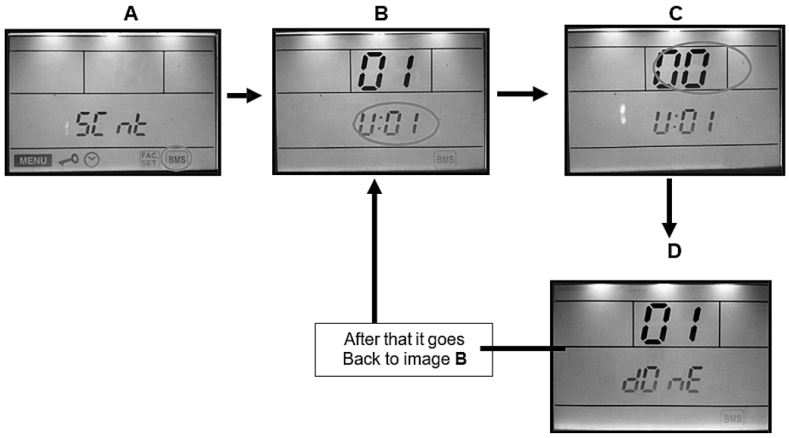
Temp- **24˚C**, Mode- **Cool**, Fan Speed- **High**, SCnt- **CCnt**, Unit status- **ON**.

7 days Programmable timer/daily timer will get cancel if set. In weekly timer when factory reset is done then, only timer of that particular day get reset. Rest of weekly timer not get effected

Note: All BMS enabled slaves get above setting.

➢ **Slave BMS/NON-BMS Setting from Master:-**

Press MENU key, & reach to BMS icon as shown in below image A. Blinking of the icon is the cursor position. When BMS icon get blink press ENTER key to enter in slave BMS setting mode as shown in image B. press left/right key to shift on other connected slave for example: “U:01”<-->“U:02”. Press enter key to enter in selected slave. Now user can change the BMS enable/disable setting of the connected slave. “00” is disable BMS feature & BMS icon get invisible of respective slave & “01” is enable BMS feature & BMS icon get visible of respective slave as shown in image B & C. After selection, press enter key to set BMS feature enable/disable. After that display will appear “**dOnE**” as shown in image D. After that display will be back as image B. After 10 second it get automatically exit on idle display.

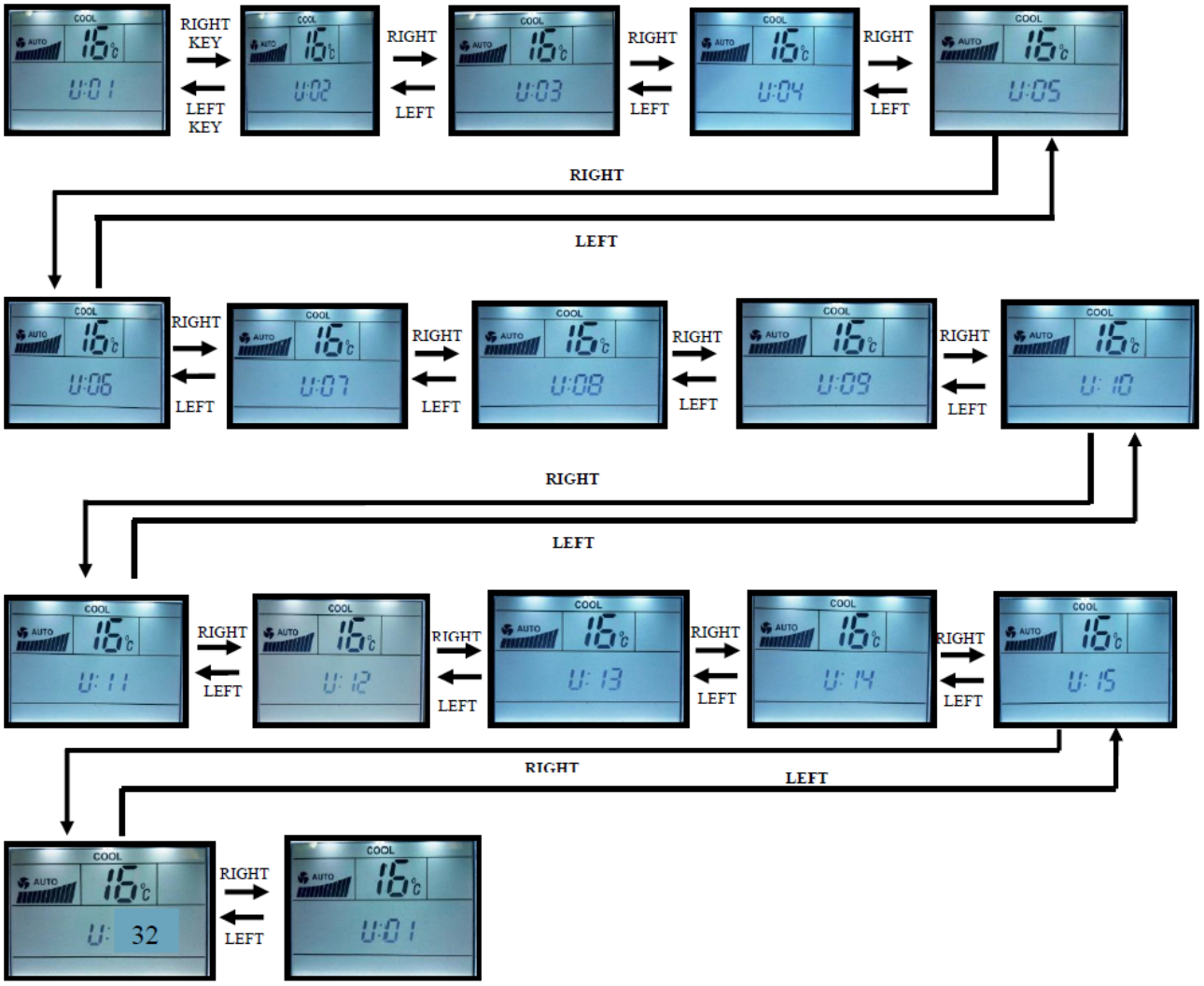


Unit setting key:

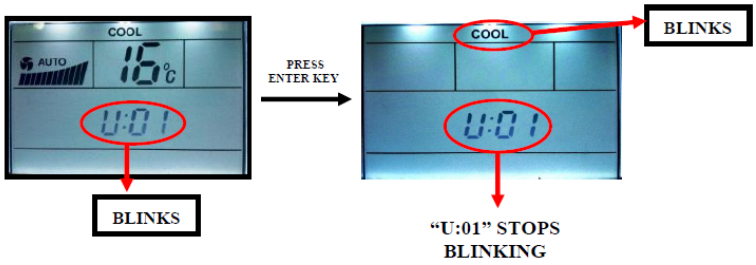
If “Slave Individual Control Option” (ICnt) is set in “Slave Control Option” (SCnt).

- Press Unit setting key then window will be open as shown below in picture:-

- BMS enabled connected slaves will be shown in master pendant as shown in above image.
- If all 32 slaves are connected and BMS mode is active in all slaves then as shown below selected Mode starts blink.



If user wants to change setting of unit 01, user will have to press unit setting key then press Enter Key when master shows U:01



By pressing Mode Key we can change mode of Unit 01.
To set mode press Enter key. On pressing Enter Key, Mode icon stops blinking and selected Fan speed will start blinking as shown below:

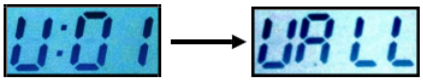
By pressing fan key we can change fan speed of Unit 01.
To set fan speed press Enter key. On pressing Enter Key, fan speed icon stops blinking and Set temperature will start blinking as shown below:

Note6: - This window will be skipped in fan mode

By pressing up/down key we can change Set Temperature of Unit 01.
To SELECT Set Temperature press Enter key. On pressing Enter Key, Set temperature icon stops blinking and "On" will start blinking on the place of set temperature window as shown below:

By pressing on/off key we can set system on/off of Unit 01.
To set on/off setting press Enter key. On pressing Enter Key, display show "dOnE" as shown below:

Similarly, as above settings will be applies in "CCnt" of slave control options "SCnt". Only U:01 will change to "UALL" in above setting.
The settings will be applied for all slaves.



- If slaves is connected with master but all connected slave are in NON-BMS mode and then, unit setting key is pressed then, display will show as image B. In this case master can read the data of connected slaves as shown image A.

A

B

✓ If left/right keys is not pressed then it automatically jump to next connected unit after 5 sec.
✓ If a left/right key is pressed one time then it jump to next connected unit. Now, if right/left key not pressed then, unit automatically jumps to next connected unit after 10 sec.

➢ **Slave 7 Days Programmable Timer Setting from Master:-**

✓ If system is in "CCnt" mode & user presses "TIMER" Key then "UALL" show on display for 1 second together with "ONTIME" & "OFFTIME" icon as show in below image A. after that PROG MO TU WE TH FR SA SU DAILY will appear and MO will start flashing which shows user can enter in MONDAY Timers(shown in image B). For other days user can move to other days by LEFT/ RIGHT Key.

A

B

If timers set in “CCnt” mode then that set timer will effect on all slaves in which BMS is enabled.

✓ If system is in “ICnt” mode & user presses “TIMER” Key then BMS enabled connected units show on display together with “ONTIME” & “OFFTIME” icon as show in below image C. user can shift unit selection with the help of left/right key as shown in image C & D. press ENTER key to select the particular unit after that PROG MO TU WE TH FR SA SU DAILY will appear and MO will start flashing which shows user can enter in MONDAY Timers (shown in image E). For other days user can move to other days by LEFT/RIGHT Key.

C

RIGHT KEY

LEFT KEY

D

E

Procedure to Set Timer

(a) Press Enter to set day. On set, selected day and ON TIME will get “ON” and “HOUR” of Timer will start blinking (shown in image F). On press LEFT/RIGHT key user can switch between HOUR & MINUTES. Blinking of hour/minute will show that it can be changed by UP/DOWN Key. After selecting of timer press enter key to set timer. If not press cancel key “ --:-- ” will displayed.
(b) On set/ cancel Off-timer, OFF TIME symbol will get ON and user can set/cancel off-timer with same way as on-timer (shown in image G).
(c) After Sunday user get option of DAILY. User can set timers of daily in the same way as we did for other days.

F

G

Slave pendent remove scenario:-

➢ **In BMS MODE:-**

a) System from factory default setting always in non BMS mode.
b) After installation, slave pendent, HUB controller and master pendent must require.
c) After power on the slave and hub controller. Users have to go to setting and change system to BMS mode. As process of explained above.
d) Now, after BMS enabled BMS icon active on display and system shows salve id 00.
e) Now, allotment of available slave ID process.
f) After slave id then on master pendent slave id data is start displayed.
g) Now, if user wants to remove slave pendent user can remove and system is controlled from master pendent.
h) In the if slave is not present and any error occurs in slave pendent then error can be seen on master pendent.

Note:- User can remove slave pendent only, when hub controller and master pendent is connected and system in BMS mode.

➢ **In NON BMS MODE:-**

a) System from factory default setting always in non BMS mode.
b) If HUB controller and master pendent is not connected then, user cannot remove the slave pendent.
c) If system is in non BMS mode and user remove the slave pendent then, system get shutdown immediately.

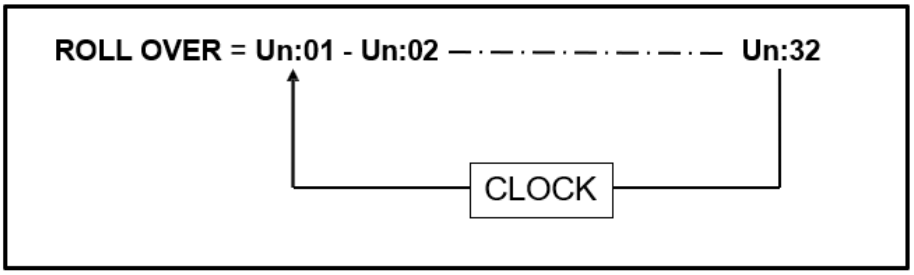
➢ **MASTER sensing routine of any SLAVE, if it disconnected while system running:-**

If any “SLAVE” get disconnected while system running, then “MASTER” senses it after completion of one roll over.

➢ **MASTER sensing routine of any SLAVE, if it connected while system running:-**

If any “SLAVE” get connected while system running, then “MASTER” senses it after completion of one roll over.

Roll over is complete when unit jump from last unit to 1st unit that shown in below:-



HUB ID Setting for 3rd Party Modbus Application :-

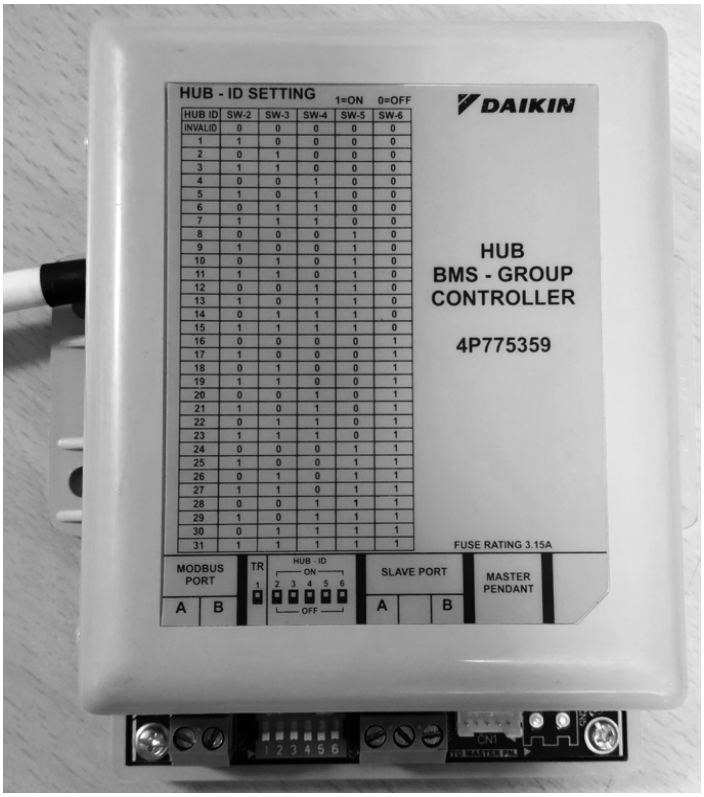
How to enable/disable MODBUS PORT?

There is a Slider switch – 1 which is used to enable and disable communication from MODBUS Port . If Switch is at position ON then user can communicate from this port.

If Switch is at position OFF then user cannot communicate from this port.

How to set HUB-ID?

If Modbus Port is enabled, then user can select HUB ID from slider switch to communicate from Modbus Port. User can select IDs from 0 to 31. From id 0 also user cannot communicate. Below is the table given on the HUB Controller Box to select ID.



HUB - ID SETTING **1=ON** **0=OFF**

HUB ID	SW-2	SW-3	SW-4	SW-5	SW-6
INVALID	0	0	0	0	0
1	1	0	0	0	0
2	0	1	0	0	0
3	1	1	0	0	0
4	0	0	1	0	0
5	1	0	1	0	0
6	0	1	1	0	0
7	1	1	1	0	0
8	0	0	0	1	0
9	1	0	0	1	0
10	0	1	0	1	0
11	1	1	0	1	0
12	0	0	1	1	0
13	1	0	1	1	0
14	0	1	1	1	0
15	1	1	1	1	0
16	0	0	0	0	1
17	1	0	0	0	1
18	0	1	0	0	1
19	1	1	0	0	1
20	0	0	1	0	1
21	1	0	1	0	1
22	0	1	1	0	1
23	1	1	1	0	1
24	0	0	0	1	1
25	1	0	0	1	1
26	0	1	0	1	1
27	1	1	0	1	1
28	0	0	1	1	1
29	1	0	1	1	1
30	0	1	1	1	1
31	1	1	1	1	1

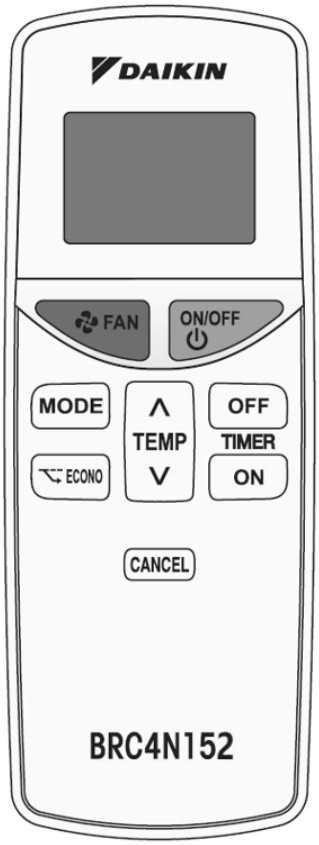
Note:

1. To change HUB-ID, Please Power OFF HUB PCB and set ID then do Power ON again. PCB read Slider Switch id only on Power Reset.
2. SW-1 is used for termination, when multiple slaves are connected then this should be "ON"

WIRELESS REMOTE OPERATION

Wireless Remote Features :

From wireless remote user can control: -
• Unit ON/OFF status
• Operating Mode : COOL, DRY and FAN Mode
• Fan speed : Low, Medium, High and Auto
• Set Temperature : 16~30 ^{O}C
• ECONO : Energy Saver Mode.
• ON and OFF Timers.
  - These Timers do not get memorized.
  - These Timers do not have any relation with Wired Remote Timers.



Working of Wireless remote with Wired pendant :

• If there is no Timer activated in 7 Days Programmable Timer of particular day and user sets OFF Timer of 2 hours from wireless remote, then System gets OFF after 2 hours.
• If there is OFF-Timer set at 12:10 PM in 7 Days Programmable Timer of particular day and User sets OFF Timer of 1 hours at RTC Time of 10:00 AM, then System gets OFF after 1 hour (at 11:00 AM) w.r.t Wireless Remote and if user again ON the system at 11:10AM, then as per 7 Days Programmable Timers of 12:10PM system gets OFF when wired remote clock reached 12:10PM.
• If there is 11:00PM in clock of particular day and user sets OFF times of 2hours from wireless remote, then system gets OFF at 1:10AM of next day. If power-cut occurs in between the on power reset, system will check if 1:10AM has passed over or not. If it gets passed over the timer get cancel else it will wait for 1:10AM to execute timer by showing OFF-timer icon on display.
• Timers set by wireless Remote gets cancel on pressing "CANCEL" Key from Wireless Remote or from Factory Reset option in Wired Pendant.
• Timers Cancel Command from Wireless Remote cannot cancel Timers Set in 7 Days programmable Timers. It can only cancel Timer set from Wireless Remote.
• If ON-Timer/OFF-Timer is set from any mode (by Wireless Remote or 7 Days Programmable Timer) then ON-TIME/OFF-TIME Icon gets appear on display respectively.

Other Features :

• **Child Lock** : Child lock feature can be activated by pressing the ECONO key for more than 10sec. To cancel Child Lock again press the ECONO key for 10sec.
• **ECONO** : From ECONO button- Energy Saver can be set/cancel.
• **IR Signal** : On valid IR-signal reception, Green LED of wired pendant will blink 2times.

NOTE : Wireless remote can be used with a maximum range of 8 meter from the wired pendant. On valid IR-signal reception, Green LED of wired pendant will blink 2times. If LED does not blink, it means signal has not been received.

8. MALFUNCTION CODES

Division	Error	Error Description
Indoor	A5	Freeze-up protection control
	C4	Malfuction of Coil thermistor
	C9	Malfuction of Suction Air thermistor
Outdoor	E3	Activation of High pressure switch
	E4	Activation of Low pressure switch
	E5	Compressor startup pressure diff. Abnormal
	E6	Compressor Out of Envelope
	E9	Malfuction of Electronic Expansion Valve
	F3	Discharge Pipe temp. Abnormal
	H9	Malfuction of Outdoor Air thermistor
	J3	Malfuction of Discharge Pipe thermistor
	J5	Malfuction of Suction Pipe thermistor
	J6	Malfuction of Condenser thermistor
	L2	Compressor Drive Board Alarm
	L4	Malfunction of IPM temperature rise
	L5	DC output overcurrent
	L9	Malfunction of Inverter comp. startup error
	LC	Malfunction of transmission b/w Outdoor controller and Comp Drive Board
	PJ	Outdoor Unit Capacity Setting Error
System	U1	Power voltage imbalance / Reverse Phase / Open Phase
	U2	DC under/over voltage or Instanteneous Power Failure error
	U4	Malfunction of Transmission b/w IDU and ODU
	U5	Malfunction of Transmission b/w IDU and Remote Controller
BMS	bCEr	Malfunction of Transmission b/w IDU and HUB Controller
	HUEr	Malfunction of Transmission b/w HUB Controller and Central Remote Controller

NOTE :

1. If HP Alarm occurs 6 times within 1 hour, alarm hold on and restoration can do after power off.
2. If LP Alarm occurs 6 times within 1 hour, alarm hold on and restoration can do after power off.
3. If Discharge Alarm occurs 6 times within 1 hour, alarm hold on and restoration can do after power off.
4. Error code should be displayed on wired Pendant and ODU Controller 7-segment display.

If the fault persists, please call your local dealer / serviceman.

9. TROUBLESHOOTING

If any malfunction of the air conditioner unit is noted, immediately switch off the power supply to the unit. Check the following fault conditions and causes for some simple troubleshooting tips.

Fault	Causes/Action
1. The compressor does not operate 3 minutes after the air conditioner unit is started.	- Protection against frequent starting. Wait for 3 to 4 minutes for the compressor to start operating.
2. The air conditioner unit does not operate.	- Power failure, or the fuse needs to be replaced. - The power plug is disconnected. - It is possible that your delay timer has been set incorrectly. - If the fault persist after all these verifications, please contact the air conditioner unit installer.
3. The air flow is too low.	- The air filter is dirty. - The doors or windows are open. - The air suction and discharge are clogged. - The regulated temperature is not high enough.
4. Discharge air flow has bad odour.	- Odour may be caused by smoke particles, perfume etc. which might have adhered onto the coil.
5. Condensation on the front air grille of the indoor unit.	- This is caused by air humidity after an extended long period of operation. - The set temperature is too low, increase the temperature setting and operate the unit at high fan speed.
6. Water flowing out from the air conditioner unit.	- Switch off the unit and call dealer.
7. Hissing air flow sound from the air conditioner unit during operation.	- Refrigerant fluid flowing into the evaporator coil.
8. Room Temperature Sensor Fail display on Remote (C9)	- If sensor is short / open / not connected, it will be considered as sensor fail. It will automatically reset when Room sensor is corrected.
9. Indoor Antifreeze sensor Fail display on Remote (C4)	- If sensor is short / open / not connected, it will be considered as sensor fail. It will automatically reset when Indoor Antifreeze sensor is corrected.
10. HP Error display on Remote (E3).	- If discharge pressure is very high or over the limit (>605psi) then high pressure switch (HP) opens and cut off the power supply to compressor. - This is caused when condenser fan does not work. - Ambient temperature is very high, above the limit.
11. LP Error display on Remote (E4).	- If Suction pressure is too low or below the limit (<65 psi) then low pressure switch (LP) opens and cut off the power supply to compressor.
12. Communication Failure (U4)	- This is caused by Communication wire break or faulty. - The Error will be Reset after changing the communication wire - Use shielded cable for communication.
12. Indoor Antifreeze Activation on remote (A5).	- If indoor coil tube temperature reaches ≤ -4 ^{0}C 1. Check unit airflow for any restriction (Air filter blockage) 2. Low gas charge / Refrigerant circuit partial blockage.

If the fault persists, please call your local dealer / serviceman.

PROTECT THE ENVIRONMENT FROM E-WASTE (GUIDELINES)

Meaning of E-waste under E-Waste (Management) Rules,2022 (E-waste Rules) -Waste electrical and electronic equipment, whole or in part of reject from their manufacturing and repair process, which are intended to be discarded.
Our product is RoHS compliant.

Don't dump Electrical and Electronic Products in Garbage Bins

DO'S & DONT'S

DO'S	
Run and maintain the air conditioner as per the instructions given in the operation / instruction manual	✔
Ensure that an authorised person repairs your air conditioner	✔
Call our local authorised dealer or our toll free number to dispose your air conditioner	✔
Contact an authorised dealer in case or installation or de-installation	✔
Consult our local authorised dealer or our toll free number on the life span of the air conditioner	✔

DONT'S	
Do not try to repair your air conditioner on your own	✘
Do not sell or dispose your air conditioner or parts to an unauthorised Kabbadi wala / Scrap Dealer / Ragpickers	✘
Do not dismantle your air conditioner on your own	✘
Do not get your air conditioner or any parts repaired by an unauthorised person	✘
Do not dispose off the E-waste in landfills	✘
Do not use the air conditioner as furniture after its use	✘

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