INSTALLATION AND MAINTENANCE MANUAL

“Original Language”

PAW-FC Fan Coils

Wall mounted

Read through the Installation Instructions before you proceed with the installation. In particular, you will need to read under the “ IMPORTANT ! ” section at the top of the page.

File name. **IMM_PAW-FC_WMD_EN_04.21**

April 2021

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IMPORTANT!

Please Read Before Starting

This equipment must be installed by the sales dealer or installer. This information is provided for use only by authorized persons.

For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- This unit shall be installed in accordance with National Wiring Regulations.
- This unit complies with the requirements of the following EU legislation: 2014/30/EU (EMC), 2006/42/EC (Machinery), 2011/65/EU (RoHS), 2014/35/UE (Low Voltage Directive) and all applicable Standards (see EC Declaration for details).
- Pay close attention to all warning and caution notices given in this manual.

WARNING This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

CAUTION This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

If Necessary, Get Help

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

Notice

The English text is the 'Original language'.
The content of this document is intended for use by the manufacturer professional personnel only.

SPECIAL PRECAUTIONS

WARNING When Wiring

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully see the wiring diagram provided with the IMM Manual when wiring. Improper connections and inadequate grounding can cause accidental injury or death.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.
- ELCB must be incorporated in the fixed wiring.
- Circuit breaker must be incorporated in the fixed wiring in accordance with the wiring regulations.

When Transporting

- It may need two or more people to carry out the installation work.
- Care should be taken when lifting or moving the unit to reduce the chance of serious injury. Do not attempt to move the equipment without the correct means of lifting.

When Installing…

Select an installation location which is rigid and strong enough to support or hold the unit, and select a location for easy maintenance.

When Servicing

- Turn the power OFF at the main power box (mains), wait at least 10 minutes until it is discharged, then open the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit.

WARNING

- This product must not be modified or disassembled under any circumstances. Modified or disassembled unit may cause fire, electric shock or injury.
- Users must not clean inside the unit. Engage authorized dealer or specialist for cleaning.
- In case of malfunction of this unit, please contact to the sales dealer or service dealer for a repair and disposal.
- Any operation carried out by unauthorized personnel is prohibited and can cause serious damage to people and things.

Others

When disposing of the product, comply with national Regulations.

CAUTION

- Do not touch the air inlet or the sharp aluminium fins of the coil of the unit. You may get injured.
- Do not sit or step on the unit, you may fall down accidentally.
- Do not stick any object into the FAN CASE. You may be injured and the unit may be damaged.

POWER SUPPLY MUST BE SWITCHED OFF BEFORE STARTING WORK IN THE ELECTRIC BOX

1. General recommendations

The purpose of this Manual is to provide users with instructions for installing, commissioning, using the units. It contains the description of all the maintenance operations guaranteeing the unit's long life and reliability. Only the services of a qualified technician can guarantee the unit's safe operation over a long service life. Please read the following safety precautions very carefully before working on the unit.

1.1 Safety directions

Follow the safety rules in force when you are working on your fan coil. This appliance has not been designed for use by persons (including children) with reduced physical, sensorial or mental faculties or by persons without any experience or knowledge of cooling and heating systems, unless they act under the safety and supervision of a responsible person or have received prior training concerning the use of the appliance.

Any wiring produced on site must comply with the corresponding national electrical regulations.

Make sure that the power supply and its frequency are adapted to the required electric current of operation, taking into account specific conditions of the location and the current required for any other appliance connected to the same circuit. The unit must be EARTHED to avoid any risks caused by insulation defects.

It is forbidden to start any work on the electrical components if water or high humidity is present on the installation site.

1.2 Warning

Cut-off power supply before starting to work on the unit.

When making the hydraulic connections, ensure that no impurities are introduced into the pipe work.

The fan-coil units may contain a small amount of oil incompatible with plastic polyethylene piping (PER/HTA/PVC). The coil should be rinsed out before use to avoid any problem.

It is the installer's responsibility to contact their pipe supplier and take into account the general instructions for the use of plastic pipes.

The manufacturer declines any responsibility and the warranty becomes void if these instructions are not respected.

If you meet a problem, please call the Technical Department for your area. If possible, assemble the compulsory or optional accessories before placing the appliance on its final location (see instructions provided with each accessory). In order to become fully familiar with the appliance, we suggest to read also our Technical Data Manual (TDM). The information contained in this manual are subject to modification without prior notice.

2. Inspection and storage

At the time of receiving the equipment carefully cross check all the elements against the shipping documents in order to ensure that all the crates and boxes have been received. Inspect all the units for any visible or hidden damage.

In the event of shipping damage, write precise details of the damage on the shipper's delivery note and send immediately a registered letter to the shipper within 48 hours, clearly stating the damage caused. Forward a copy of this letter to the manufacturer or his representative.

Never store or transport the unit upside down. It must be stored indoors, completely protected from rain, snow etc. The unit must not be damaged by changes in the weather (high and low temperatures). Excessively high temperatures (above 60°C) can harm certain plastic materials and cause permanent damage. Moreover, the performance of certain electrical or electronic components can be impaired.

Environmental conditions must be within the following limits:
- Minimum ambient temperature : -20°C
- Maximum ambient temperature : +55°C
- Maximum R.H. : 95% not condensing

The equipment must be stored in environments with a temperature within the limits indicated above. High humidity atmosphere may damage electrical components.

2.1 Disposal information

Units must be disposed of in accordance with local regulations.

Information for Users on Collection and Disposal of Old Equipment and Used Batteries

These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste. For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2012/19/EU of 4 July 2012 on waste electrical and electronic equipment (WEEE).

By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling. For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items. Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union
If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

[Information on Disposal in other Countries outside the European Union]
These symbols are only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.

Note for the battery symbol (bottom two symbol examples):
This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

3. Warranty

The appliances are delivered fully assembled, factory tested and ready to operate.
Any modification to the units without the manufacturer's prior approval, shall automatically render the warranty null and void.
The following conditions must be respected in order to maintain the validity of the warranty:

- Commissioning shall be performed by specialised technicians from technical services approved by the manufacturer.
- Maintenance shall be performed by technicians trained for this purpose.
- Only Original Equipment spare parts shall be used.
- All the operations listed in the present manual shall be performed within the required time limits.

THE WARRANTY SHALL BE NULL AND VOID IN THE EVENT OF NON-COMPLIANCE WITH ANY OF THE ABOVE CONDITIONS.

4. Presentation

The range of **PAW-FC** Fan Coil includes the **wall-mounted** (AC) configuration which is available in 4 sizes.
The cooling capacity is from 1,0 to 3,9 kW and the heating capacity is from 1,4 to 4,1 kW.
The version available is reversible 2-pipes, with AC fan.

Main features and accessories:

- 2 way or 3 way valve ON/OFF
- 3-speed AC fan motor
- Silent unit for optimum customer comfort
- Aesthetic design suitable for residential and hotel applications
- Compatible with IR controller (supplied with IR versions)
- Coil with hydrophilic fins to improve the condensate flow

		
Optional controller. **Wired remote controller.** PAW-FC-903TC	**Optional controller.** **Advanced wired remote controller.** PAW-FC-RC1	**Infrared remote.** **Supplied with IR versions.** IR Controller

Casing
Made from a plastic structure with high mechanical properties and resistance to aging.

Coil
Consists of copper tubes and louvered aluminium fins with hydrophilic coating for better condensate drainage and increased longevity.
Hydraulic fittings are straight, of 12 mm diameter, and provided with an extension equipped with a female 1/2" gas type connector.

Filter
Electrostatic and anti-bacterial synthetic type air filter accessible after opening the front panel.

Ventilation
3-speed motor equipped with internal thermal protection, with high efficiency tangential wheel ensuring quiet operation.

Power supply
Power supply : 230 V / 1 Phase / 50 Hz + Earth.

Condensate drain pan
Plastic with Ø16 mm connection.

Installation
A drilling template is provided.

4.1 Operating limits

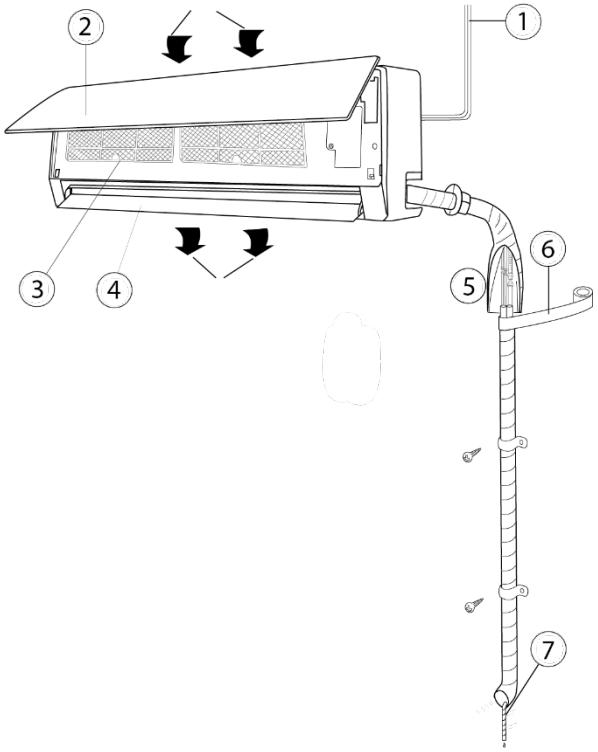
Water side

Minimum entering water temperature:	+5°C
Maximum entering water temperature:	+60°C
Maximum operating hydraulic pressure:	15 bar

Temperatures

Min. operating temperature (room/return/around the unit):	+6°C / 15% R.H.
Max. operating temperature (room/return/around the unit):	+40°C / 70% R.H.

4.2 Unit description



1. Power cable
2. Front panel
3. Filter
4. Guide louver
5. Wall pipe
6. Bind type
7. Drain pipe

4.3 Technical data

2-pipe			PAW-FC2A-K007 PAW-FC2A-K007IR	PAW-FC2A-K009 PAW-FC2A-K009IR	PAW-FC2A-K018 PAW-FC2A-K018IR	PAW-FC2A-K022 PAW-FC2A-K022IR
Total cooling capacity (1)	Low/Med/High	kW	1,0 / 1,3 / 1,7	1,6 / 1,7 / 2,4	2,8 / 3,0 / 3,5	2,9 / 3,1 / 3,9
Sensible cooling capacity (1)	Low/Med/High	kW	0,7 / 1,0 / 1,2	1,2 / 1,3 / 1,9	2,1 / 2,3 / 2,7	2,3 / 2,5 / 3,1
Water flow	Low/Med/High	l/h	172 / 231 / 287	270 / 291 / 418	479 / 508 / 609	505 / 535 / 669
Water pressure drop (1)	Low/Med/High	kPa	18,6 / 24,9 / 30,9	18,5 / 27,0 / 40,0	34,6 / 41,3 / 55,6	29,0 / 33,7 / 45,2
Heating capacity (2)	Low/Med/High	kW	1,4 / 1,7 / 2,0	1,6 / 2,0 / 2,7	2,6 / 3,2 / 4,0	3,2 / 3,7 / 4,4
Sound levels						
Sound power	Low/Med/High	dB(A)	45 / 49 / 51	47 / 52 / 57	49 / 53 / 56	53 / 57 / 63
Sound pressure (3)	Low/Med/High	dB(A)	30 / 33 / 35	32 / 36 / 40	39 / 41 / 43	39 / 43 / 48
Fan						
Number	-	-	1	1	1	1
Air flow	Low/Med/High		282 / 321 / 360	367 / 413 / 551	532 / 592 / 680	617 / 709 / 850
Filter	-	-	G1	G1	G1	G1
Electrical data						
Power supply	Voltage	V	230	230	230	230
	Phase	-	Single phase	Single phase	Single phase	Single phase
	Frequency	Hz	50	50	50	50
Fuse rating	-	A	3	3	3	3
Power consumption	Low/Med/High	W	39 / 42 / 62	44 / 47 / 59	47 / 50 / 55	51 / 55 / 70
Water connections						
Type	-	-	Female gas threaded	Female gas threaded	Female gas threaded	Female gas threaded
Water connections	-	Inch	½	½	½	½
Dimensions and weight						
Dimension	H x W x D	mm	275 x 180 x 845	275 x 180 x 845	298 x 200 x 940	298 x 200 x 940
Weight		kg	11	11	13	13

1) According to Eurovent standard. Air: 27°C DB / 19°C WB. Water in/out: 7°C / 12°C.
2) According to Eurovent standard. Air: 20°C. Water in/out: 45°C / 40°C.
3) Sound pressure considering a local of 100 m³ a reverberation time of 0,5 seconds and a distance of 1 m.

5. Installation

CAUTION

- The unit installation work must be done by qualified personnel according to the local rules and this manual.
- The unit should not be installed in a bathroom, a laundry, a sauna or a swimming-pool.

During the installation:

- Take care to avoid any rough handling or impacts when unloading and moving the appliance.
- Before hoisting into position, test lift to insure stability and balance. Avoid twisting or uneven lifting of the units.
- The units shall be carefully inspected before unit installation to make sure that no handling damage has occurred.
- All these sections have been inspected before leaving the factory. It is therefore important to insure that no bolts, screws or other fixing system are loosened or missing before the commissioning. During the handling of the machine it is mandatory to provide all the devices necessary to guarantee personal safety.

5.1 Unit location – basic requirements

Installation in the following places may cause malfunction. If it is unavoidable, please contact the technical centre.

- Place where strong heat sources, vapours, flammable gas or volatile objects are emitted.
- Place where high-frequency waves are generated by radio equipment, welders and medical equipment.
- Place where a lot of salinities such as seaside exists.
- Place where the oil (machine oil) is contained in the air.
- Place where a sulphured gas such as the hot spring zones is generated.
- Other place with special application.

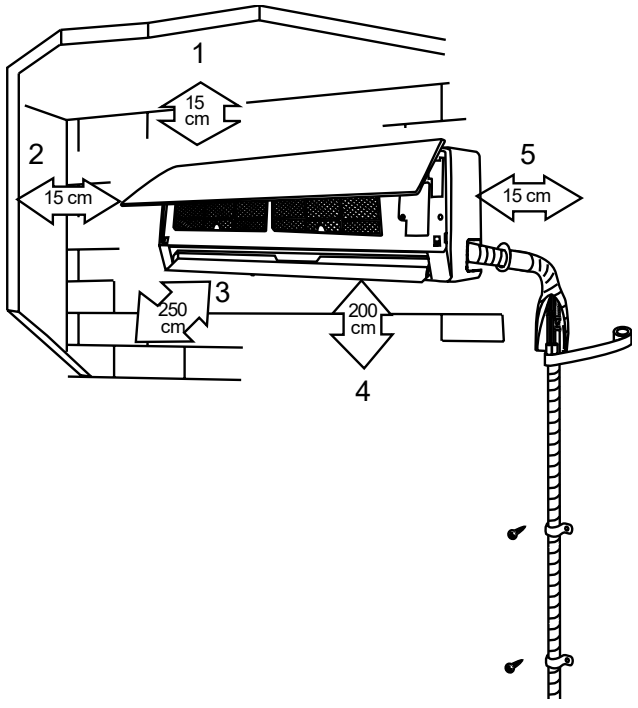
5.2 Unit location – position selection

- The air inlet and outlet vent should be far from any obstruction, make sure that the air can be blown through the whole room.
- Select a position where the condensing water can be drained easily.
- Select a location where children cannot reach the unit.
- Select a place strong enough to withstand the full weight and vibration of the unit (will not increase the noise).
- Be sure to leave enough space to allow access for maintenance. The height of the installed location should be 200 cmor more from the floor.
- Select a place about 1m or more away from TV set or any other electric appliances.
- Select a place where the filter can be easily taken out.
- Make sure that the unit installation is according to installation dimension diagram requirements.
- Do not use the unit in the immediate surroundings of a laundry, bath, shower or swimming pool.

5.3 Clearance

The figure on the right shows the minimum distances recommended for the correct operation of the unit:

1. Space to the ceiling
2. Space to the wall
3. Air outlet side
4. Space to the floor
5. Space to the wall

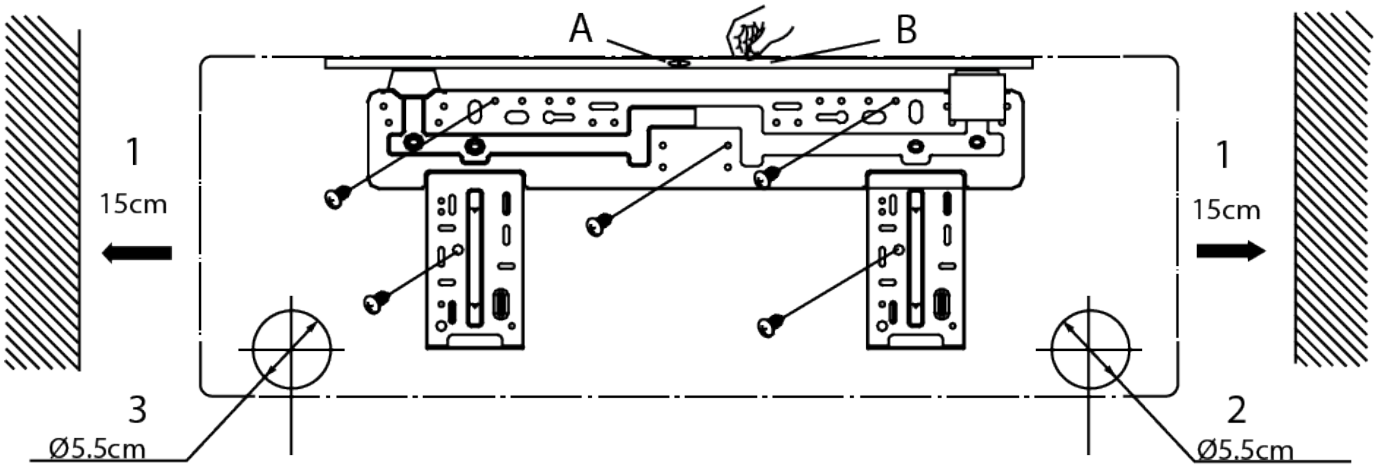


5.4 Rear panel installation

CAUTION: Always mount the rear panel horizontally.

Due to potential for two-way outlet water drainage design, the outlet of water tray should be adjusted slightly down during installation, by is taking the outlet of the water tray as the centre of a circle, then including an angle between the coil and level should be 0 or more, that is good for condensing water drainage.

Fix the rear panel on the wall with screws. Be sure that the rear panel has been fixed firmly enough to withstand the weight of an adult of 60kg, furthermore, the weight should be evenly shared by each screw.

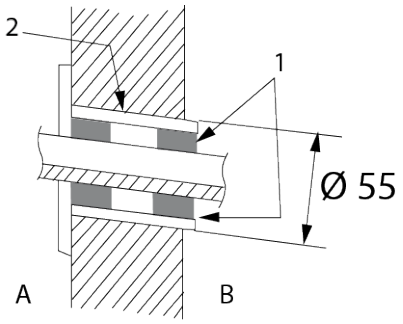


A – Mark on the middle of it
B – Block level

1 – Space to the wall (min.)
2 – Right (Rear piping hole)
3 – Left (Rear piping hole)

5.5 Install the piping hole

- Make the piping hole (Ø55) in the wall with a slight downward slant to the outdoor side.
- Insert the piping-hole sleeve into the hole to prevent the connection piping from being damaged when passing through the hole.



A – Indoor side
B – Outdoor side

1 – Seal pad
2 – Wall pipe

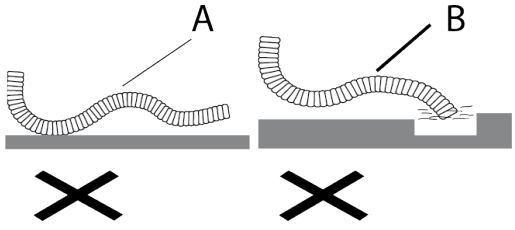
6. Hydraulic connections

6.1 Install the water drain pipe

CAUTION: For good draining, the drain hose should be placed at a downward slant.

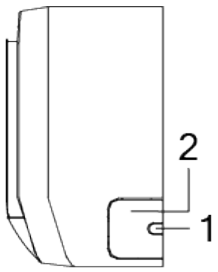
A. Do not wrench or bend the drain hose or immerse the pipe end in water.

B. Wrap the drain pipe with insulating material when the drainage hose passed through an indoor location to prevent condensation.



6.2 Piping position

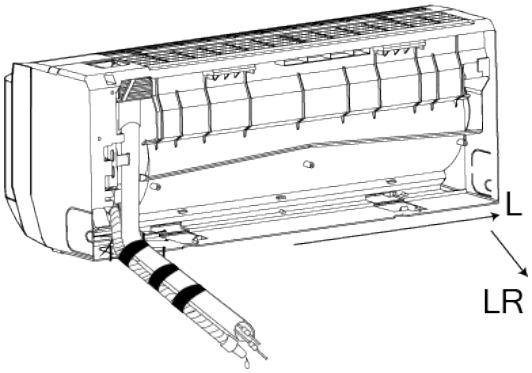
CAUTION: THE PIPING CAN BE LEAD OUT FROM LEFT SIDE OR REAR LEFT.

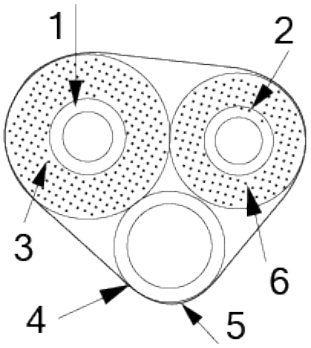


When routing the piping and wiring from the left side of the unit, removal of the chassis cut-outs is necessary.

1. Remove cut-out **1** when routing the wiring only;
2. Remove both cut-out **1** and **2** when routing both the wiring and piping.

Take out the piping from body case, wrap the piping electric wire, water pipe with tape and pull them through the piping hole.





L - Left

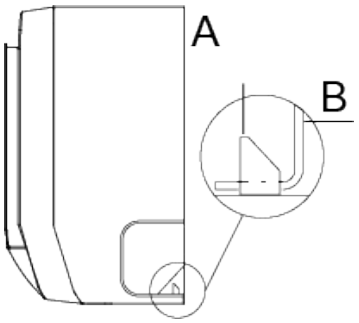
LR – Left rear

1. Inlet water side pipe
2. Outlet water side pipe
3. Inlet side piping insulation
4. Final wrapping
5. Water drainage pipe
6. Outlet side piping insulation

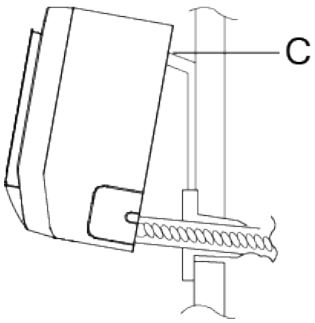
6.3 Mounting slots

Hinge the mounting slots of the indoor unit on the upper tabs of the rear panel and check if it is firm enough.

Please note: the height of the installed location should be 2,5 m or more from the floor.



A – Fixing hook
B – Mounting plate

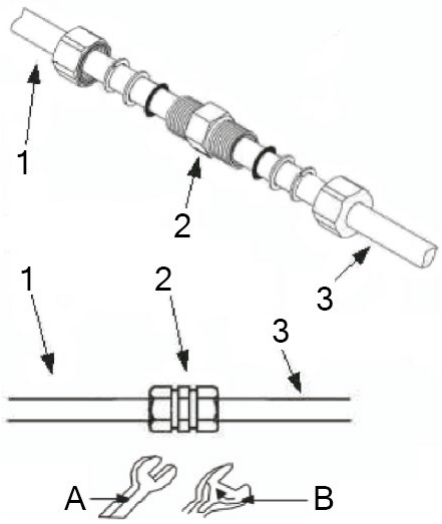


C – Mounting board

6.4 Install the connection pipe

- Align the centre of the piping flare with the relevant valve.
- Screw in the flare nut by hand and then tighten the nut with spanner and torque wrench:

HEX NUT DIAMETER	TIGHTENING TORQUE
6.00	15 – 20 Nm
9.52	31 – 35 Nm
12.00	50 – 55 Nm
16.00	60 – 65 Nm
19.00	70 – 75 Nm

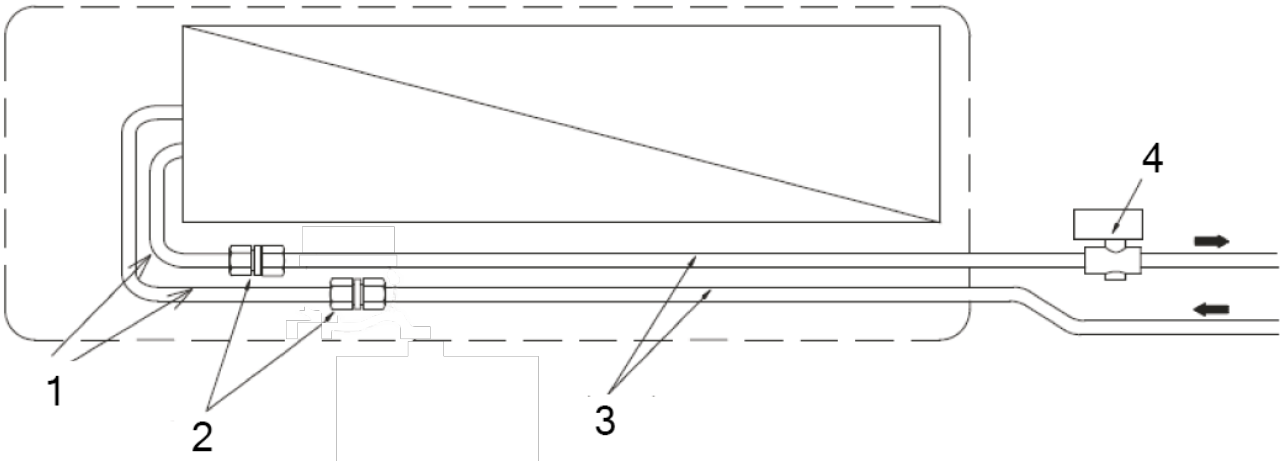


1. Indoor unit pipe
2. Connection nut
3. Pipe by Contractor

A. Spanner
B. Torque wrench

Firstly connect the connection pipe to the unit, then to the outside unit; pay attention to the piping bends, do not damage the connection pipe; Do not overtighten the nut joint, otherwise leakage may occur.

6.5 External water pipe connection sketch



1. Water inlet/outlet pipe ø 12 mm
2. Connection nut provided by factory
3. Connection pipe provided by contractor / installer
4. Two-way valve provide by contractor / installer

6.6 Motorized valve

All units must be equipped with a motorized valve for the following main reasons:

1. Water flood risk for some units without motorized valves in the event that they stop under the cooling conditions.
2. Under the cooling and heating conditions, energy loss may happen to the chilled water and hot water.

Note:

- The pipe must be wrapped by heat insulation material to prevent condensing water drips.
- It is prohibited to bind directly the water valve wire and sponge up with the copper tube, as there is a probability of short circuit or even electric leakage. The right way is letting the water valve wire go through the pipe sleeve and then binding the sponge and pipe sleeve.
- It is prohibited to put the valve core upside down.

7. Electrical connections

WARNING

Before carrying out any work on the equipment, make sure that the electrical power supply is disconnected and that there is no possibility of the unit being started inadvertently.
Non-compliance with the above instructions can lead to injury or death by electrocution.

1. The appliance shall be installed in accordance with national wiring regulations.
2. Power Line Size: 3 × 1,5 mm^2.
3. The wiring and pipe connection for the fan coils should be done only by a qualified professional only!
4. An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.

Should the wiring diagram covered in the instruction manual differ with that adhered to the cover of the electric box, please always give priority to the latter.

When connecting the electric wiring, should the wire length be of insufficient length, please contact the authorized service centre to purchase a suitable replacement. Jointing of the wire is strictly forbidden.

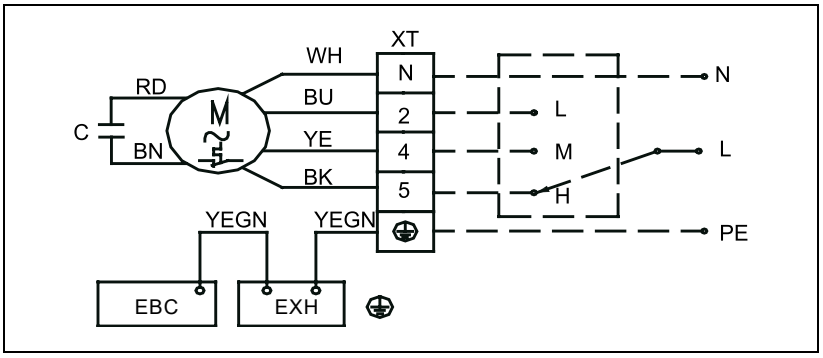
- The electric wiring must be correctly connected, incorrect connection may cause spare parts malfunction.
- Tighten the terminal screw in order to prevent loose connections.
- After tightening the screw, lightly pull the wire to confirm that it is correctly connected.
- Incorrect connection of the earth wiring may result in electric shock.

7.1 Wiring diagram (wall thermostat)

Terminal block (Wall thermostat)

XT – Terminal board
M – Fan motor
C – Capacitor
L, M, H – 3_speed switch
N, L – Power supply 230Vac
PE – Earth connection
EBC – Electric box cover
EXH – Coil exchanger

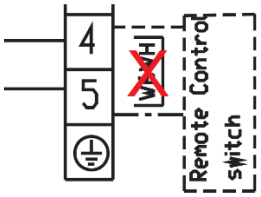
Note:
The power cable (shown dotted), should be prepared by the user.

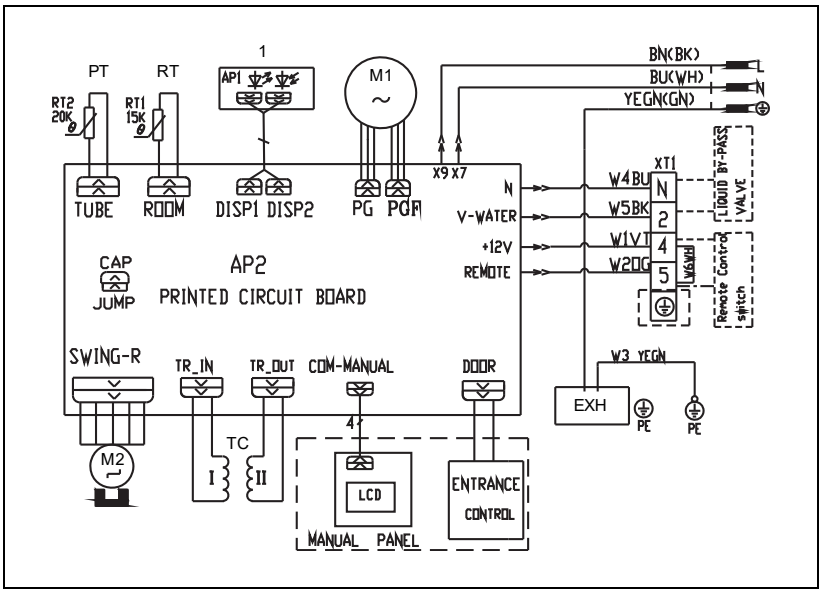


7.2 Wiring diagram (INFRARED – without valve)

PT – Pipe temperature sensor
RT – Room temperature sensor
1 – Display
M1 – Fan motor
M2 – Stepping motor
TC – Transformer
EXH – Coil exchanger

Attention:
If you want to use the Remote Control, please remove the wire of W6 and connect with the wire of remote control switch.





7.3 Safety requirements for electric appliances

1. The electrical power supply of the appliance must correspond to that indicated on the data plate and the power supply cable must be suitably sized..
2. Do not drag the power cable.
3. It should be reliably earthed, and it should be connected to the special earth device, the installation work should be operated by a suitably qualified professional.
4. The min. distance from the unit and any combustible surface is 1,5 m.
5. The appliance shall be installed in accordance with national wiring regulations.
6. An all-pole disconnection switch having a contact separation of at least 3 mm in all poles should be connected in fixed wiring.

Note: Check line , neutral and earth connections.

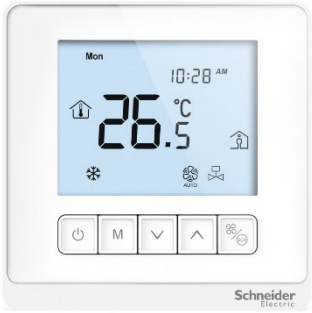
7.4 Ground requirements

1. Air conditioner is a type I electric appliance, thus please do conduct reliable grounding measures.
2. The yellow-green two-colour wire in air conditioner is the earthing conductor and cannot be used for any other purpose.
   It is not allowed to make cuts or fix screws on the structure to connect the grounding. Use the special clamp for the ground connection..
3. The earth resistance should follow the local code.
4. The power source must offer a reliable grounding terminal. The earthing conductor must not be connected to any of the following:
   - Tap water pipe.
   - Gas pipe.
   - Contamination pipe.
   - Other places that professional personnel consider unreliable.
5. The type and rated values of fuse is justified according to the silk print on the fuse or PCB.

8. Optional Wired remote controller: PAW-FC-903TC

The **PAW-FC-903TC** thermostat is optimized for office building, hotel, hospital and residential applications.
It can be used for 2-pipe or 4-pipe applications and is available in a housing finish with white glass display with mechanical buttons on a white base.

The PAW-FC-903TC thermostat is both easy to operate and install. The devices feature microprocessor-based control and large backlit LCD screens which display operation status (cooling, heating, and ventilation), fan speed, room temperature and set-point.



WARNING: HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH.

- Follow safe electrical work practices and applicable local codes.
- Read and understand the instructions before installing the product. Follow the instructions during installation.
- Installation, wiring, testing or service must be performed only by qualified persons in accordance with all applicable codes and regulations.
- Do not use the product for life or safety applications.
- Do not install the product in hazardous or classified locations.
- Do not exceed the product's ratings or maximum limits.
- The product may use multiple voltage/power sources.
- Turn off ALL power supplying equipment before working on or inside the equipment.
- Use a properly rated voltage sensing device to confirm that all power is off.
- Do NOT depend on the product for voltage indication.
- Products rated only for basic insulation must be installed on insulated conductors.
- Current transformer secondaries (current mode) must be shorted or connected to a burden at all times.
- Remove all wire scraps and tools, replace all doors, covers and protective devices before powering the equipment.

Failure to follow these instructions will result in death or serious injury.

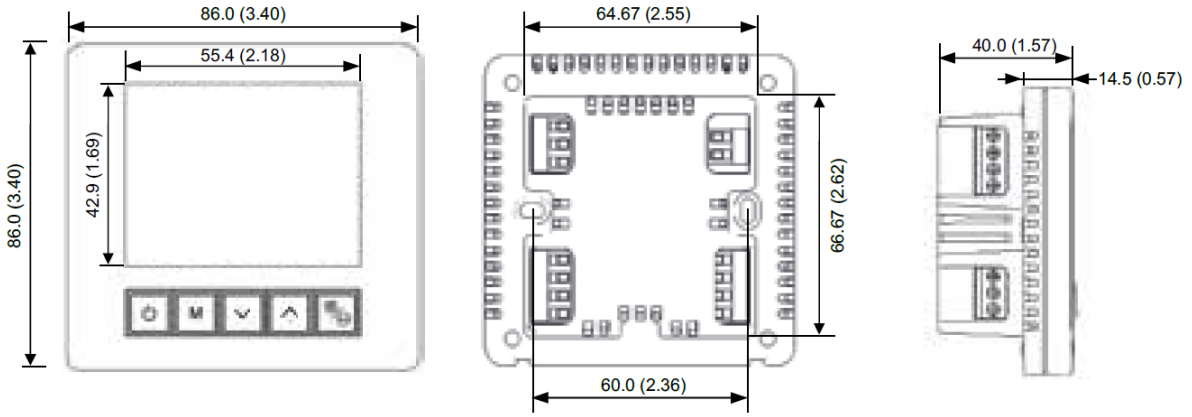
A qualified person is one who has skills and knowledge related to the construction and operation of this electrical equipment and installations, and has received safety training to recognize and avoid the hazards involved.
If this product is used in a manner not specified by the manufacturer, the protection provided by the product may be impaired.
No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

8.1 Specifications

Built-in sensing element	100 kΩ NTC, type 3	Housing	Flame-retardant PC
Accuracy	±1 °C	Dimensions	86 x 86 x 14.5 mm
Set-point range	5 to 35 °C		(3.40” x 3.40” x 0.57”)
Display range	0 to 50 °C (shown in 0.5 °C	Wall box	BS wall box, min. 35 mm
increments)		depth	
Operating temp.	0 to 50 °C	Hole pitch	60 mm (standard)
Operating humidity	5 to 95 %RH (non-	Control pollution degree	Pollution Degree 2
condensing)		Operation type	Type 1.B
Power consumption	< 1 W	Terminal sizing	Max: 2 x 1.5 mm² or 1 x 2.5
Power supply	90 to 240 Vac, 50/60Hz	mm² conductors	
Relay & load	Relay rating 5A	Pollution degree	2
	Load rating 2A resistive, 1A	Agency approvals	European conformance CE:
	Inductive		IEC/EN 60730-1
Protection class	IP20		IEC/EN 60730-2-9

8.2 Dimensions

Front view **Back view** **Side view**



8.3 Functions

Set-point Adjustment
The set-point buttons allow users to adjust the setpoint (in 0.5 °C increments) for the space.

Fan Speed
Users can select a fan speed (High, Medium, Low or Automatic) by a short press of the FAN/ECO button.

Mode Control
Users can switch operating modes (Heating, Cooling, or Ventilation) by pressing the Mode button.

Eco Mode
To begin Eco mode, do a short press of the FAN/ECO button until the ECO icon flashes in the lower right corner of the LCD display. In Cooling mode, the set-point is automatically adjusted to 26 °C and the fan speed is set to Low. In Heating mode, the set-point is automatically adjusted to 18 °C and the fan speed is set to Low. To exit Eco mode, do a short press of the FAN/ECO button to choose any other fan speed, as desired.

Button Lockout Function
This function allows the buttons to be deactivated to prevent thermostat operation by others.

Low Temperature Protection
If the room temperature drops below 5 °C, Heating mode will start automatically and the fan speed will be set to High. Once the temperature reaches 7°C, the thermostat will switch off the output.

Alert
In the event of an operating exception, the thermostat will attempt to command the valve to close and place the device in an inoperative state. The display will indicate the current status with one of five diagnostic messages:

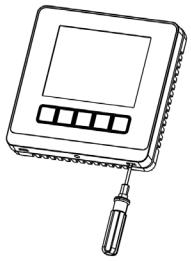
- EEPROM: ‘EE’
- Temperature sensor short-circuit: ‘E1’
- Temperature sensor open-circuit: ‘E2’
- Ambient temperature is higher than 50°C: ‘HI’
- Ambient temperature is lower than 0°C: ‘LO’

8.4 Installation

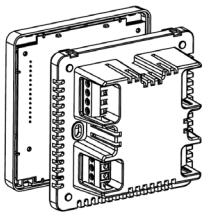
- Install the thermostat about 1.5 m (59”) above the floor
- Make sure the device is powered off prior to installation/service
- Do not install in locations that can be affected by radiant heat or in places with high levels of sunlight
- Do not install thermostats behind doors or in corners
- Protect from water/debris to avoid damaging the Thermostat

8.5 Mounting

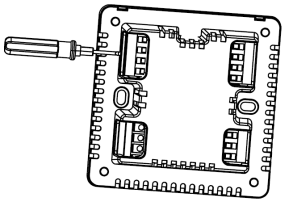
1 Insert a 3.5 mm flat head screwdriver along the bevel into the slot.
Pry upwards with appropriate force to release the two hooks



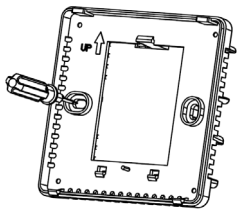
2 Remove the display from the base module.
Carefully remove the wire connections, if required.



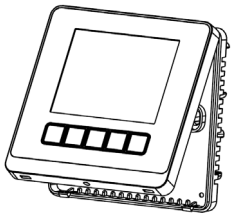
3 Connect the wires according to the appropriate wiring diagram shown above. Ensure the polarity of the mains supply is correct.



4 Mount the base module onto the wall box using the two screws supplied.

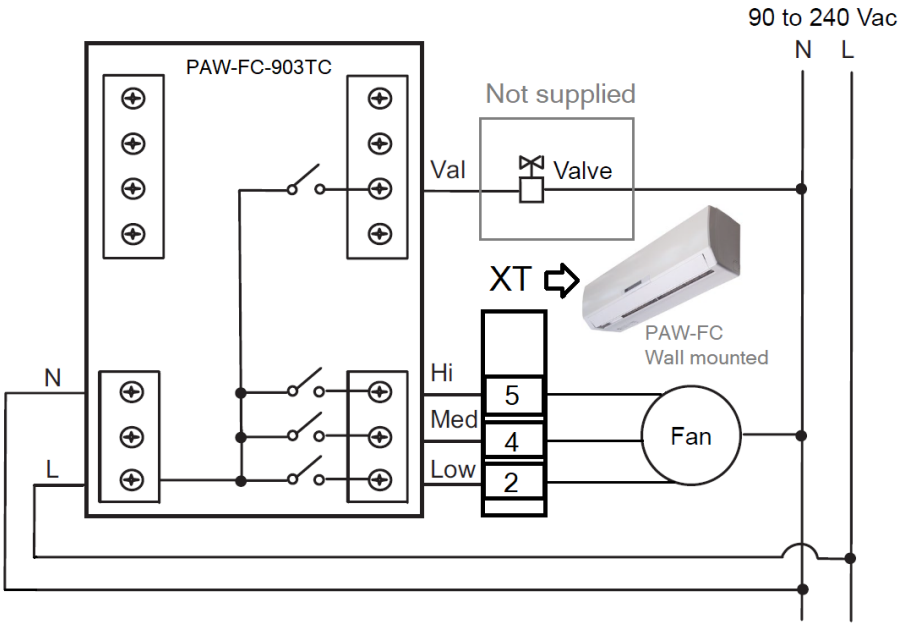


5 Fit the display module onto the base module.
Align upper hooks between the two modules.
Carefully replace the wiring connection if it has been removed.
Click display module onto base module using the two lower hooks.



8.6 Wiring

Provide an approved disconnecting means and overcurrent protection to supply conductors. The disconnecting device(s) shall meet the relevant requirements of IEC 60947-1 and IEC 60947-3 and shall be suitable for the application.
Locate and mark per local requirements.



8.7 Operation instructions

The meaning of each key is shown below.

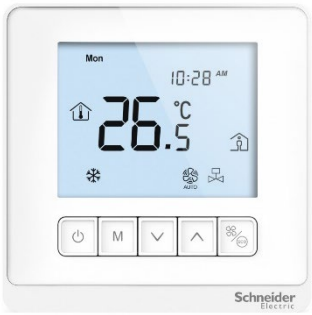
On/Off

M - Mode selection

Down

Up

Fan speed / **Eco** Mode



Power On/Off
A short press of the **On/Off** button will turn the power on. Another short press of the **On/Off** button will turn off the power, fan coil and motorized valve (if installed). If no buttons are pressed for 10 seconds, the thermostat backlight turns off. Press any button to turn the backlight back on.

Temperature Setting
With the power on, press **Down** to decrease the temperature setting and **Up** to increase temperature in steps of 0.5°C. The icon will appear on the display. If no buttons are pressed for six seconds, the icon is displayed, indicating the setpoint is confirmed.

Mode selection
With the power on, press **M** to switch the operation mode. The display indicates cooling with , heating with and ventilation with . Auto mode can be selected in the parameter settings and is indicated on the display with .

Fan Speed Selection
With the power on, to select a fan wind/air speed of high, medium, low or automatic . In automatic mode, the fan speed changes automatically. For a difference of 1°C, the fan will automatically switch to low fan speed. For a difference of 2°C, the fan will automatically switch to medium fan speed. For a difference of 3°C or more, the fan will automatically switch to high speed.

Motorized Valve Control (2-Pipe Models)
In cooling (or heating) mode, the motorized valve will be switched on when the room temperature is higher than (or lower than) the temperature setting by 1°C . It will switch off when the room temperature reaches the temperature setting.

Energy Saving Functions

Eco Mode
Press the button to turn on Eco mode. The display will show the and icons. If the thermostat is in Cooling mode, the temperature is automatically set to 26°C with the fan running at low speed. If the thermostat is in Heating mode, the temperature is automatically set to 18°C with the fan running at low speed. To turn Eco mode off, press the **Up** or **Down** buttons to change the temperature setting or press the FAN/ECO or ECO buttons.

Unoccupied Energy Saving Mode
Unoccupied Energy Saving mode can be entered via a hotel room key card. Example: after a hotel room key card is removed from the reader, and are displayed. If the thermostat is in cooling mode, the temperature is automatically set to 28 °C with the fan running at low speed. If the thermostat is in heating mode, the temperature is automatically set to 16 °C with the fan running at low speed. When the key card is returned to the reader, the indoor display and ECO icon turn off and the thermostat returns to the previously set mode.

Sleep Energy Saving Mode
At 12:00 a.m. the Override icon turns on. The temperature setpoint increases or decreases automatically every hour by 1°C until 3:00 a.m. Example: if the thermostat is in cooling mode, the setpoint will increase 1°C per hour until 3:00 a.m. then decreases 1°C per hour until the original setpoint is reached at 7:00 a.m. and turns Override off. If the thermostat is in heating mode, the setpoint will decrease 1°C per hour until 3:00 a.m. and then increases 1°C per hour until the original setpoint is reached at 7:00 a.m. and Override turns off. The cooling setpoint will not rise above 26°C and the heating setpoint will not drop below 18°C in Sleep Energy Saving Mode.

Time Setting Function
During power-on, press and hold **M** for six seconds to enter the Time Setting mode. Press the mode button **M** again to select the hour, minute and week. Press the **Up** and **Down** buttons to adjust this parameter. Time Setting mode is exited automatically if no button is pushed for six seconds.

Button Lockout Function
Press and hold the **Up** and **Down** buttons at the same time for six seconds to activate the keypad lockup function to prevent thermostat operation by others. While lockout is active, the lock icon will be displayed on the screen. To deactivate the lockout function, press and hold the **Up** and **Down** buttons at the same time for six seconds to unlock the system.

Low Temperature Protection Function
If the thermostat is switched off and the room temperature drops below 5°C, the thermostat will start automatically for heating and display the symbol. The fan will run at high speed automatically and the motorized valve will be opened. When the room temperature rises to 7°C, the low temperature protection function is cancelled and the thermostat will stop automatically, returning to its previously switched off state.

Low Temperature Protection Function
In the event of an operating exception with the temperature sensor (either built-in or external, depending on which is selected), the thermostat will attempt to command the fan and valve to close, place the device in an inoperative state and display the icon and an ‘E1’ or ‘E2’ alert.
E1: Sensor short-circuit alert
E2: Sensor open-circuit alert
‘HI’ will be displayed if the temperature is higher than 50°C.
‘Lo’ will be displayed if the temperature is lower than 0°C.

9. Optional Advanced wired remote controller: PAW-FC-RC1

PAW-FC-RC1 is a 230 VAC electronic fan-coil thermostat for room temperature control. It is suitable for every kind of building where reduced energy consumption and high comfort need to be met. The ability to switch between control modes depending on occupancy, makes it particularly suitable for public spaces, such as hotel rooms, offices, schools, hospitals, etc.
The modular design makes it easy to install and the flush mounting gives the unit a discreet appearance.

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- Do not install the product in hazardous or classified locations.
- Do not exceed the product's ratings or maximum limits.
- The product may use multiple voltage/power sources.
- Turn off ALL power supplying equipment before working on or inside the equipment.
- Use a properly rated voltage sensing device to confirm that all power is off.
- Do NOT depend on the product for voltage indication.
- Products rated only for basic insulation must be installed on insulated conductors.
- Current transformer secondaries (current mode) must be shorted or connected to a burden at all times.
- Remove all wire scraps and tools, replace all doors, covers and protective devices before powering the equipment.

Failure to follow these instructions will result in death or serious injury.

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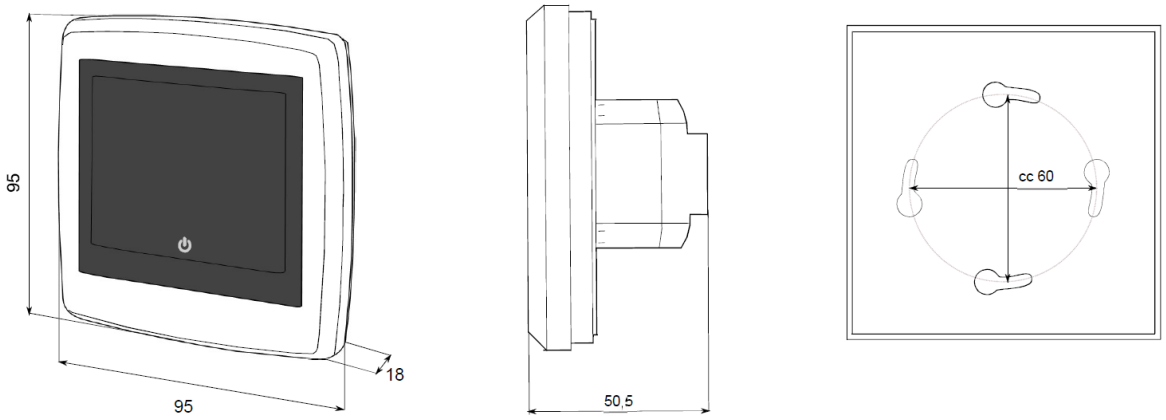
No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

9.1 Specifications

Supply voltage	230 V ~ (207…253 V ~ 50/60 Hz)
Power consumption	< 2 VA
Protection class	IP30
Ambient humidity	10…90% R.H. (non-condensing)
Ambient temperature	0…50°C
Measuring range, temperature	0…50°C, external sensor at Temp / AI: 0…80°C
Sensor element, temperature	NTC
Accuracy, temperature	±0.5 K
Display	Built-in
Display type	LED-backlit LCD
Output signal, temperature	NTC
Setpoint adjustment	5…35°C
Mounting	Room (flush-mounted with screw distance cc 60 mm)
Installation	Fan-coils, 2 or 4-pipe
Digital inputs (DI)	1 x Closing potential-free contact
Digital outputs (DO)	3 x Relay outputs for 3-step fan control, 230 VAC, Max. 5 A 2 x Relay outputs for On/Off valve actuators, 230 V AC, Max. 5 A
Analogue inputs (Temp / AI)	1 x PT1000 (standard: for the clamp-on sensor to install at the heat pump supply pipeline or for other functions)
Change-over function	Manual or automatically via DI or Temp / AI
Communication port	1
Internal serial port, type	RS485
Internal serial port, built-in protocol	Modbus (RTU)
Internal serial port, commun. speed	9600 bps (4800…38400 bps)
Internal serial port, parity	Even (Even, Odd, None)
Internal serial port, stop bit	1 (1 or 2)
Cable connection	Screw terminals max. 1.5 mm^2 (AWG 16)
Dimensions, external (W x H x Da)	95 x 95 x 50.5 mm
Weight, incl. packaging	0.24 kg
Material, housing and base	Polycarbonate, PC
Material, fire resistance	UL 94 V-0
Color, housing and base	Signal white RAL 9003

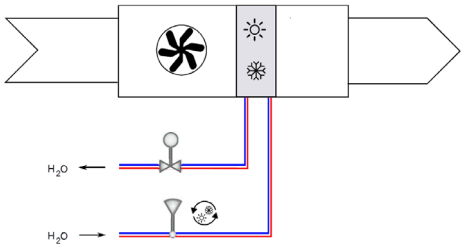
9.2 Dimensions



9.3 Functions

The room thermostat regulates heating and/or cooling in a room via digital outputs on/off for valves and for 3-speed fan control. The touch screen shows the actual operating state and is also used to access all parameters, such as setpoint, hysteresis, fan speed etc. The unit has a built-in room temperature sensor. The change-over (between heating and cooling at 2 pipe installation) can be controlled by selecting the mode on the display or via a digital input connected to any potential free contact (e.g. heat pump in COOL mode). Functions such as mould protection and automatic valve exercise ensures a proper functionality and a problem free work over the time.

Two pipe system
This control mode is suitable for room HVAC systems that use a 2-pipe fan coil as heating and cooling device (see figure).
A change-over function makes it possible to use the thermostat in a 2-pipe changeover system, where warm or cold media flow in the same pipes and one valve is used to regulate both heating and cooling distribution. The thermostat is either in heating or cooling mode and switches between the modes according to the change-over function settings.



9.4 Installation

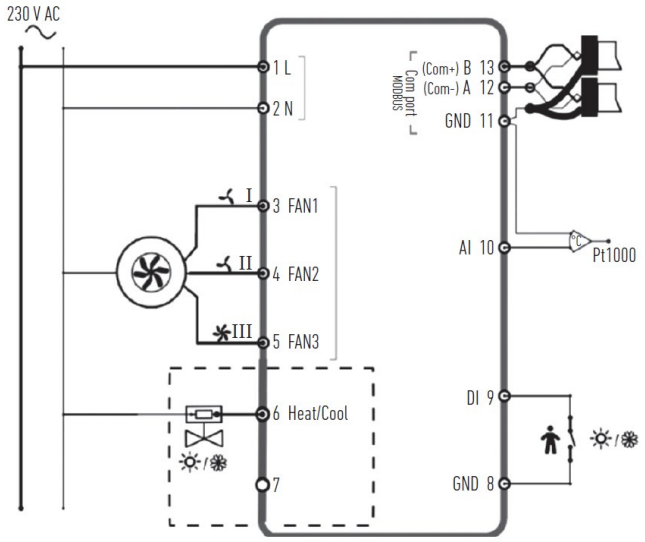
1. Install the attached clamp-on temperature sensor at the supply pipeline from the heat pump.
   Extend the cable if necessary up to 50m with J-Y(St)Y 2x2x0,8.

2. Separate the back plate from the display part with a small screwdriver. Insert him in the grooves at the bottom of the display part and turn it slightly.

3. Connect the wires to the terminals.

4. Place the back plate over the electrical wall box and fasten it on the wall using the mounting holes.

5. Clip the display back on to the back plate. Switch on the power supply. Controller starts in Off state.
   Press On/Off button to switch to On state



Terminal	Description	Terminal	Description
L	Supply voltage 230V AC Phase	FAN 1	Fan speed 1, digital output
N	Supply voltage 230V AC Neutral	FAN 2	Fan speed 2, digital output
GND	Ground /reference potential for AI, DI and Modbus Com N	FAN 3	Fan speed 3, digital output
Heat	Heating and Cooling valve actuator	DI	External potential-free contact, digital input
Cool	Cooling valve actuator at 4-pipe installation, digital output	A	Serial communication port Com A, Modbus RTU
AI	External temperature sensor, analog input	B	Serial communication port Com B, Modbus RTU

9.5 Operation instructions

The display behaves differently depending on the mode and the state that the controller is currently operating in.
The thermostat can be in one of the following states:

Off: Energy stop state where the controller neither heats nor cools. No background light is lit, only the On/Off button is shown and usable.

Occupied: Comfort (Standard) state or if a presence detector is connected and someone is in the room. Optimal heating and cooling takes place.

Standby: Energy saving state where reduced heating or cooling takes place.

Meaning of the buttons

Symbol	Description	
	On/Off button	
	Arrow **Up** = increase button for setpoint adjustment (+)	For start parameter list: press both together until the display shows 0000, then short **Up** to show P001.
	Arrow **Down** = decrease button for setpoint adjustment (-)	
	Changeover button to switch between heating and cooling via the display	
	Fan button to regulate the fan speed via the display between AUTO / MAN (off/1/2/3)	

The display can be in 3 modes, when controller state is *Occupied* or *Standby*:

- **Active mode**: The controller is activated, but no changes are made now. The display shows either the current room temperature (standard) or the calculated setpoint (if parameter P045 is set to 0).
- **Setpoint mode**: This mode is activated when pressing one of the arrows when in Active mode. Either the calculated setpoint ± adjustment (standard) or the current user defined setpoint adjustment (if P046 = 1) are shown.
- **Idle mode**: The controller has been inactive during a set time span (activatable with P044 > 0 seconds). All buttons and segments, except the two arrows, are dimmed down in the display.

9.6 Settings

Starting from display is in active mode, the controller settings can be edit in the following way:

1. Press both arrow buttons together until the display shows 0000.
2. Then press short “up”, to show P001 = Parameter 1.
3. Use “up” or “down” to step through the parameter list.
4. Press shortly the On/Off button to go in edit mode. Setting value is shown and flashes.
5. Edit the value by arrow buttons “up” or “down”.
6. Confirm your edit with press the On/Off button. Display jumps back to the parameter number.

If the display is left in the Parameter menu for more than 10 seconds without any activity (buttons pressed), the controller will automatically exit the parameter menu. The parameter menu can also be left, with the selection of “EXIT” and confirm with On/Off.

The most important parameters are:

Code	Description	Default	Min	Max
P001	Basic setpoint (SPbasic)	20°C	5	50
P002	Hysteresis used for setpoint calculation at Occupied state (heating and cooling)	1K	1	10
P003	Hysteresis used for setpoint calculation at Standby state (heating and cooling)	5K	1	30
P008	Controller mode 0 = 2-pipe systems 1 = 4-pipe systems	0	0	1
P009	Change-over mode, fan release function via heat pump supply sensor at AI 4 = manual setting in the display via button 5 = manual Heat 6 = manual Cool 7 = automatic via digital input DI	4	0	7
P010	Temperature difference between the current room temperature and the water temperature (AI1) to release the fan at Heat mode	3K	1	50
P011	Temperature difference between the current room temperature and the water temperature (AI1) to release the fan at Cool mode	3K	1	50

Code	Description	Default	Min	Max
P012	Operating mode for DI 0 = no contact connected 1-2 = not used 3 = presence detector connected (switches between Standby and Occupied state) 4 = change-over (heat pump in COOL mode)	0	0	4
P044	Inactive delay Delay for the display to dim down and enter Idle mode. If set to 0 (Basic) the display never dims down.	0s	0	600
P045	Display setting Active mode, shows current… 0 = setpoint 1 = room temperature	1	0	1
P046	Display setting Setpoint (SP) mode, shows … 0 = calculated SP 1 = SP adjustment	0	0	1
P047	Maximum setpoint adjustment increase	3K	0	20
P048	Maximum setpoint adjustment decrease	3K	0	20
P049	Brightness of segment at Active and Setpoint mode as well as in the parameter list	100%	0	100
P055	Version number, device type dependent			
EXIT	Leave the parameter menu, confirm with On/Off			

9.7 Error messages

The controller shows an error message, if the measured temperature is outside the limits or there is no connection to the sensor. The following messages may appear:

Value	Description	To do
LO	Measured value at AI less than low limit 0°C	Check the temperature of the pipeline and the value of the disconnected sensor (must HI Measured value at AI exceeds high limit 80°C be between 1kΩ and 1,309kΩ)
HI	Measured value at AI exceeds high limit 80°C	
ERR	Error: short circuit or open connection at AI	Check the cable between controller AI and the sensor

10. Modbus communication protocol

The Modbus protocol is a general-purpose protocol for data exchange between for instance control units, Building Management Systems, instruments and electricity meters. It's an asynchronous, serial Master Slave protocol. It's widely used, well documented and simple to understand. A Modbus master can communicate with up to 247 slave units with the device ID 1-247. A protocol like Modbus consists of several layers (OSI-model). The bottom layer is always the physical layer; the number of wires and signal levels. The next layer describes the communication digits (number of data bits, stop-bits, parity etc.). Next are the layers describing the Modbus-specific functions (number of digits per message, the meaning of different messages, etc.).

10.1 Modbus register types

1. Discrete Input Register
2. Coils Register
3. Input Register
4. Holding Register

Supported Modbus functions:

✓ 0x01 Read Coils
✓ 0x02 Read Discrete Inputs
✓ 0x03 Read Holding Registers
✓ 0x04 Read Input Registers
✓ 0x05 Write Single Coil
✓ 0x06 Write Single Register
✓ 0x0F Write Multiple Coils
✓ 0x10 Write Multiple Registers
✓ 0x17 Read/Write Multiple Registers

10.2 Discrete Input Register

Variable address	Description
1	*Not used*
2	*Not used*
3	Presence detected 0 = Presence **not** detected 1 = Presence detected Active if presence detector is configured at terminal *DI*.
4	Change-over heating/cooling 0 = Change-over heating 1 = Change-over cooling Active if Change-over sensor is configured at terminal *DI*.
5	Fan speed 1 0 = Fan speed 1 is **not** active on DO *FAN1* 1 = Fan speed 1 is active on DO *FAN1*
6	Fan speed 2 0 = Fan speed 2 is **not** active on DO *FAN2* 1 = Fan speed 2 is active on DO *FAN2*
7	Fan speed 3 0 = Fan speed 3 is **not** active on DO *FAN3* 1 = Fan speed 3 is active on DO *FAN3*
8	Heat valve 0 = Heat valve is **not** active on DO *Heat* 1 = Heat valve is active on DO *Heat*
9	Cool valve 0 = Cool valve is **not** active on DO *Cool* 1 = Cool valve is active on DO *Cool*
10	Indicates the current change-over state of the controller0 = Heating 1 = Cooling This value may be set by either *DI* or *Temp* change-over control
11-19	*Not used*
20	Actual value on *DI*, before filters such as NC/NO
21	*Not used*
22	Actual value on DO *FAN1*, after filters such as NC/NO
23	Actual value on DO *FAN2*, after filters such as NC/NO
24	Actual value on DO *FAN3*, after filters such as NC/NO
25	Actual value on DO *Heat*, after filters such as NC/NO
26	Actual value on DO *Cool*, after filters such as NC/NO

10.3 Coils Register

Variable address	Description
1	Minimum fan speed. The fan runs at least at speed 1, except in *Off* state. 0 = Not Active 1 = Active
2	Mould protection 0 = Not Active 1 = Active
3-9	*Not used*
10	NC/NO for terminal *DI* 0 = NO 1 = NC
11-14	*Not used*
15	NC/NO for terminal *Heat* 0 = NO 1 = NC
16	NC/NO for terminal *Cool* 0 = NO 1 = NC

10.4 Input Register

Variable address	Description	Scale
1	Regin Model number (= 1715)	1
2-3	*Not used*	
4	Status 0 = Beta status 1 = Released version	1
5-7	*Not used*	
8	Heating/cooling mode0 = *Not used* 1 = Heating 2 = Cooling	1
9	Controller state 0 = Off 1 = *Not used*2 = Standby 3 = *Not used* 4 = Occupied	1
10	Room temperature The current room temp, from the internal or the external sensor.	10
11	Change-over temperature or fan release temperature The current change-over temperature. Shows NaN! if no sensor is connected.	10
12-19	*Not used*	
20	Room temperature (internal) The value from the internal temperature sensor.	10
21	Room temperature (external) The value from the external temperature sensor. Shows a value if a temperaturesensor is configured for *Temp/AI*, NaN! otherwise.	10
22	Change-over temperature The value from the external change-over temperature sensor. Shows a value if achange-over sensor is configured for *Temp/AI*, NaN! otherwise.	10
23-24	*Not used*	
25	AI *Temp* Raw Raw value of the terminal (before any filters).Shows NaN! if no sensor is connected.	10
26	*Not used*	
27	AI *Temp* Value of the Analog input after filters and scaling.Shows NaN! if no sensor is connected.	10
28	*Not used*	
29	Calculated setpoint The setpoint for the controller (SP_{calc}), calculated from the basic setpoint,setpoint adjustment and hysteresis.	10
30-32	*Not used*	

10.5 Holding Register

Variable address	Description	Unit	Default value	Scale	Min value	Max value
1	Basic setpoint (SP_{basic})	°C	200	10	50	500
2	Hysteresis to calculate Heating and Cooling setpoint at *Occupied* state	°C	10	10	10	400
3	Hysteresis to calculate Heating and Cooling setpoint at *Standby* state	K	50	10	10	400
4	DeltaT, temperature span for On/Off control	K	10	10	5	100
5	Controller mode 0 = 2-pipe 1 = 4-pipe	-	0	1	0	1
6	Fan control 0 = No fan control 1 = Fan is controlled by heat command2 = Fan is controlled by cool demand 3 = Fan is controlled by both heat and cool demand	-	3	1	0	3
7-10	*Not used*					

Variable address	Description	Unit	Default value	Scale	Min value	Max value
11	Number of fan speed used 1 = 1 fan speed is used 2 = 2 fan speeds are used 3 = 3 fan speeds are used	-	3	1	1	3
12	Change-over mode (0-3) and fan release function (4-7) via heat pump supply sensor 0 = Manual setting in display1 = Manual Heat 2 = Manual Cool 3 = Automatic via analog or digital input 4 = manual setting in the display via button5 = Manual Heat 6 = Manual Cool 7 = Automatic via digital input DI	-	4	1	0	7
13	Temperature difference between the room temperature and the water temperature to switch to heating (P009 = 3) or to release the fan at heat mode (P009 = 7)	K	30	10	10	250
14	Temperature difference between the room temperature and the water temperature to switch to cooling (P009 = 3) or to release the fan at cool mode (P009 = 7)	K	30	10	10	250
15	Switch on delay for terminal *DI*	min	0	1	0	120
16	Switch off delay for terminal *DI*	min	0	1	0	120
17	Remote setting of the current controller state0 = Off 1 = No Action2 = Standby 3 = No Action4 = Occupied 5 = No remote control	-	5	1	0	5
18-29	*Not used*					
30	Manual or Auto control of output for Heat valve (terminal *Heat*) 0 = Manual Off 1 = Manual On 2 = Auto (output is controlled by the heat demand)	-	2	1	0	2
31	Manual or Auto control of output for Cool valve (terminal *Cool*) 0 = Manual Off 1 = Manual On 2 = Auto (output is controlled by the cool demand)	-	2	1	0	2
32-33	*Not used*					
34	Manual/Auto Fan control, 3-speed fan0 = No fan speed active 1 = Fan speed 1 is active on DO *FAN1* 2 = Fan speed 2 is active on DO *FAN2* 3 = Fan speed 3 is active on DO *FAN3* 4 = Auto. Fan speed follows heat or cool demand according to the application.	-	4	1	0	4
35-36	*Not used*					
37	User defined setpoint adjustment (*SP$_{adj}$*) set by using the buttons on the front. Can be reset remotely. 0 = No current setpoint adjustment made.	K	0	10	-200	200
38	Positive user defined setpoint adjustment. The maximum allowed setpoint adjustment (*SP$_{adj}$*) increase.	K	30	10	0	200
39	Negative user defined setpoint adjustment. The maximum allowed setpoint adjustment (*SP$_{adj}$*) decrease.	K	30	10	0	200
40-43	*Not used*					
44	Heat valve exercise hour, 0 – 23h	h	23	1	0	23
45	Cool valve exercise hour, 0 – 23h	h	23	1	0	23
46	Sensor connected to AI *Temp* 0 = No sensor connected (Internal room sensor is used)1 = Room temperature sensor 2 = Change-over temperature sensor or fan release function	-	2	1	0	2
47	*Not used*					
48	Contact/detector connected to the terminal *DI* 0 = No contact connected 1-2 = *Not used* 3 = Presence detector (activate *Occupied* state)4 = Change-over contact	-	0	1	0	4
49-52	*Not used*					
53	Display inactive delay Delay for the display to dim down to *Idle* mode.If set to 0 the display never dims down.	s	0	30	0	600

54	Calibration of the external temperature sensor (terminal *Temp*) Is used to eliminate cable resistance for the temperature measuringand thus correct the temperature reading from *Temp* if needed.	-	0	10	-100	100
55	Filter factor for temperature on analog input *Temp* Low pass filter to avoid temperature spikes and flickering.	%	20	1	0	100
56	Calibration of the internal temperature sensor Is used to correct the internal temperature reading if necessary.	-	0	10	-100	100
57	Display setting for *Active* mode 0 = Show the calculated setpoint (*SP*$_{calc}$)1 = Show the room temperature	-	1	1	0	1
58	Display setting for the *Setpoint* mode 0 = Show the calculated setpoint (*SP*$_{calc}$) 1 = Show the user defined setpoint adjustment (*SP*$_{adj}$)	-	0	1	0	1
59	Intensity or "brightness" of display when in *Active* or *Setpoint* mode	%	70	1	0	100
60	Intensity or "brightness" of display when in *Idle* mode	%	25	1	0	100
61	The Modbus address the controller uses	-	1	1	1	254
62	Modbus stop bits and parity 0 = 8N2 1 = 8O1 2 = 8E1 3 = 8N1	-	2	1	0	3
63	Timeout should be at least 1.5 times a character, i.e. at least 2 ms (@9 600 baud)	ms	3	1	1	500
64	Answer delay should be at least 3.5 times a character, i.e. at least 5 ms (@9 600 baud)	ms	5	1	1	500
65	0 = 4800 bps 1 = 9600 bps 2 = 19200 bps 3 = 38400 bps	-	1	1	0	3

11. Operation instructions of guide vane

Prior to operating the air conditioner, the guide vane should be adjusted with its opening angle among the yellow area at the right side of the air supply outlet. After the air conditioner is turned off, please close the guide vane.

Notes:

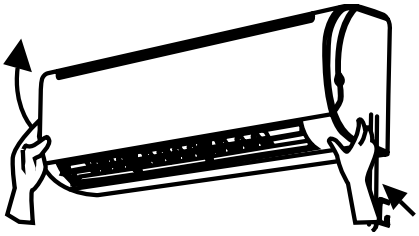
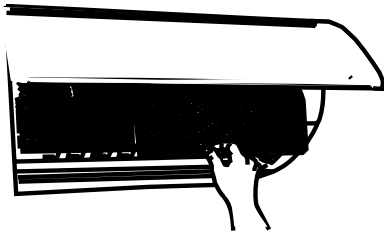
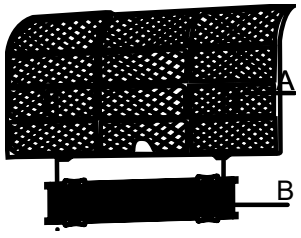
1. **Do not insert your fingers into the air supply outlet when manually adjusting the guide vane.**
2. **Condensate drops may be generated when the opening angle of the guide vane is too small.**
3. **Excessive noise may be generated when the opening angle of the guide vane is too large.**

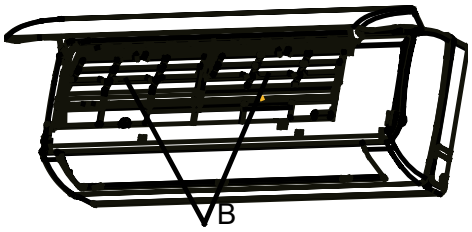
12. Check after installation and test operation

Items to be checked		Possible malfunction
Has the unit been fixed firmly?	☐	The unit may drop, shake or emit noise.
Has a water leakage test been carried out?	☐	It may cause insufficient cooling (heating) capacity.
Is heat insulation sufficient?	☐	It may cause condensation and dripping.
Is water drainage well positioned?	☐	It may cause condensation and dripping.
Is the voltage in accordance with the rated voltage marked on the nameplate?	☐	It may cause electric malfunction or damage the part.
Is the electric wiring and piping connection installed correctly and securely?	☐	It may cause electric malfunction or damage the part.
Has the unit been connected to a secure earth connection?	☐	It may cause electrical leakage.
Is the power cord specified?	☐	It may cause electric malfunction or damage the part.
Is the inlet and outlet covered?	☐	It may cause insufficient cooling (heating) capacity.

13. Installation and maintenance of healthy filter

13.1 Installation

1	Holding the body of the unit at the right arrow, leaver the front cover away from the body in the direction of the left arrow.	
2	Pull the air filter downwards to remove it.	
3	Mount the healthy filter onto the air filter. **A** = Air filter **B** = Healthy filter	

4	If the air filter cannot be installed, please mount the healthy filter on the front case. **B** = Healthy filter	
5	Mount the air filter properly along the arrow direction, and then close the panel cover	

13.2 Cleaning and maintenance

Take out the healthy filter before cleaning and reinstall it after cleaning according to the installation instruction. Pay special attention that the silver ion filter cannot be cleaned with water. It is however possible to cleat an active carbon, photocatalyst, low temperature conversion (LTC) catalyst, formaldehyde eliminator, catechin or mite killing filter with water. Do not brush vigorously with a hard object to avoid damage. Once cleaned, Dry the filter in the sun or shade, but not by wiping.

13.3 Service life

1. The healthy filter commonly has a useable lifetime of one year under normal conditions. For silver ion filters, it is considered at the end of its service life, when its surface becomes black or dark green.

2. This supplementary instruction is provided for reference to the unit with healthy filter. If the graphics provided herein differ from the physical goods, the latter shall prevail. The quantity of healthy filters shall be based on the actual delivery.

14. Clean and care

CAUTION:
Securely isolate the power before cleaning the air conditioner, or it may cause electric shock.
Never clean the unit with by spraying it with water, it can result in electric shock.

Volatile liquid (e.g. thinner or gasoline) will damage the air conditioner. (So wipe the units with a dry soft cloth, or a cloth slightly moistened with water or cleanser.)

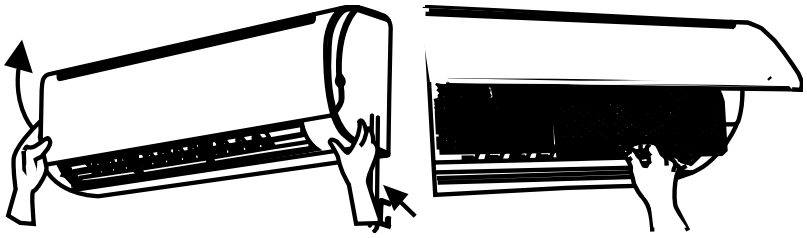
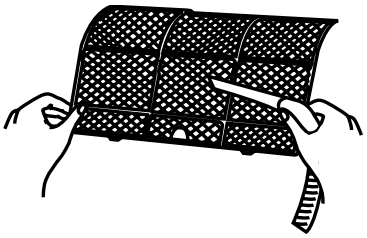
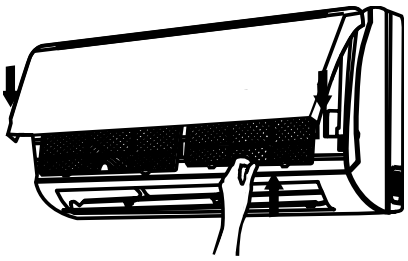
14.1 Clean the front panel

When cleaning the front panel, please dip the cloth into the water temperature of 45°C below, then to dry the cloth and wipe the dirty part.

14.2 Clean the air filter

It is recommended to carry out an adequate cleaning of the air filter at least **once every 3 months**.
If the unit is installed in an environment with a high level of dust, the air filters may require more regular cleaning.

CAUTION:
After taking off the filter, do not touch the fin of indoor unit, in order to avoid injuring your fingers.

1	**Take down the air filter** At the slot of surface open the panel at an angle as shown, pulling the air filter downward to remove it from the unit.	
2	**Clean the air filter** To clean the dust adhering to the filters, you can either use a vacuum cleaner, or wash them with warm water the water with the neutral detergent should below 45°C degree, and dry it in the shade.	**Note:** **Never use water above 45°C to clean, or it can cause deformation or discoloration.** **Never dry it by fire, it may result in combustion or deformation.** 
3	**Insert the air filter** Reinsert the filters along the direction of arrowhead, and then close the cover and secure with the clasp	

CHECK BEFORE USE

1. Be sure that nothing obstructs the air outlet and intake vents.
2. Check that the earth wire is properly connected.

MAINTENANCE

1. Be sure that nothing obstructs the air outlet and intake vents.
2. Check that the earth wire is properly connected.

TAKE CARE

It is not the manufacturer's policy to make recommendations in terms of water treatment (please contact a specialised water treatment company).

However, given the critical nature of this subject, particular care should be taken to ensure that, if treatment is required, it works effectively.

Using untreated or unsuitable water leads to excessive clogging inside the coil tubes (earth and mud deposits, corrosion, etc.) with major consequences on the thermal efficiency of the unit and irreversible damage to the equipment.

The manufacturer and its representative decline all responsibility in the event of untreated or incorrectly treated water being used.

15. Troubleshooting

Phenomenon	Troubleshooting
Unit does not operate immediately when the air conditioner is restarted.	Once the air conditioner is stopped, it will not operate for approximately 3 minutes to protect itself
There's unusual smell blowing from the outlet after operation is started.	The unit has no peculiar smell by itself. If it has, that is due to the smell accumulated in the ambient environment. Solution: Clean the filter. If problem persists, professional cleaning may be required. (Please contact an authorized service centre).
Sound of water flow can be heard during the operation.	The air conditioner is started, when it is running, or the unit is stopped, sometimes there is swoosh or gurgle, the sound is due to fluid flow. This is not a malfunction.
In COOL mode, sometimes the mist emitted from the air outlet vent.	When the indoor temperature and humidity are very high, this phenomenon would happen. This is caused by the room air that is swiftly cooled down. After running for a while, indoor temperature and humidity will fall down, the mist will desist.
Creaking noise can be heard when start or stop the unit	This is caused by the deformation of plastic due to the changes of temperature.
Cooling (Heating) efficiency is not good.	Is Temp. setting suitable? Are inlet and outlet vents obstructed? Is filter dirty? Are the windows and doors closed? Fan speed set at low speed? Is there any heat sources in the room?

Phenomenon	Troubleshooting
Wireless remote control is not available.	The unit is interfered by abnormal or frequent functions switchover occasionally the controller cannot operate. At this time, you need to isolate the power for a short period before reenergising the unit. Is it in its receiving range? Or obstructed? Check the batteries inside the wireless remote control are sufficiently charged, otherwise to replace the batteries. Is the wireless remote control is damaged.
Water leakage in the room.	The air humidity is on the high side. Condensing water over flowed. The connection position of the unit drainage pipe is loosed. If unit is running under the high humidity for a long time, the moisture will be condensed on the air outlet grill and drip off.
The unit cannot deliver air.	In HEAT mode, when the temperature of the heat exchanger is very low, that will stop deliver air in order to prevent cool air. In COOL mode, when the temperature of the heat exchanger is very high, that will stop deliver air in order to prevent hot air. In dehumidifying mode, sometimes indoor fan will stop, in order to avoid condensing water being vaporized and restrain temperature rising.

Notes

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