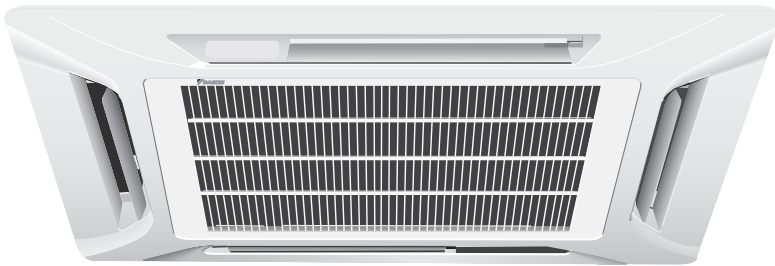


DAIKIN



INSTALLATION MANUAL



Installation manual
Chilled Water Fan Coil Units

English

Models

FWC02AAFNMV1

FWC03AAFNMV1

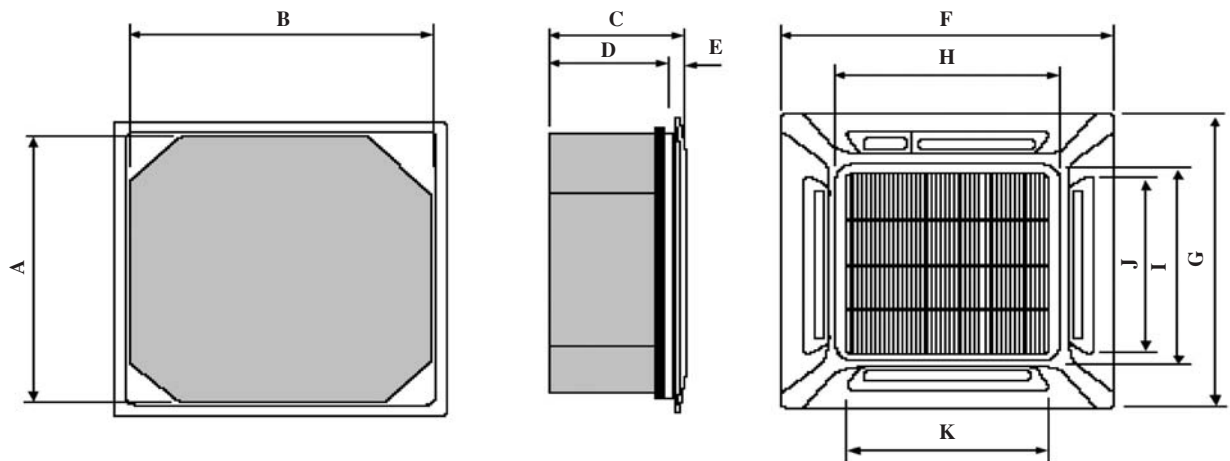
FWC04AAFNMV1

FWC05AAFNMV1

FWC06AAFNMV1

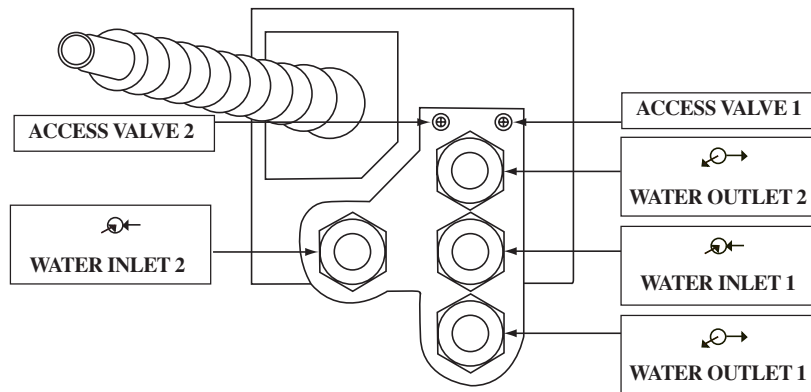
OUTLINE AND DIMENSIONS

Indoor Unit: FWC02AAFNMV1 / FWC03AAFNMV1 / FWC04AAFNMV1 / FWC05AAFNMV1 / FWC06AAFNMV1



All dimensions are in (mm)

Model	A	B	C	D	E	F	G	H	I	J	K
FWC02AAFNMV1	820	820	363	335	28	930	930	642	622	555	555
FWC03AAFNMV1	820	820	363	335	28	930	930	642	622	555	555
FWC04AAFNMV1	820	820	363	335	28	930	930	642	622	555	555
FWC05AAFNMV1	820	820	363	335	28	930	930	642	622	555	555
FWC06AAFNMV1	820	820	363	335	28	930	930	642	622	555	555



Note:

- Water Inlet 1* must couple with Water Outlet 1 and Access Valve 1. (*1 connection to chiller)
- Water Inlet 2* must couple with Water Outlet 2 and Access Valve 2. (*2 connection to Boiler)
- Valve cap of Access Valve 1 is painted red for identification.
- All union joints are to be screwed in together with an “O” -ring. Apply Teflon white tape on the screw threads to ensure leak proof joints.
- Secure all screw connection tightly to prevent leakage.



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.
- All electrical wiring must not touch the water piping or any moving parts of the fan motors.
- Confirm that the unit has been switched OFF before installing or servicing the unit.
- Risk of electric shock, can cause injury or death. Disconnect all remain electric power supplies before servicing.
- DO NOT pull out the power cord when the power is ON. This may cause serious electrical shocks which may result in the 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}.

CAUTION

Please take note of the following important points when installing.

- **Ensure that te drainage piping is connected properly.**
 If the drainage piping is not connected properly, it may cause water leakage which will dampen the furniture.
- **Ensure that the unit's panel is closed after service or installation.**
 Unsecured panels will cause the unit to operate noisily.
- **Air swing connector and LED wire connector shall be inside the control box.**
- **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 operate any heating apparatus too close to the air conditioner unit.** This may cause the plastic panel to melt or deform as a result of the excessive heat.
- **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.**

NOTICE

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.

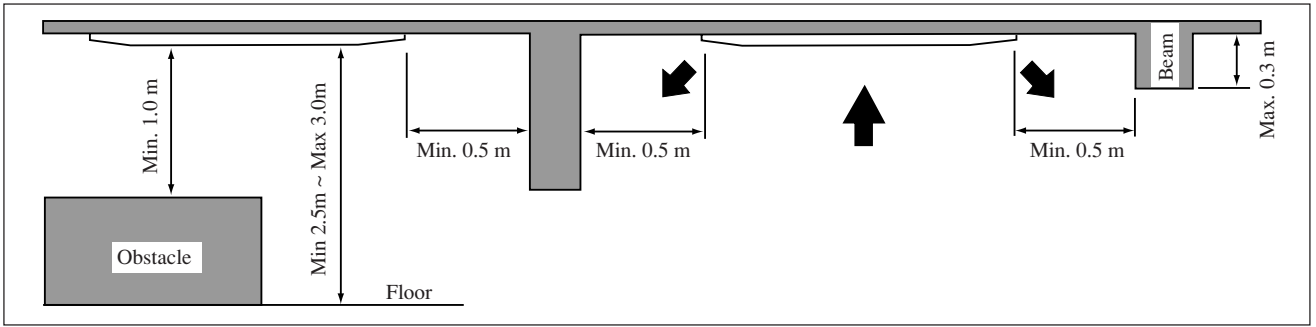
Do not try to dismantle the system yourself: the dismantling of the air conditioning system, treatment of the refrigerant, of oil and of other parts must be done by a qualified installer in accordance with relevant local and national legislation.

Air conditioners must be treated at a specialized treatment facility for re-use, 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.



1. Preliminary Site Survey

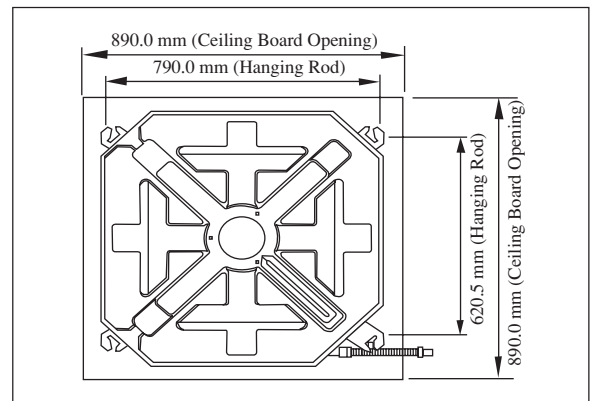


- Electrical supply and installation is to conform to local authority’s (e.g. National Electrical Board) codes and regulations.
- Voltage supply fluctuation must not exceed $\pm 10\%$ of rated voltage. Electricity supply lines must be independent of welding transformers which can cause high supply fluctuation.
- Ensure that the location is convenient for wiring, piping and drainage.
- The indoor unit must be installed in such that is free from any obstacles in path of cool air discharge and warm air return, and must allow spreading of air throughout the room (near the center of the room)
- Provide clearance for the indoor unit from the wall and obstacles as shown in the figure.
- The installation place must be strong enough to support a load 4 times the indoor unit weight to avoid amplifying noise and vibration.
- The installation place (hanging ceiling surface) must be levelled and the height in the ceiling is 350mm or more.
- The indoor unit must be away from heat and steam sources (avoid installing it near an entrance).

2. Unit Installation

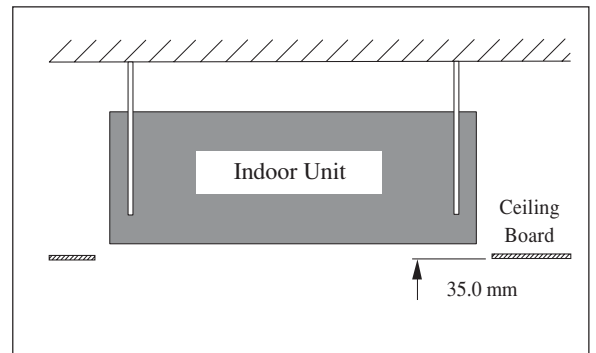
- Measure and mark the position for the hanging rod. Drill the hole for the angle nut on the ceiling and fix the hanging rod.
- The installation template is extended according to temperature and humidity. Check on dimensions in use.
- The dimensions of the installation template are the same as those of the ceiling opening dimensions.
- Before ceiling laminating work is completed, be sure to fit the installation template to the indoor unit.

Note: Be sure to discuss the ceiling drilling work with the installers concerned.



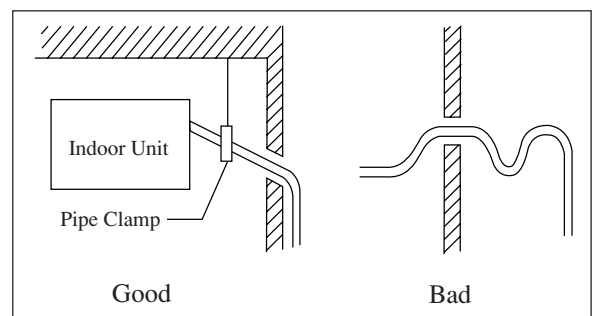
3. Unit Hanging

- Confirm the pitch of the hanging rod.
- Hold the unit and hang it on the hanging rod with the nut and washer.
- Adjust the unit height to 35.0mm between the indoor unit bottom surface and the ceiling surface.
- Confirm with a level gauge that the unit is installed horizontally and tighten the nut and bolt to prevent unit failing and vibration.
- Open the ceiling board along the outer edge of the paper installation template.



4. Drain Pump Work

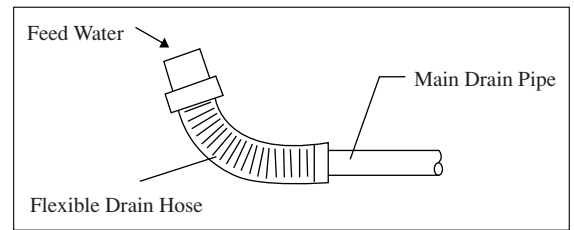
- Drain pipe must be in downward gradient for smooth drainage.
- Avoid installing the drain pipe in up and down slope to prevent reversed water flow.
- During the drain pipe connection, be careful not to exert extra force on the drain connector at indoor unit.
- The outside diameter of the drain connection at the flexible drain hose is 20mm.
- Be sure to execute heat insulation (polyethylene foam with thickness more than 8.0mm) on the drain piping to avoid the condensed water dripping inside the room.



5. Drain Test

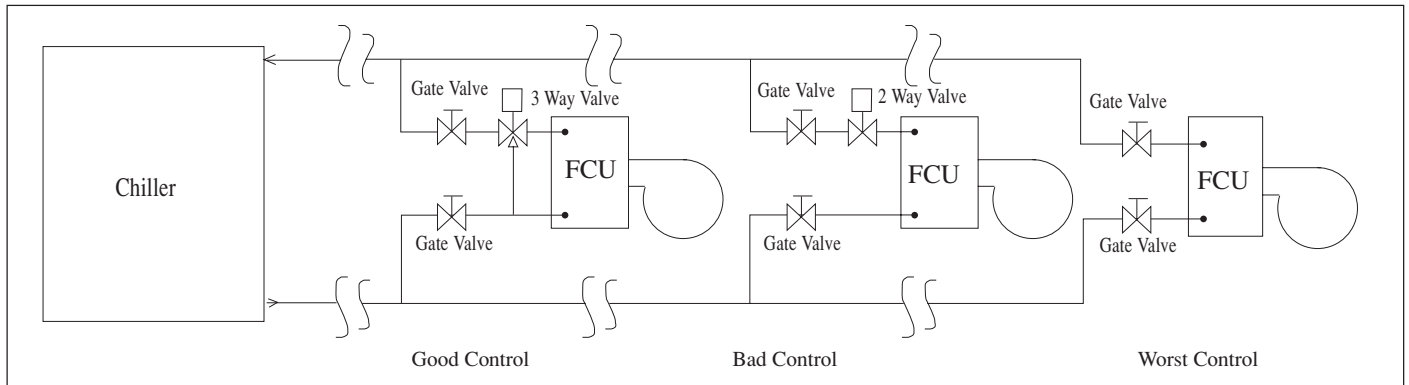
- Connect the main drain pipe to the flexible drain.
- Feed water from flexible drain hose to check the piping for leakage.
- When the test is completed, connect the flexible drain hose to the drain connector on the indoor unit.

Note: This Indoor Unit uses a drain pump for condensed water drainage. Install the unit horizontally to prevent water leakage or condensation around the air outlet.



6. Water Piping Connection

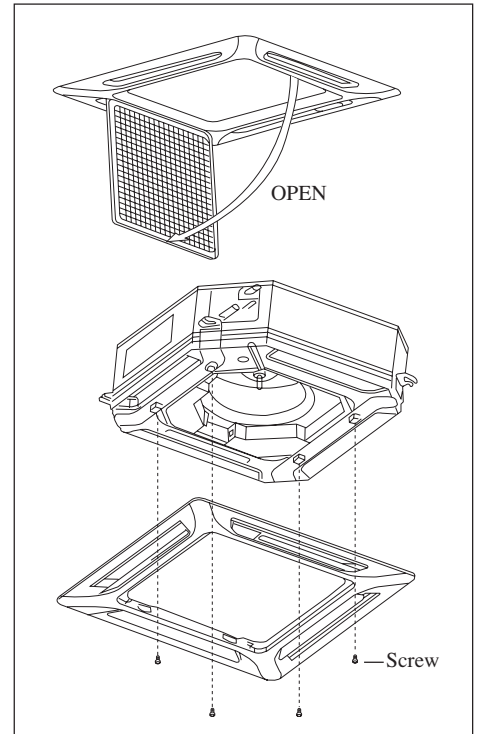
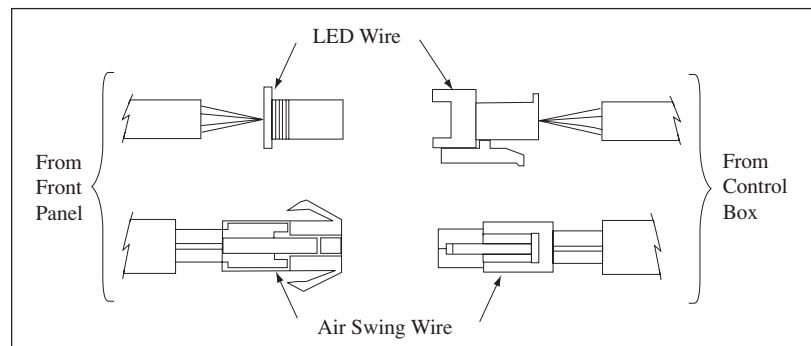
- The indoor unit is equipped with water outlet and inlet connection. There is an air-vent that is fitted along with the connection for air purging.
- 3 ways valve is required for cycling off or bypass the chilled water.
- Black steel pipe, polyethrene pipe and copper tube are recommended in the field installation. All types of piping and connection must be insulated with polyethrene (ARMAFLEX type or equivalent) to avoid condensation.
- Do not use contaminated or damaged pipe and fitting for installation.
- Some main fitting components are needed in the system to enhance the capacity and ease the service, such as gate valve, balancing valve, 2 ways or 3 ways valve, filter, strainer and etc.



7. Panel Installation

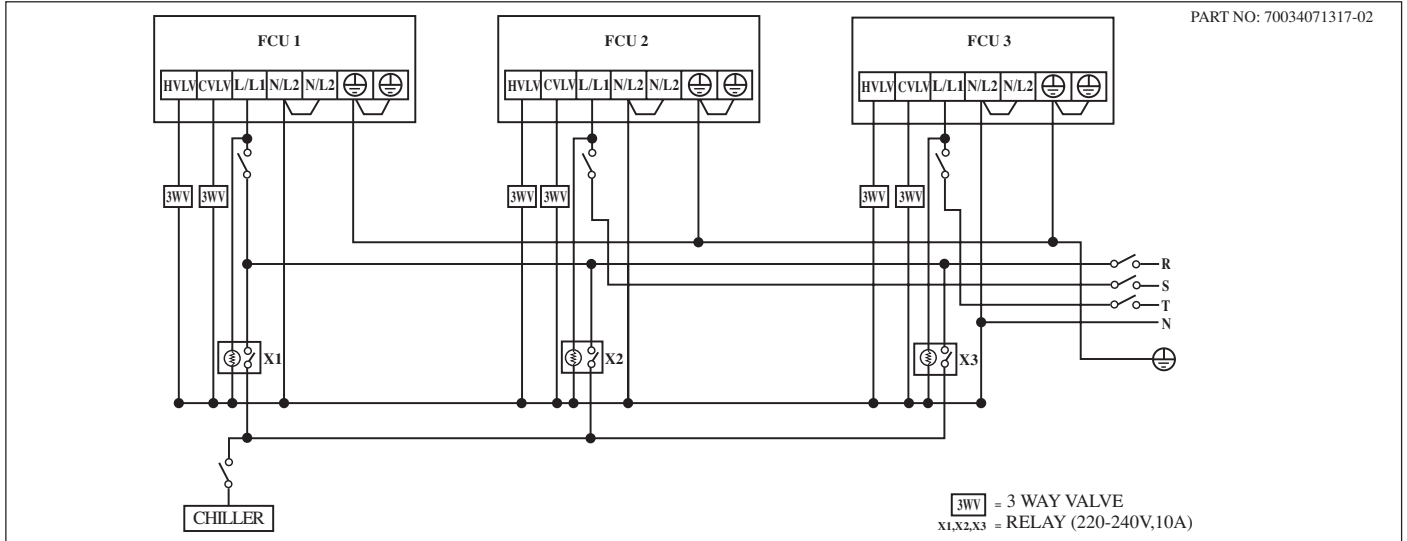
- Be sure to remove the installation template before installing the front panel.
- Open the air intake grille by pulling back the catchers and removing it together with filter from panel.
- Install the front frame panel onto the indoor unit by 4 screws and tighten it completely to prevent cool air leakage.
- Connect the LED wire and air swing wire to the indoor unit.

Note: Install the front panel firmly to prevent cool air leakage which will cause condensation and water dripping

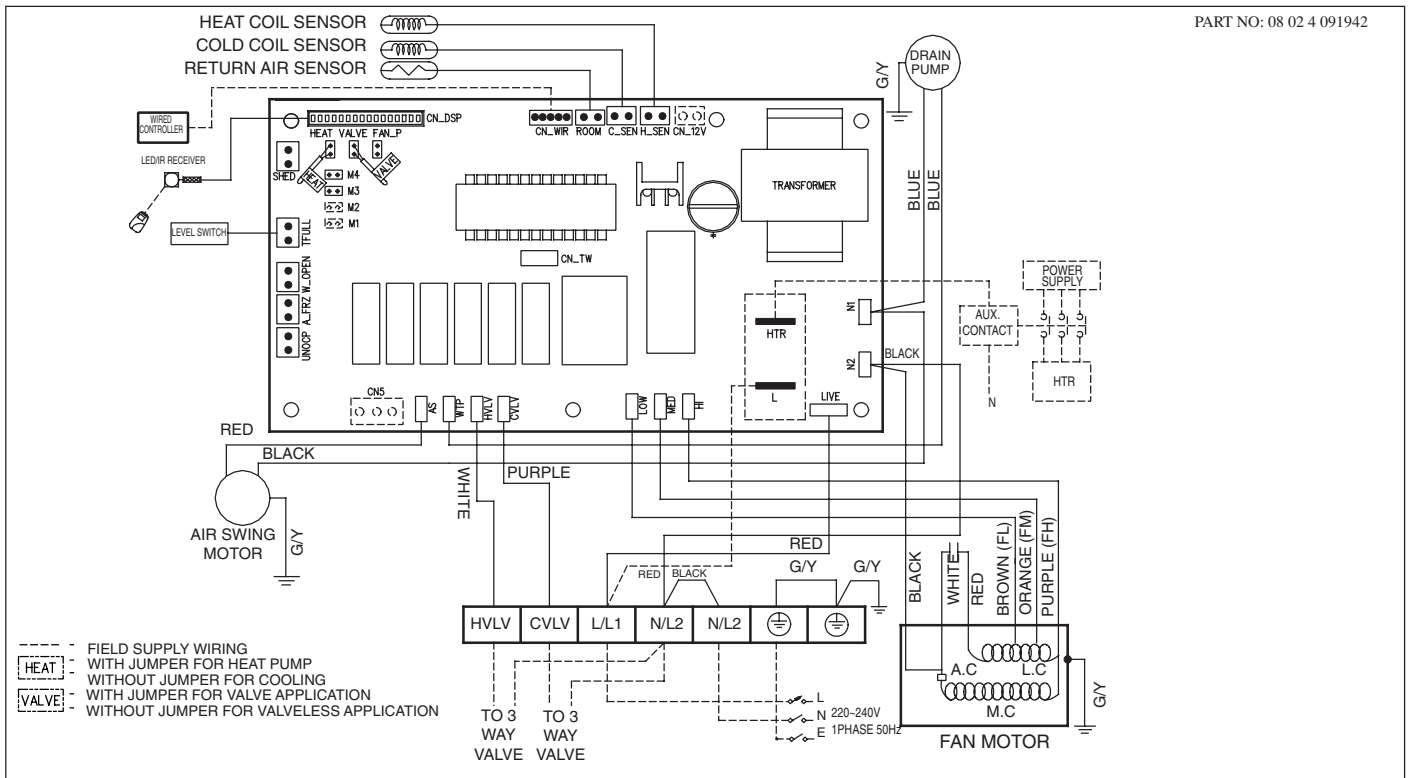


ELECTRICAL WIRING CONNECTION

This is a proposed wiring connection. It may change subject to the chiller unit and must comply with local and national code and regulations.



Model : FWC02AAFNMV1 / FWC03AAFNMV1 / FWC04AAFNMV1 / FWC05AAFNMV1 / FWC06AAFNMV1 (W2.0-4P)



Note: Unit comes in standard heatpump and for valve application.

IMPORTANT: * These values are for information only. They should be checked and selected to comply with local and/or national codes and regulations. They are also subject to the type of installation and size of conductors.
 ** The appropriate voltage range should be checked with label data on the unit.
 A main switch or other means for disconnection, having a contact separation in all poles, must be incorporated in the fixed wiring in accordance with relevant local and national legislation.

Model	FWC02AAFNMV1	FWC03AAFNMV1	FWC04AAFNMV1	FWC05AAFNMV1	FWC06AAFNMV1
Voltage range**	220-240V/1Ph/50Hz + ⊕				
Recommended fuse* (A)	2	2	2	2	2
Power supply cable size* (mm ²)	1.5	1.5	1.5	1.5	1.5
Number of conductors	3	3	3	3	3

- All wires must be firmly connected.
- All wires must not touch the water piping, or any moving parts of the fan motor.
- The power supply cord must be equivalent to H05VV-F (60227 IEC 52 or 60227 IEC 53) which is the minimum requirement, and to be used in protective tube.

OPERATING RANGE

Operating Limits:

Thermal carrier : Water

Water temperature : 5 ~65°C

Maximum water pressure : 16 bar

Air temperature : (as below)

Cooling Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	11.0 / 51.8
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4
Minimum outdoor temperature	16.0 / 60.8	-
Maximum outdoor temperature	46.0 / 114.8	-

Heating Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	-
Maximum indoor temperature	30.0 / 86.0	-
Minimum outdoor temperature	-5.0 / 23.0	-6.0 / 21.2
Maximum outdoor temperature	24.0 / 75.2	18.0 / 64.4

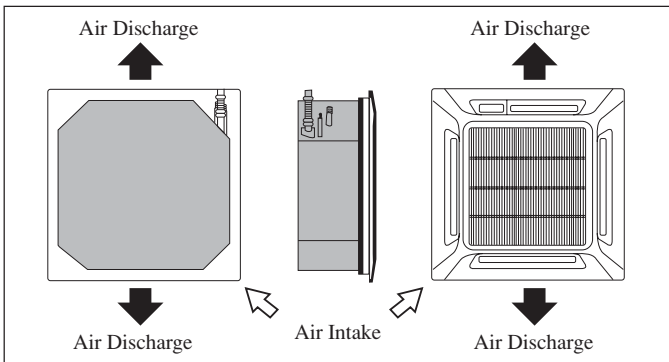
Ts: Dry bulb temperature.

Th: Wet bulb temperature.

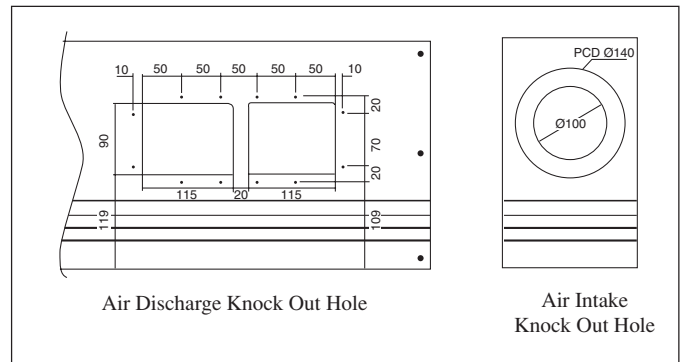
ACCESSORY PARTS

- The indoor unit is provided with air discharge and air intake “knock-out” hole for duct connection. However the connection of the short duct for air discharge is possible on one side only.
- The use of short duct for air discharge will improve airflow distribution if there is an obstruction (such as a lighting fixture) or in a long, narrow room or an L-shaped room. It is also use for air conditioning of two rooms simultaneously.

Possible Direction For Air Discharge And Air Intake



Possible Opening Dimension For Duct Connection



Note:

- Avoid using the short duct on which the air discharge grille can be completely closed, to prevent evaporator freezing.
- In order to prevent condensation forming, be sure that there is sufficient thermal insulation and no leakage of cool air when installing the short duct.
- Keep the introduction of fresh air intake within 20% of total air flow. Also provide a chamber and use a booster fan.

Sealing Material

- It is possible to seal one of the four air discharge outlet. (Sealing two or more air discharge outlet could cause a malfunction.)
- Remove the front panel and insert the sealing material into the air discharge outlet on the indoor unit to seal the air outlet.
- The sealing material is the same length as the longer air discharge outlet. If it is desired to seal the shorter air discharge outlet, cut the sealing material to shorten it.
- Push the sealing material in about 10mm beyond the bottom surface of the indoor unit so that it does not touch the air louver.
- Be sure not to push the sealing material in any further than about 10mm.

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.)

INDICATOR LIGHTS

Remote Control

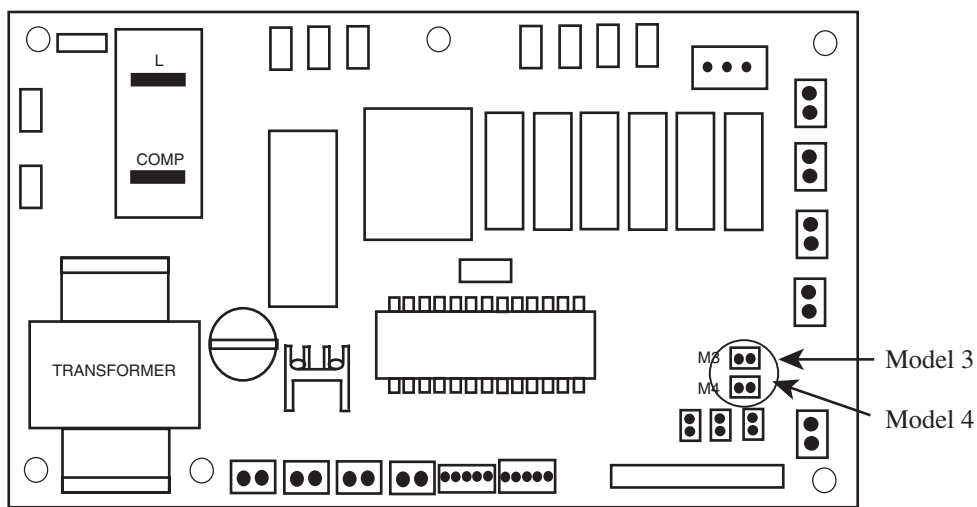
When there is infrared remote control operating signal, the signal receiver on indoor unit will made a <beep> for signal acceptance confirmation.

Error Description	Cool LED	Error Indication
Room sensor error	1 blink	E1
Pipe water sensor error	2 blinks	E2
Water pump error	6 blinks	E6
Pipe water temperature fault	5 blinks	E5
*Window open activated	3 blinks	-
*Antifreeze mode activated	7 blinks	-
*Load shedding activated	8 blinks	-

*Only applicable for 4-pipe system

FAN COIL UNIT CONTROLLER BOARD SETTING

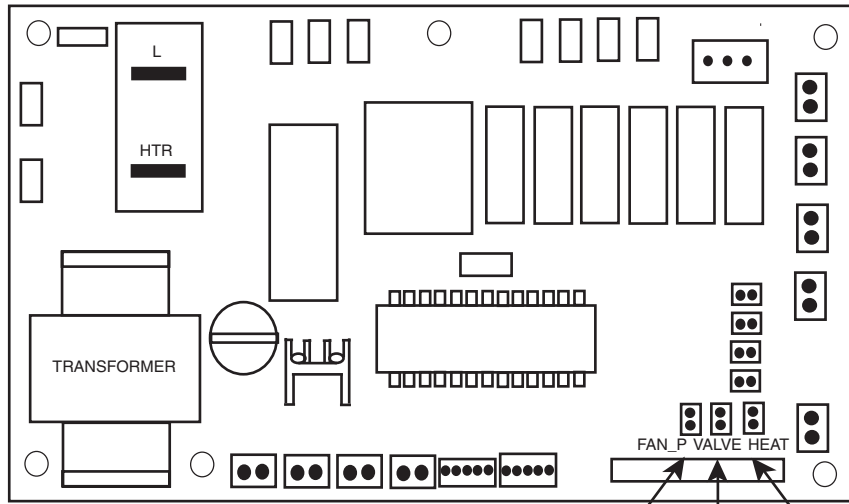
A) MODEL SELECTION



The standard controller board (W 2.0) comes with a default setting for model selection :- Model 4. Please select the model accordingly by using the jumper.

System	Model	Function
4 Pipe System	M3 - Model 3	Cooling Only with Boiler
	M4 - Model 4	Cooling or Heating with Boiler

B) VALVE, HEAT AND FAN PRIORITY SELECTION

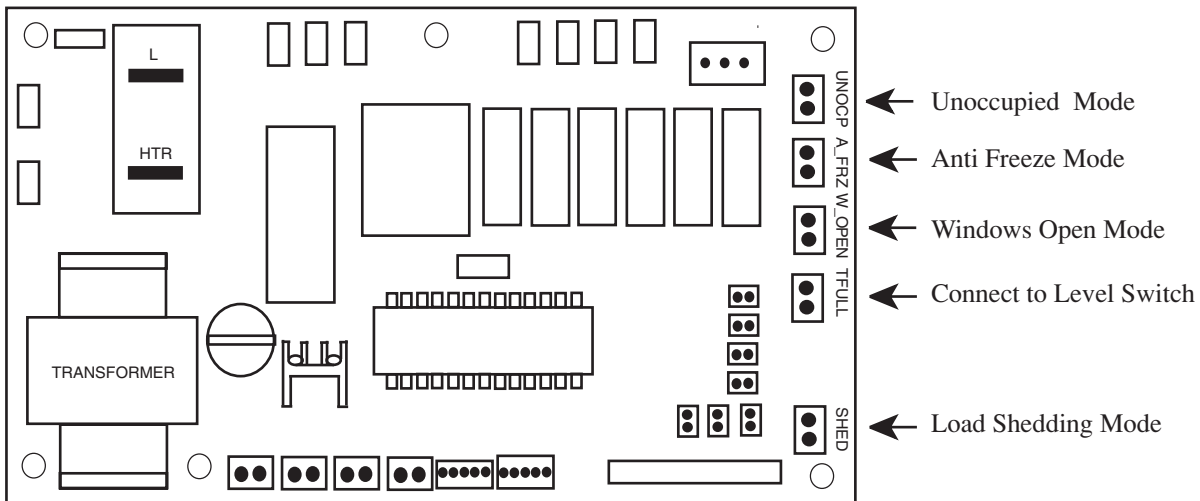


Fan Priority Jumper Valve Jumper Heat Jumper

Jumper	With Jumper (Default)	Without Jumper
Fan Priority Jumper	User set speed or lower fan if auto mode is selected	Fan Stop when thermostat cut off
Heat Jumper	For Heat pump	For Cooling only
Valve Jumper	For valve control	For valveless control

C) OTHERS

The controller board comes with other option.



i) Unoccupied Mode

If the dry contact is closed, the Unoccupied mode is activated and vice versa. When Timer On is active, system goes back to Occupied mode.

The dry contact connection points can be connected in parallel with other fan coil unit (FCU) boards. If the dry contact is closed, Unoccupied mode will be activated on all the fan coil units which are connected in parallel as shown in figure above.

ii) Anti Freeze Mode

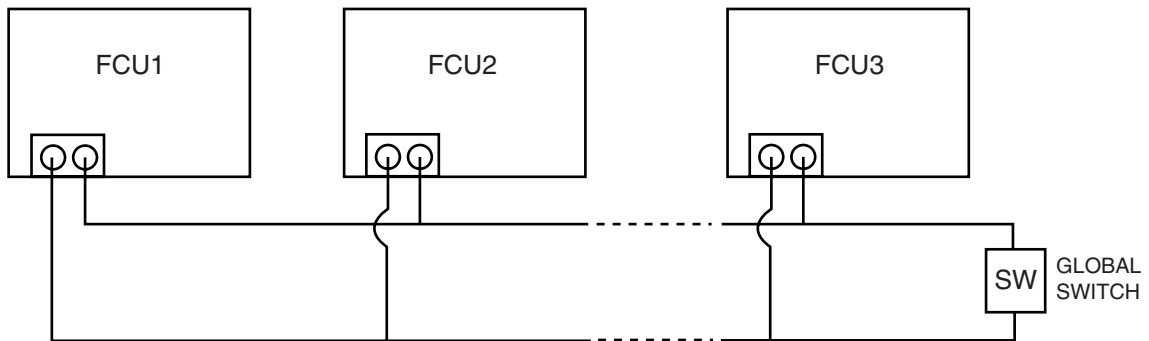
Anti Freeze operation has the highest priority among all unit operation. Anti Freeze operation will be activated only if dry contact is closed and vice versa.

iii) Window Open Mode

The dry contact connection points can be connected in parallel with other fan coil unit (FCU) boards. If the dry contact is closed, Window open mode will be activated on all the fan coil units which are connected in parallel as shown in figure below.

iv) Load Shedding

The dry contact connection points can be connected in parallel with other fan coil unit (FCU) boards. If the dry contact is closed, load shedding mode will be activated on all the fan coil units which are connected in parallel as shown in figure below.



Global Unoccupied, Global Window Open and Global Load Shedding operation could also be activated via the network communication bus line by the master controller with or without the above connection. (Depends on availability for this feature.)

Note:

- i) Auto Fan Mode is only applicable in model 3 only . (Cooling only with Boiler).
- ii) Fan mode is not available in valveless control.
- iii) Wired handset has an indoor room sensor. Avoid locating the wired handset at isolated places where room temperature reading will be inaccurate.

OVERALL CHECKING

- Ensure the following, in particular:-
 1. The unit is mounted solidly and rigid in position.
 2. Piping and connections are leak proof.
 3. Proper wiring has been done.
- Drainage check – pour some water into left side of drain pan (drainage is at the right side of the unit).

Note:

- The installation guide above covers only the fan coil unit. For installation of outdoor (mini chiller etc) please refer to the installation guide for such unit.
- The installation of fan coil unit may vary according to the type of outdoor unit.
- Installation must be done by qualified personnel who is familiar with this type of product.

SERVICE AND MAINTENANCE

Service parts	Maintenance procedures	Period
Indoor air filter	<ol style="list-style-type: none"> 1. Remove any dust adhered on the filter by using a vacuum cleaner or wash in lukewarm water (below 40°C) with neutral cleaning detergent. 2. Rinse the filter well and dry before placing it back into the unit. 3. Do not use gasoline, volatile substances or chemical to clean the filter. 	At least once every 2 weeks. More frequently if necessary.
Indoor unit	<ol style="list-style-type: none"> 1. Clean any dirt or dust on the grille or panel by wiping it off with soft cloth soaked in lukewarm water (below 40°C) with neutral detergent solution. 2. Do not use gasoline, volatile substances or chemical to clean the indoor unit. 	At least once every 2 weeks. More frequently if necessary.

TROUBLESHOOTING

When 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 start operate after 3 minutes from starting the air conditioner unit.	- Protection against frequent starting. Wait for 3 to 4 minutes for the compressor to start operating.
2. The air conditioner unit does not operate.	<ul style="list-style-type: none"> - Power failure, or the fuse need 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.	<ul style="list-style-type: none"> - 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 odor.	- Odors may be caused by cigarettes, smoke particles, perfume etc. which might have adhered onto the coil.
5. Condensation on the front air grille of the indoor unit.	<ul style="list-style-type: none"> - 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 unit and call dealer.

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

MEMO

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