

INSTALLATION AND MAINTENANCE MANUAL

“Original Language”

PAW-FC Fan Coils

Ducted



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.

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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 **ducted** (AC / EC) configuration which is available in different sizes. The cooling capacity is from 0,5 to 9,6 kW and the heating capacity is from 0,6 to 13,6 kW. The version available is reversible 2-pipes, 4-pipes, with AC fan or EC fan.

Main features and accessories:

- 2 and 4-pipe configurations
- Left or right hand arrangements
- Ease of installation
- Very low acoustic levels
- 2 way or 3 way ON/OFF valves
- Auxiliary drain pan
- Air intake with removable grid
- G2 filter

Optional controller for AC fan	Optional controller for EC fan
	
Optional controller. Wired remote controller. PAW-FC-903TC	Optional controller. Advanced wired remote controller. PAW-FC-RC1
	
	Optional controller. Wired remote controller for EC fans. PAW-FC-907TC

Casing

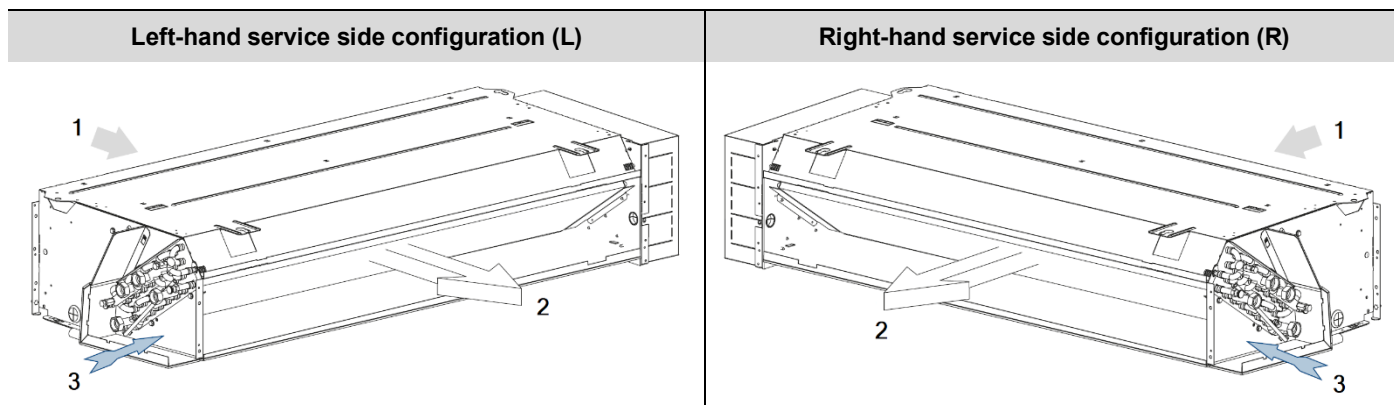
Made of galvanized steel insulated with closed cell polyethylene foam. The casing has either 3 slotted lugs (D-type models) or 4 fixing brackets (F-type models), which allow the units to be easily and quickly installed at site. Access to all internal components of the unit is facilitated by easy dismantling of the casing. All models are equipped with an inclined condensate drain pan to ensure optimal condensate draining and to minimize water retention. Condensate drain pan is made from galvanized sheet steel coated with closed cell polyethylene foam on external face. The drain pan is painted to ensure anticorrosion protection.

Coil

The coil is made of staggered copper tubes, mechanically expanded into aluminium fins, assuring maximum heat transfer efficiency. The 2-pipe units are equipped with one 2-row (D010) or 3-row (D020 ... D080, F040) main chilled water coil. In addition to this, the 4-pipe units each have one extra 1-row heating coil.

Each coil is supplied with headers having an air vent at the highest point and a drain plug at the lowest point. The coil compartment is lined with 10 mm thick closed cell polyethylene foam insulation, having M1 fire classification.

Note: The water connection side, or service side, is defined as left-hand or right-hand side as seen from the unit's air discharge side.



Note: As an example, schematic shows a 4-pipe D050 model in left-hand (L) and right-hand (R) service side configuration

- 1 – Air return side
- 2 – Air discharge side
- 3 – Water connection

Filter

Units are equipped with filters consisting of cleanable synthetic media (sewn on wire frame), which are easily removable for cleaning or replacement.

Ventilation

The units are fitted with a fan-motor assembly of which the fan is composed of double inlet forward curved centrifugal wheel(s) dynamically balanced and specially designed for an optimal air flow and a low noise level.

While **D-type** models can be equipped with either AC or EC fan motor, the **F-type** models are only available with EC fan motor.

The AC motor is an asynchrony direct drive type having 5 speeds, 3 of them are factory prewired.

The motor is suitable for nominal voltage of 230 V / 1 Ph / 50-60 Hz and is equipped with a built-in thermal overload protection of automatic reset type.

The EC motor is a high efficiency type with low electrical consumption for significant energy savings. The motor is suitable for 0 - 10 V input, ensuring variable speed capability.

Relays for fan speed control are fitted, as standard.

Power supply

Units are supplied complete with internal electrical wiring terminating in a junction block protected by a cap.

Cabinet internal space allows for installation of optional control systems supplied by the distributor or others.

4.1 Operating limits

Ambient air conditions Minimum ambient temperature / relative humidity: +5°C / 15% R.H.
Maximum ambient temperature / relative humidity: +32°C / 70% R.H.

Water circuit conditions Maximum operating pressure (D-type models / F-type models) 16 bar / 10 bar
Minimum inlet temperature (100 % water) +5°C
Maximum inlet temperature +90°C

Water quality

Risk of excessive clogging inside the coil tubes due to inadequate water quality.

Using untreated or unsuitable water can lead 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.

- Contact a specialised water treatment company for advice on establishing a suitable water quality and on any required water treatment.
- If treatment is required, make sure it works effectively.
- Ensure that a suitable water quality is maintained at all times, because the manufacturer and its representative decline all responsibility in the event of untreated or incorrectly treated water being used.

Guidelines for water quality

Substance	Condition Effects	Recommended content
NH ₄ ⁺	No NH ₄ ⁺ ammonium ions in the water, highly detrimental to copper.	< 10 mg/l
Cl ⁻	Cl ⁻ chloride ions are detrimental to copper with a risk of pitting corrosion.	< 10 mg/l
SO ₄ ²⁻	SO ₄ ²⁻ sulphate ions may cause perforating corrosion	< 30 mg/l
Fluoride ions	No fluoride ions	< 0.1 mg/l
Fe ²⁺ and Fe ³⁺	No Fe ²⁺ and Fe ³⁺ ions, particularly in case of dissolved oxygen. The presence of these ions with dissolved oxygen indicates corrosion of steel parts, likely to generate corrosion of copper parts under Fe deposits.	Fe < 5 mg/l; with dissolved oxygen < 5 mg/l
Dissolved silica	Silica is an acid element of water and may also cause corrosion.	< 1 mg/l
Total water hardness (TH)	Values between 10 and 25 may be recommended. This facilitates scaling deposits likely to limit copper corrosion. Excess TH values may lead to clogging the pipes.	10 °F < TH < 25 °F
Total alkalinity (TAC)		TAC < 100 mg/l
Dissolved oxygen	Prevent any sudden change in the water's oxygenation conditions. Also, avoid deoxygenating water by sparging inert gas as well as over oxygenating it by pure oxygen sparging. Disturbing oxygenation conditions destabilizes copper hydroxides and particle salting-out.	
Electrical Resistivity / Conductivity	The higher the resistivity, the slower the corrosion. Values above 3000 ohm/cm are preferred. A neutral environment favours maximum resistivity. For electrical conductivity, values around 200 ... 600 S/cm can be recommended.	
pH	neutral pH at 20°C	7 < pH < 8

4.2 Nomenclature

The nomenclature reflects each model's type, coil configuration, external static pressure configuration, size and service side.

Example:

	PAW-FC	2	A	-	D	080	L	
Unit type	PAW-FC = Fan Coil Unit							
Number of pipes	2 = 2-pipe configuration 4 = 4-pipe configuration							
Fan motor type	A = AC fan motor ¹ E = EC fan motor ² (electronically commutated)							
Separator	-							
Model type	D = ducted model with low external static pressure (ESP) F = ducted model with medium external static pressure (ESP) E = ducted model with high external static pressure (ESP) T = ceiling-mounted model P = floor-standing model U = cassette-type model K = wall-mounted model							
Size								
Service side	L = left-hand service side configuration ³ R = right-hand service side configuration ³ Blank = not applicable ⁴							
IR compatibility	Blank = not applicable IR = IR receiver integrated ⁵ (supplied with compatible IR controller)							

1) AC fan motor not available for F-type models

2) EC fan motor not available for K-type models

3) Service side as seen from the unit's air discharge side

4) For U-type models: all connections on one side. For K-type models: connections always on #?left/right-hand?# side

5) Applicable for K-type models only

4.3 Unit nominal performance

PAW-AC fan 2-pipe	Left connection		FC2A-D010L	FC2A-D020L	FC2A-D030L	FC2A-D040L	FC2A-D050L	FC2A-D060L	FC2A-D070L	FC2A-D080L
	Right connection		FC2A-D010R	FC2A-D020R	FC2A-D030R	FC2A-D040R	FC2A-D050R	FC2A-D060R	FC2A-D070R	FC2A-D080R
Total cooling capacity ¹⁾	Lo/Med/Hi	kW	0,7/1,0/1,5	0,7/1,2/1,7	1,0/2,0/2,5	1,2/2,4/3,2	1,7/3,2/4,6	2,7/4,6/5,8	3,4/6,1/7,3	4,6/6,1/8,1
Sensible cooling capacity ¹⁾	Lo/Med/Hi	kW	0,5/0,8/1,1	0,6/0,9/1,3	0,8/1,5/1,9	0,9/1,8/2,3	1,2/2,2/3,3	1,9/3,3/4,5	2,4/4,3/5,1	3,4/4,6/6,3
Water flow	Lo/Med/Hi	l/h	124/172/250	127/213/289	172/341/430	206/413/547	296/544/798	466/784/1003	587/1058/1252	798/1048/1400
Water pressure drop	Lo/Med/Hi	kPa	10,7/19,5/39,2	1,9/3,9/6,3	6,3/19,3/28,8	5,4/17,1/28,0	7,5/22,8/46,9	13,9/37,4/60,2	4,8/15,4/21,5	11,9/19,3/32,5
Heating capacity ²⁾	Lo/Med/Hi	kW	0,9/1,4/2,0	0,9/1,5/2,2	1,3/2,4/3,1	1,4/2,9/4,0	2,1/4,1/5,7	3,1/5,3/7,1	4,3/7,9/9,3	5,9/8,1/11,6

PAW-AC fan 4-pipe	Left connection		FC4A-D010L	FC4A-D020L	FC4A-D030L	FC4A-D040L	FC4A-D050L	FC4A-D060L	FC4A-D070L	FC4A-D080L
	Right connection		FC4A-D010R	FC4A-D020R	FC4A-D030R	FC4A-D040R	FC4A-D050R	FC4A-D060R	FC4A-D070R	FC4A-D080R
Total cooling capacity ¹⁾	Lo/Med/Hi	kW	0,7 / 0,9 / 1,3	0,6 / 1,1 / 1,6	1,0 / 1,9 / 2,4	1,1 / 2,3 / 3,0	1,7 / 3,0 / 4,3	2,6 / 4,4 / 5,6	3,3 / 5,9 / 6,9	4,5 / 5,9 / 8,0
Sensible cooling capacity ¹⁾	Lo/Med/Hi	kW	0,5 / 0,7 / 1,0	0,5 / 0,8 / 1,2	0,8 / 1,5 / 1,8	0,8 / 1,7 / 2,2	1,2 / 2,2 / 3,1	1,8 / 3,2 / 4,3	2,3 / 4,2 / 4,9	3,3 / 4,4 / 6,2
Water flow	Lo/Med/Hi	l/h	114 / 159 / 225	109 / 192 / 268	165 / 327 / 414	194 / 388 / 517	284 / 522 / 748	449 / 756 / 967	575/1019/1193	775/1020/1380
Water pressure drop	Lo/Med/Hi	kPa	8,3 / 15,2 / 29,0	1,5 / 3,4 / 5,6	3,0 / 9,5 / 14,4	6,4 / 22,3 / 36,8	4,2 / 12,8 / 25,1	10,2/27,7/44,5	5,9 / 17,9 / 24,4	19,3/31,1/53,6
Heating capacity ²⁾	Lo/Med/Hi	kW	0,5 / 0,7 / 1,0	0,6 / 0,9 / 1,1	1,0 / 1,4 / 1,6	0,9 / 1,6 / 2,1	1,5 / 2,3 / 3,0	1,9 / 2,9 / 3,7	2,7 / 3,6 / 4,3	3,9 / 5,6 / 7,1
Water flow	Lo/Med/Hi	l/h	79 / 127 / 178	100 / 146 / 190	164 / 232 / 274	160 / 273 / 354	251 / 401 / 508	325 / 505 / 633	456 / 626 / 736	673/963/1226
Water pressure drop	Lo/Med/Hi	kPa	1,9 / 3,5 / 5,6	1,5 / 3,2 / 5,3	5,1 / 9,0 / 11,9	9,2 / 26,5 / 42,7	10,7/24,6/29,5	20,3/43,9/52,9	67,2/117,9/137,8	33,1 / 63,7 / 75

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.


PAW- EC fan 2-pipe	Left connection		FC2E-D010L	FC2E-D020L	FC2E-D030L	FC2E-D040L	FC2E-D050L	FC2E-D060L	FC2E-D070L	FC2E-D080L	FC2E-F040L
	Right connection		FC2E-D010R	FC2E-D020R	FC2E-D030R	FC2E-D040R	FC2E-D050R	FC2E-D060R	FC2E-D070R	FC2E-D080R	FC2E-F040R
Total cooling capacity ¹⁾	Lo/Med/Hi	kW	0,6 / 1,2 / 2,1	0,6 / 1,4 / 2,4	0,9 / 2,1 / 3,1	1,3 / 2,9 / 4,2	1,3 / 4,0 / 5,0	2,0 / 4,5 / 5,2	2,7 / 5,9 / 6,9	5,1 / 6,5 / 8,8	3,6 / 6,6 / 9,2
Sensible cooling capacity ¹⁾	Lo/Med/Hi	kW	0,5 / 1,1 / 1,9	0,5 / 1,1 / 1,9	0,6 / 1,6 / 2,4	1,0 / 2,1 / 3,0	1,1 / 3,0 / 3,7	1,4 / 3,5 / 4,0	2,0 / 4,3 / 5,2	3,7 / 4,8 / 6,6	2,9 / 6,1 / 9,1
Water flow	Lo/Med/Hi	l/h	107/ 210/ 356	110/ 237/ 406	148/ 354/ 532	230/ 506/ 722	231/ 685/ 743	341/ 767/ 800	463/1008/1098	879/1111/1254	627/1142/1575
Water pressure drop	Lo/Med/Hi	kPa	8,2/28,2/76,9	1,5 / 4,6 / 11,0	5,0/20,5/42,1	6,4/24,4/46,3	4,9/35,1/41,0	7,8/35,8/38,8	3,0/14,0/16,6	14,1/21,4/26,6	10,6/51,2/93,8
Heating capacity ²⁾	Lo/Med/Hi	kW	0,8 / 1,6 / 2,9	0,9 / 1,9 / 3,3	1,0 / 2,2 / 3,4	1,4 / 3,0 / 5,3	1,7 / 5,2 / 5,5	2,3 / 5,9 / 6,1	3,8 / 7,3 / 8,2	6,2 / 8,0 / 9,3	4,4 / 8,3 / 11,8

PAW- EC fan 4-pipe	Left connection		FC4E-D010L	FC4E-D020L	FC4E-D030L	FC4E-D040L	FC4E-D050L	FC4E-D060L	FC4E-D070L	FC4E-D080L	FC4E-F040L
	Right connection		FC4E-D010R	FC4E-D020R	FC4E-D030R	FC4E-D040R	FC4E-D050R	FC4E-D060R	FC4E-D070R	FC4E-D080R	FC4E-F040R
Total cooling capacity ¹⁾	Lo/Med/Hi	kW	0,5 / 1,1 / 1,9	0,6 / 1,2 / 2,2	0,8 / 1,9 / 2,9	1,2 / 2,7 / 4,0	1,2 / 3,6 / 4,6	1,8 / 4,1 / 4,9	2,6 / 5,1 / 6,4	5,0 / 6,2 / 9,6	3,3 / 6,4 / 8,8
Sensible cooling capacity ¹⁾	Lo/Med/Hi	kW	0,4 / 0,9 / 1,7	0,4 / 1,0 / 1,8	0,6 / 1,5 / 2,2	0,9 / 1,9 / 2,8	1,0 / 2,8 / 3,5	1,2 / 3,2 / 3,8	1,9 / 3,8 / 4,8	3,6 / 4,6 / 7,2	2,7 / 5,6 / 8,0
Water flow	Lo/Med/Hi	l/h	92 / 185 / 327	97 / 206 / 375	129/ 321/ 493	205/ 457/ 681	212/ 625/ 686	306/ 707/ 749	443/ 886/ 977	855/1070/1242	567/1093/1511
Water pressure drop	Lo/Med/Hi	kPa	5,8/20,1/59,2	1,3 / 3,7 / 9,7	4,0 / 9,2 / 19,7	6,3/29,6/60,1	2,5/17,9/21,3	5,1/24,3/27,2	3,5/13,6/16,5	22,9/33,9/44,3	10,0/47,2/86,7
Heating capacity ²⁾	Lo/Med/Hi	kW	0,4 / 0,8 / 1,4	0,6 / 0,9 / 1,5	1,0 / 1,4 / 1,8	1,2 / 2,0 / 2,8	1,6 / 2,4 / 2,5	1,4 / 2,9 / 3,1	2,5 / 3,4 / 3,6	4,5 / 5,9 / 6,9	2,5 / 4,5 / 6,2
Water flow	Lo/Med/Hi	l/h	76 / 140 / 235	95 / 161 / 255	166/ 243/ 304	204/ 350/ 483	267/ 416/ 438	233/ 503/ 531	434/ 583/ 614	767/1011/1194	432/783/1065
Water pressure drop	Lo/Med/Hi	kPa	1,8 / 4,0 / 8,4	1,4 / 3,8 / 9,4	5,3 / 9,7 / 14,1	15,6/41,8/76,3	11,9/26,3/28,9	11,5/43,6/48,1	61,5/103,8/113	42,1/69,7/95,1	30,6/107,6/214,8

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.

5. Installation

	<p>CAUTION</p> <ul style="list-style-type: none"> - 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.
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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

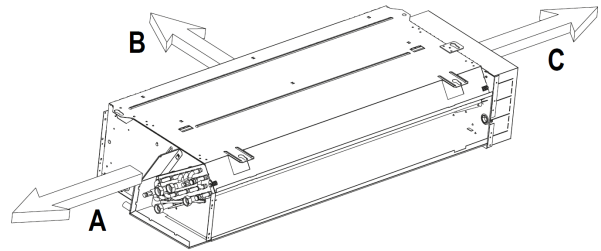
Select the unit location with the following aspects in mind:

- The units must not be installed in a machinery room or a kitchen where vapours or oil mist could pass through the unit, nor in a laundry or in very damp areas (bathroom, sauna, etc.).
- The units are designed for installation in the void of a suspended ceiling.
- There must be sufficient free space between the suspended ceiling and the solid ceiling for installing the unit.
- The structure at the unit location must be capable of withstanding the operating weight of the unit.
- The unit location must enable the unit's air inlet and outlet connections to be made.
- The unit's service side configuration must be taken into account to make sure that the supply, return and condensation piping can be connected according to the installation plans and will fit into the confines of the Fan Coil casing.
- The unit location must provide for easy condensate evacuation and it must be high enough to permit good drainage of defrost water with siphon.
- There must be adequate space around the unit for maintenance access, i. e. a minimum clearance on the service side for access to the filter and the fan motor assembly.
- In addition to the service clearances it is essential that provision is made for adequate and safe service access.
- All electrical and ductwork connections to the unit must be made via flexible connections to prevent transmission of vibration.
- When the units are ducted at the inlet side, the controller return sensor must be located outside the fan compartment in order to ensure its good operation.

5.2 Clearance

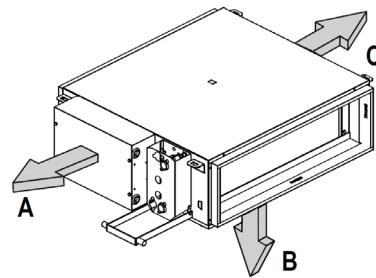
Models PAW- FC** -D****

A [mm]	B [mm]	C [mm]
400	100	400
Clearance for access to the hydraulic connections (service side).	Clearance for removing the filter and access to the fan motor assembly.	Clearance for access to the opposite side of the hydraulic connections and the electrical control box.



Models PAW- FC** -F****

A [mm]	B [mm]	C [mm]
1200	300	200
Clearance for access to the hydraulic connections (service side) and to the electrical control box.	Clearance for removing the filter and access to the fan motor assembly.	Clearance for access to the opposite side of the hydraulic connections.



5.3 Mounting the unit



All installation equipment and mounting material must be provided by the installer.

The Fan Coil units are designed to be suspended on M8 threaded rods or anchor bolts with nuts and washers. The mounting lugs with slot-type holes are fitted to the upper part of the units.

If possible, assemble the compulsory or optional accessories before mounting the unit in its final location (see instructions provided with the relevant accessory).

Mount the Fan Coil unit according to the following instructions:

1. Drill holes in the solid ceiling in accordance with the mounting lug dimensions of the relevant unit (*see Appendix Dimensions*).
1. Attach the threaded rods or anchor bolts to the ceiling and place nuts and washers on each threaded rod.
2. Lift up the unit and slide the threaded rods through the mounting lug slots. Make sure that the unit casing does not touch the ceiling.
3. Attach the unit with further firmly tightened washers, nuts and lock nuts.
Recommendation: Fit rubber blocks to prevent any risk of vibration being transmitted to the structure.
4. Making sure that the unit is slightly pitched towards the condensate drain outlet to facilitate condensate evacuation, lock the unit in its final location and **level it off with a spirit level** in order to guarantee correct operation.

IMPORTANT

After installing the unit, be sure that there is no more longitudinal and transversal counter slopes avoiding condensate evacuation. When installing any required or optional accessory, refer to the installation instructions of the relevant accessory.

6. Hydraulic connections



CAUTION:
All installation equipment and mounting material must be provided by the installer.
Flexible pipes are recommended for connecting the coils to prevent transmission of vibration.

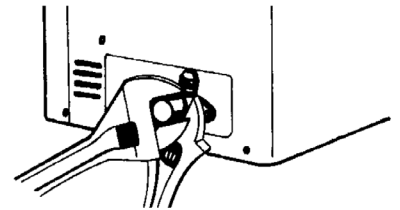
IMPORTANT

- The installation and operating conditions require the MANDATORY fitting of a valve ON the unit AND/OR UPSTREAM in the hydraulic circuit. This is to prevent chilled water from circulating in the appliance when the fan is not operational, which may cause condensation issues.
A 2-way valve or a 3-way valve can be obtained as an accessory.
- When making the hydraulic connections, ensure that no impurities are introduced into the pipework.

6.1 Connecting the pipes of the main water circuit

Connect the water pipes according to the following instructions:

1. Connect the supply water pipe to the water inlet and the return water pipe to the water outlet of the unit (see - **Hydraulic connections** -)
2. Use a counter-wrench for tightening the water pipe connectors. Avoid overtightening, using excessive force or pushing the coil header towards the inside of the unit, as this may damage the coil;
3. Insulate all water pipes to avoid sweating and heat loss.



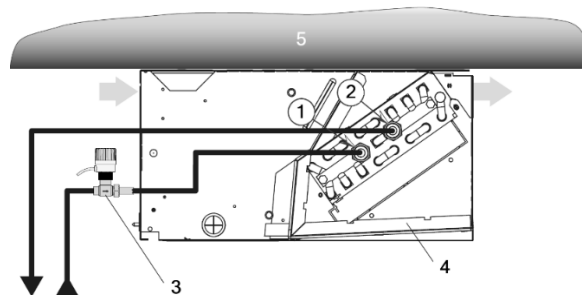
6.2 Installing the mandatory 2-way or 3-way regulating valve

Connect the regulating valve according to the following instructions:

1. Install the mandatory 2-way or 3-way regulating valve on the unit and/or upstream in the hydraulic circuit according to the following scheme (showing model D040 with left-hand service side configuration as an example):

2-way regulating valve

1	Water inlet connection
2	Water outlet connection
3	2-way water valve
4	Condensate drain pan
5	Ceiling

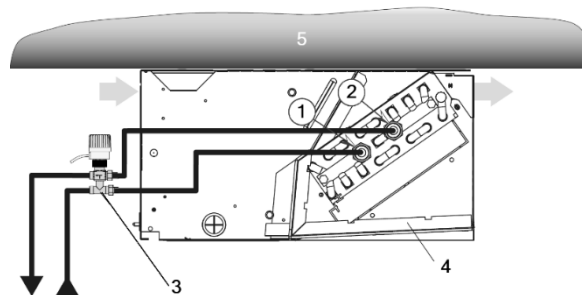


IMPORTANT

Using a 2-way regulating valve **MANDATORILY** requires the fitting of additional balancing valves in the water circuit, to prevent water from circulating in the unit when the fan is not operating and to maintain a steady water flow in the rest of the water circuit.

3-way regulating valve

1	Water inlet connection
2	Water outlet connection
3	3-way water valve
4	Condensate drain pan
5	Ceiling

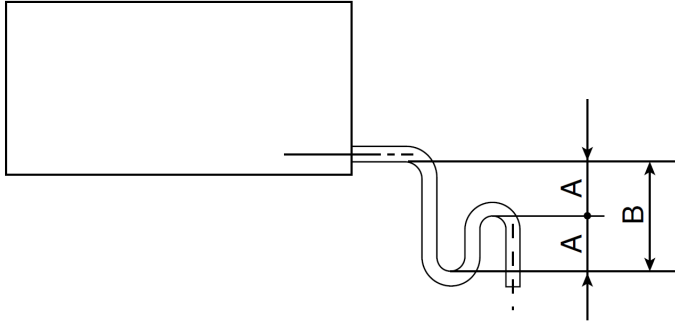


6.3 Connecting the condensate evacuation pipe to the drain tray

A condensate tray is supplied with a 5/8" exterior diameter copper drain hole, which must be connected to the main evacuation pipe, to ensure that the condensed water will drain properly from the tray.

Connect the condensate evacuation pipe according to the following instructions:

1. Remove all foreign material from the condensate tray.
2. Connect the evacuation pipe to the drain hole of the condensate tray by means of a flexible drain hose.
3. Make sure that the evacuation pipe is installed with a downward slope and that it has a siphon, which must be made in accordance with the following scheme.



Height **A**: must be equal to 2 times the value of the negative pressure (given in mmH₂O) present in the condensate reception zone.

Height **B** must be equal to 2 times the value of height A.

Example:
negative pressure = 40 mmH₂O
height A = 80 mmH₂O
height B = 160 mmH₂O.

4. Make sure that the condensate drain hose is firmly connected to the drain tray and check if it allows liquid to drain properly by pouring water into the condensate tray.
5. Insulate the evacuation pipe to prevent condensation forming on the outside of the pipe.
6. Fill the coil with the amount of water which is applicable for the relevant model.

Note:

To vent the air from the coil, use the air vent located on the upper part of the upper header. To drain the water, use the drain plug located on the lower part of the lower header.

7. Electrical connections

WARNING



Danger to life from electric shock.

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.

The devices are operated with 230-V alternating voltage. Any contact with live conductors can present a danger to life from electric shock.

- Electrical installation work must be undertaken by a trained electrician.
- Ensure that you have disconnected the electricity supply before you carry out installation work. Secure the electricity supply against being switched on again unintentionally.

7.1 Connecting the power supply cable

All Fan Coil units are designed for operation with 230 volts, single phase, 50 or 60 cycles.

A voltage variation of $\pm 10\%$ with regard to the nominal voltage of 230 Volt is acceptable.

Each Fan Coil unit is supplied with a terminal board. Mains voltage and extra-low voltage wiring must each be done in accordance with the applicable local electrical code and the wiring diagram corresponding to the unit model.

If electrical wiring or conduit comes through the floor, it must be sealed along its passage through the floor.

The power supply cable shall be selected in accordance with the following criteria:

- Power supply cable length.
- Maximum unit starting current draw – the cables shall supply the appropriate voltage to the unit terminals for starting.

- Power supply cables' installation mode.
- Cables' capacity to transport the total system current draw.

Connect the power supply cables according to the following instructions:

- Ensure that a short circuit protection is provided. This protection shall comprise fuses or circuit breakers with high breaking capacity, mounted on the distribution board.
- Ensure that a device to disconnect all the power conductors with a approved minimum opening distance is included in the mains power supply according to best installation practices.
- Before making the connections, be sure that the available power supply has the same voltage and phase as that shown on the Fan Coil unit nameplate.
- Connect the mains voltage and extra-low voltage wiring as shown in the relevant wiring diagram.
- Ensure that earthing of the unit is done correctly and is effective.

7.2 Connecting a field-supplied controller

When installing a field-supplied controller, keep the following aspects in mind:

- Make sure the device and the electricity supply are switched off prior to installation/ service.
- Do not install the controller in locations that can be affected by radiant heat or in places with high levels of sunlight.
- Do not install the controller behind doors or in corners.
- Install the controller approximately 1.5 m above the floor. In the event that the controller is intended for use by wheelchair users, please refer to local regulations
- Protect the device from water/debris to avoid damaging the controller.

Mount the controller according to the following instructions:

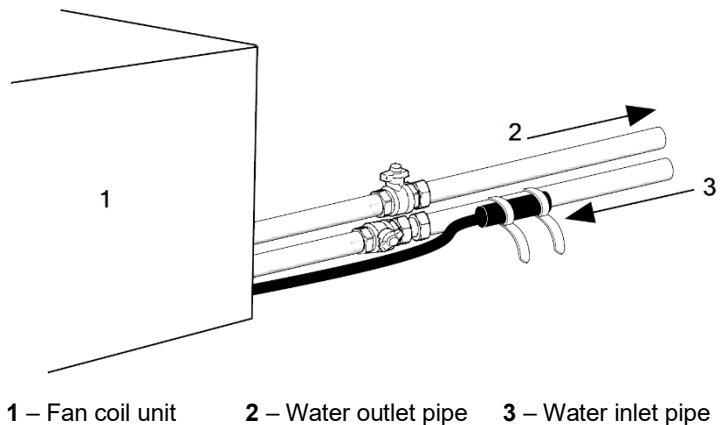
1. If the controller is not to be embedded into the wall, proceed to the next step. Otherwise, first make sure that the concealed wiring for the controller and the hole in the wall for installing a hollow installation box have been prepared. Then lead the controller wiring into the hollow installation box and place the installation box in the hole in the wall.
2. If the controller terminal board is accessible from outside, proceed to the next step. Otherwise, open the controller housing and separate its front part including the display from its back part including the controller terminal board.
3. Connect the wires of the Fan Coil wiring with the controller terminal board (→ *Electrical connections, section 7.1*).
4. Fix the one-part controller or the back part of the controller housing with screws to the installation box or, if no installation box is to be used, to the wall.
5. For two-part controllers, re-connect the controller front part to the back part and close the controller housing carefully.

IMPORTANT

If the local control includes a remote ambient temperature sensor and/or a set temperature adjustment module, these shall be connected with shielded cable and shall not pass through the same conduits as the power supply cables, because the voltages induced may create reliability faults in the unit's operation.

If a field-supplied thermostat or temperature sensor is to be used, mount it according to the following instructions:

- Choose the desired mounting position for the sensor bulb on the Fan Coil unit's water inlet pipe as shown in the scheme here on the right.
- At the chosen position, coat the pipe with heat conducting paste to guarantee good thermal transfer.
- Mount the sensor bulb at the chosen position on the water inlet pipe.
- Wire the sensor bulb to the Fan Coil unit's terminal board as described in the sensor's installation instructions.



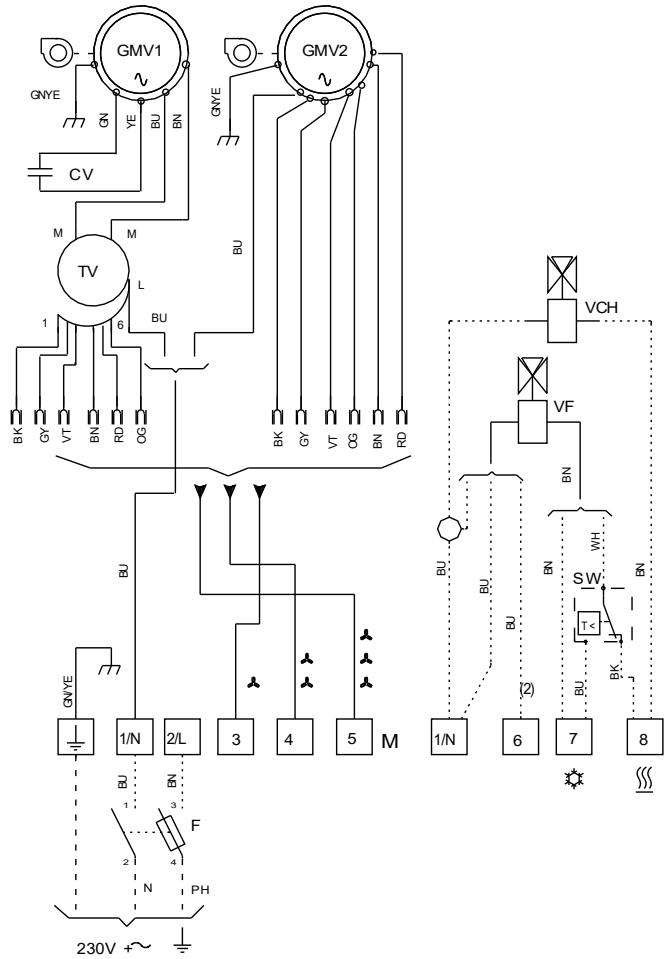
Wiring diagram - Models PAW- FC*A-D****

AC Fan motor

LEGEND	
GMV1/GMV2	Fan motor
TV	Autotransformer fan motor GMV1
M	Terminal strip
S1-S5	Low-Max speed
Options	
SW	Water temperature sensor
VF	Cooling valve
VCH	Heating valve (4 pipes)
F	General protection – Fuse

Motor speed configuration						
Model	Motor	S1	S2	S3	S4	S5
10/20	GMV1	RD	BN	VT	GY	BK
30	GMV1	OG	BN	VT	GY	BK
40	GMV2	RD	OG	VT	GY	BK
50	GMV2	BN	OG	VT	GY	BK
60/70	GMV1	OG	BN	VT	GY	BK
80	GMV1	RD	BN	VT <td GY	BK	

Colour legend	
BK	Black
OR	Orange
WH	White
RD	Red
BU	Blue
GNYE	Green/Yellow
VT	Purple
BN	Brown
GY	Grey



Electrical data - Models PAW- FC*A-D****

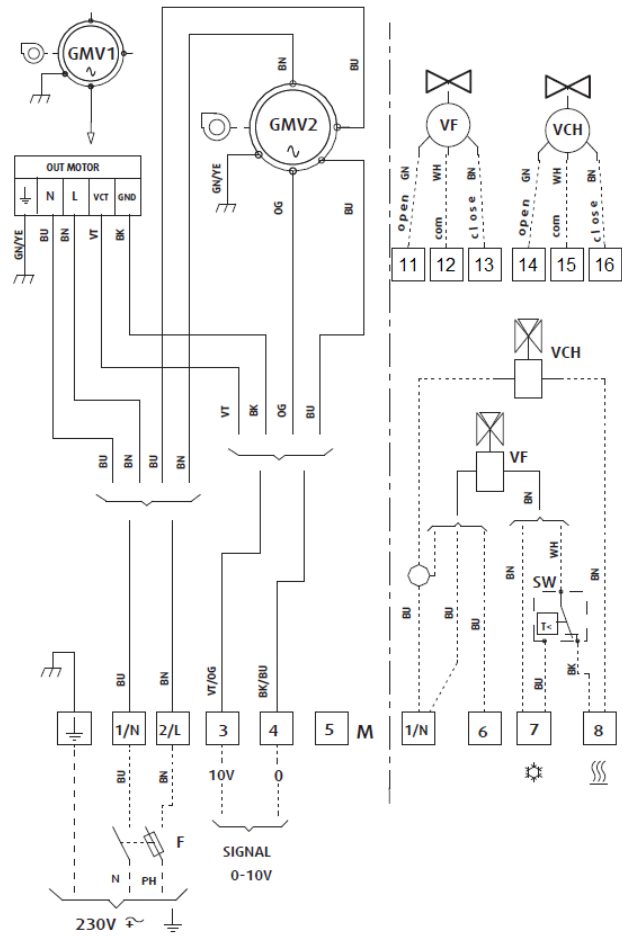
PAW- AC fan 2/4-pipe	Left connection		FC*A-D010L	FC*A-D020L	FC*A-D030L	FC*A-D040L	FC*A-D050L	FC*A-D060L	FC*A-D070L	FC*A-D080L
	Right connection		FC*A-D010R	FC*A-D020R	FC*A-D030R	FC*A-D040R	FC*A-D050R	FC*A-D060R	FC*A-D070R	FC*A-D080R
Power supply	Voltage	V	230	230	230	230	230	230	230	230
	Phase		Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase
	Frequency	Hz	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60
Power consumption 2-pipe	Lo/Med/Hi	W	13 / 24 / 36	10 / 18 / 29	16 / 37 / 45	15 / 37 / 56	28 / 55 / 72	37 / 75 / 105	53 / 100 / 147	90 / 112 / 188
Power consumption 4-pipe	Lo/Med/Hi	W	13 / 24 / 36	10 / 18 / 28	16 / 37 / 44	15 / 37 / 55	28 / 54 / 70	37 / 74 / 104	53 / 99 / 145	90 / 112 / 188

Wiring diagram - Models PAW- FC*E-D****

EC Fan motor

LEGEND	
GMV1/GMV2	Fan motor
M	Terminal strip
Options	
SW	Water temperature sensor
VF	Cooling valve
VCH	Heating valve (4 pipes)
F	General protection – Fuse

Colour legend	
BK	Black
OR	Orange
WH	White
RD	Red
BU	Blue
GNYE	Green/Yellow
VT	Purple
BN	Brown
GY	Grey



Electrical data - Models PAW- FC*E-D****

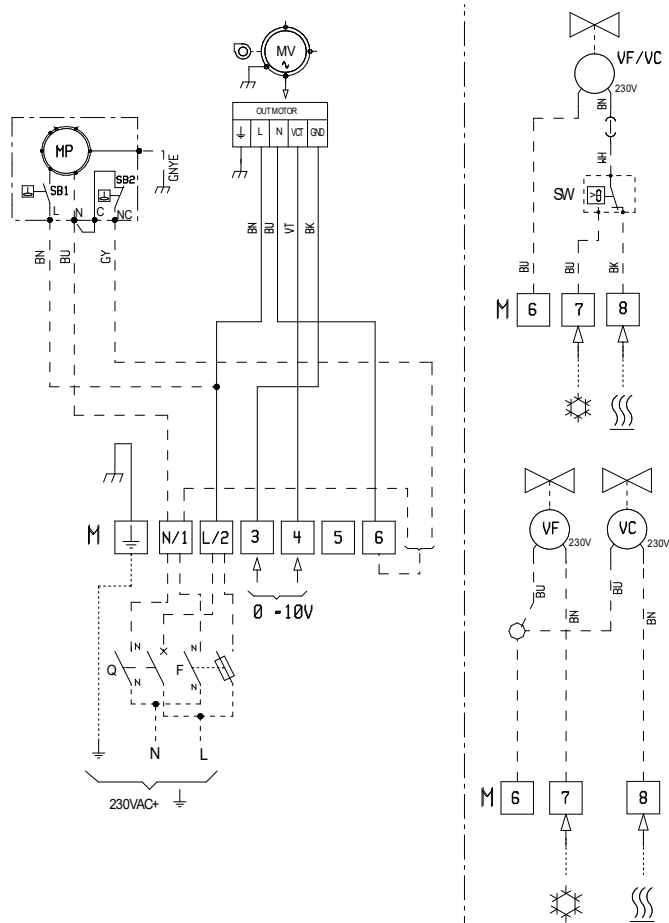
PAW- EC fan 2/4-pipe	Left connection		FC*E-D010L	FC*E-D020L	FC*E-D030L	FC*E-D040L	FC*E-D050L	FC*E-D060L	FC*E-D070L	FC*E-D080L
	Right connection		FC*E-D010R	FC*E-D020R	FC*E-D030R	FC*E-D040R	FC*E-D050R	FC*E-D060R	FC*E-D070R	FC*E-D080R
Power supply	Voltage	V	230	230	230	230	230	230	230	230
	Phase		Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase
	Frequency	Hz	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60	50 / 60
Power consumption 2-pipe	Lo/Med/Hi	W	5 / 11 / 41	5 / 13 / 41	4 / 16 / 42	2 / 13 / 43	4 / 24 / 46	2 / 30 / 54	11 / 44 / 77	23 / 42 / 108
Power consumption 4-pipe	Lo/Med/Hi	W	5 / 11 / 39	5 / 13 / 40	6 / 15 / 40	2 / 12 / 42	2 / 23 / 44	2 / 28 / 52	11 / 43 / 75	22 / 41 / 116

Wiring diagram - Models PAW- FC*E-F****

EC Fan motor

LEGEND	
MV	Fan motor
M	Terminal strip
Options	
MP	Condensate pump
SW	Change over thermostat
VF	Cooling valve
VC	Heating valve (4 pipes)
QF	General protection – Fuse

Colour legend	
BN	Brown
BK	Black
RD	Red
BU	Blue
GNYE	Green/Yellow
VT	Purple
OG	Orange
GY	Grey



Electrical data - Models PAW- FC*E-F****

PAW- EC fan 2/4-pipe	Left connection	FC*E-F040L	
	Right connection	FC*E-F040R	
Power supply	Voltage	V	230
	Phase		Single phase
	Frequency	Hz	50 / 60
Power consumption 2-pipe	Lo/Med/Hi	W	11 / 62 / 197
Power consumption 4-pipe	Lo/Med/Hi	W	11 / 60 / 188

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:
 - o Tap water pipe.
 - o Gas pipe.
 - o Contamination pipe.
 - o 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. Accessories: 2 way or 3 way ON/OFF valves

A 2-way valve or 3-way regulating valve, whose installation is mandatory to ensure that the appliance operates correctly, can be obtained from the supplier as accessory.

The following table shows which valve model must be chosen for the relevant Fan Coil model.

Fan Coil units		Valves		
Model	Pipe configuration	Size	2-way valve	3-way valve
D-type and F-type models	2-pipe configuration	D010 – D060	PAW-FC-2WY-11/55-1	PAW-FC-3WY-11/55-1
		D070 – D080	PAW-FC-2WY-65/90-1	PAW-FC-3WY-65/90-1
		F040	PAW-FC-2WY-F040	PAW-FC-3WY-F040
	4-pipe configuration	D010 – D060	PAW-FC4-2WY-010	-
		D070 – D080	PAW-FC4-2WY-070	-
		F040	PAW-FC4-2WY-F040	-
		D010	-	PAW-FC4-3WY-010
		D020 – D060	-	PAW-FC4-3WY-020
		D070 – D080	-	PAW-FC4-3WY-070
		F040	-	PAW-FC4-3WY-F040

WARNING



Danger to life from electric shock.

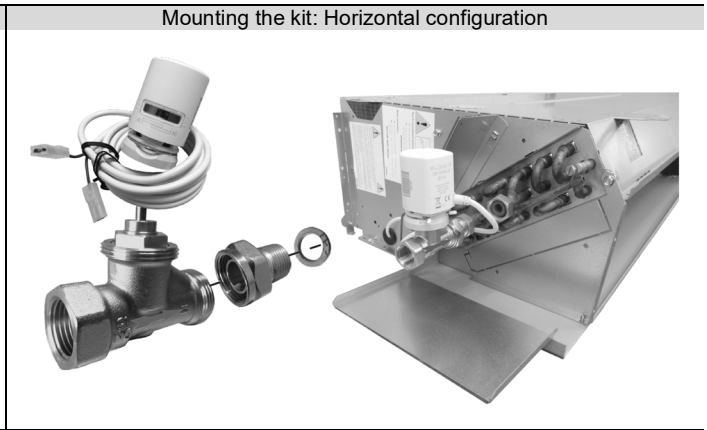
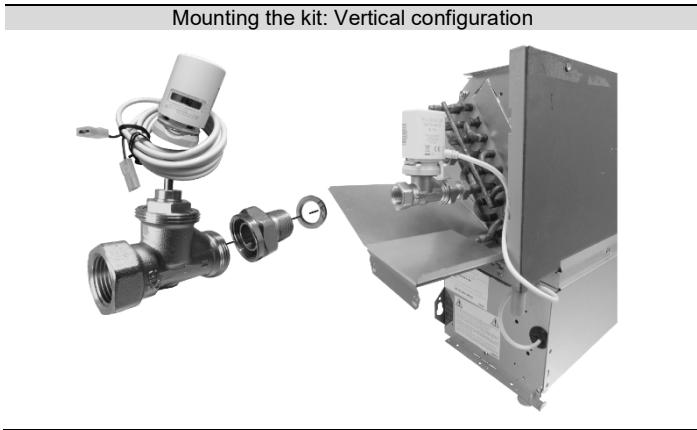
Before carrying out any work on the equipment, make sure that the electrical power supply is disconnected and that there is no possibility of the unit being started inadvertently.

Non-compliance with the above instructions can lead to injury or death by electrocution.

8.1 Kit 2-way valve installation - Models PAW- FC2A-D010* to PAW- FC2A-D060*

The kit 2-way valve includes:

Ref.	Description	Quantity					
1	Valve body	1 pc	1	2	3	4	5
2	Actuator	1 pc					
3	Male fitting	1 pc					
4	Gasket	1 pc					
5	Female fitting	1 pc					



WARNING

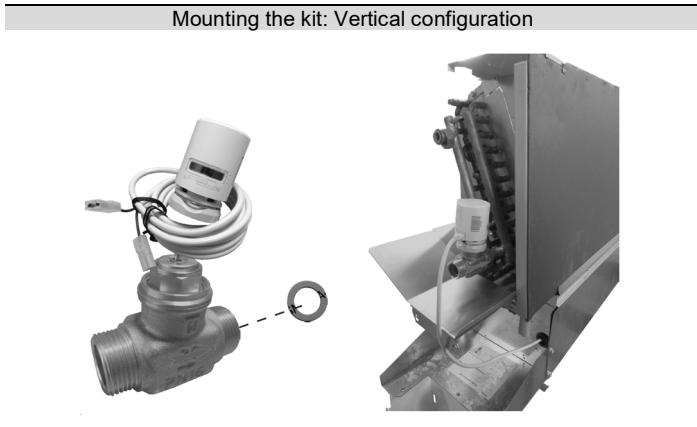
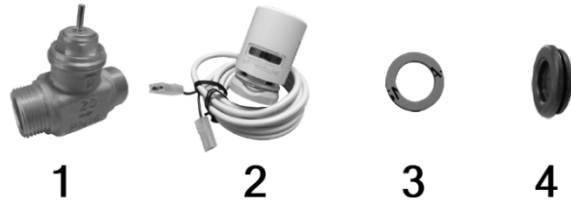


Danger to life from electric shock.
Before carrying out any work on the equipment, make sure that the electrical power supply is disconnected and that there is no possibility of the unit being started inadvertently.
Non-compliance with the above instructions can lead to injury or death by electrocution.

8.2 Kit 2-way valve installation - Models PAW- FC2A-D070* to PAW- FC2A-D080*

The kit 2-way valve includes:

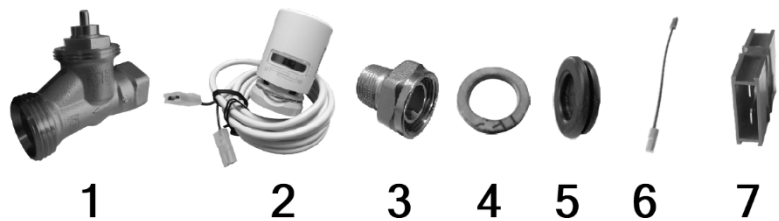
Ref.	Description	Quantity
1	Valve body	1 pc
2	Actuator	1 pc
3	Gasket	1 pc
4	Female fitting	1 pc

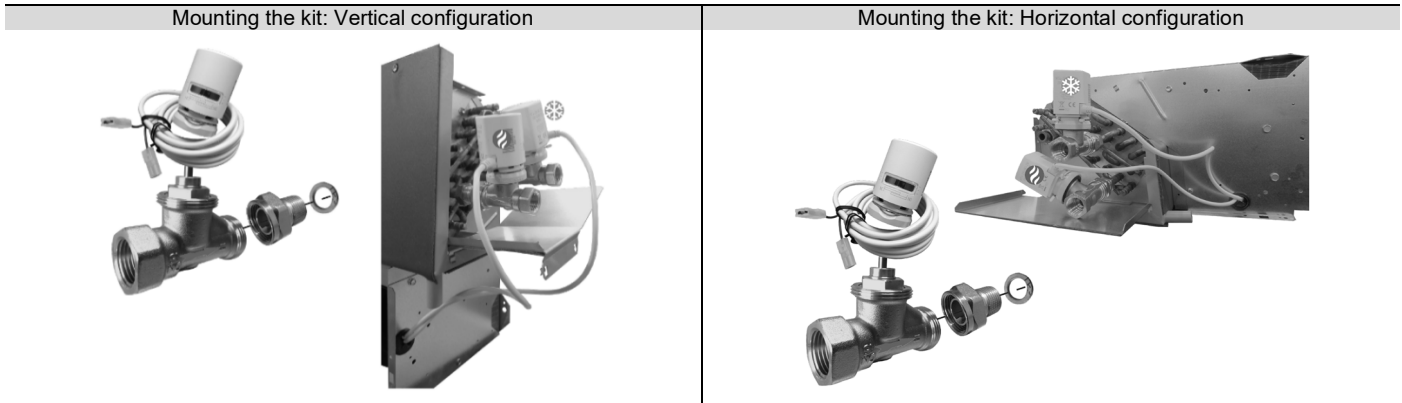


8.3 Kit 2-way valve installation - Models PAW- FC4A-D010* to PAW- FC4A-D060*

The kit 2-way valve includes:

Ref.	Description	Quantity
1	Valve body	2 pcs
2	Actuator	2 pcs
3	Male fitting	2 pcs
4	Gasket	2 pcs
5	Female fitting	1 pc
6	Connecting cable	1 pc
7	Adaptor	1 pc

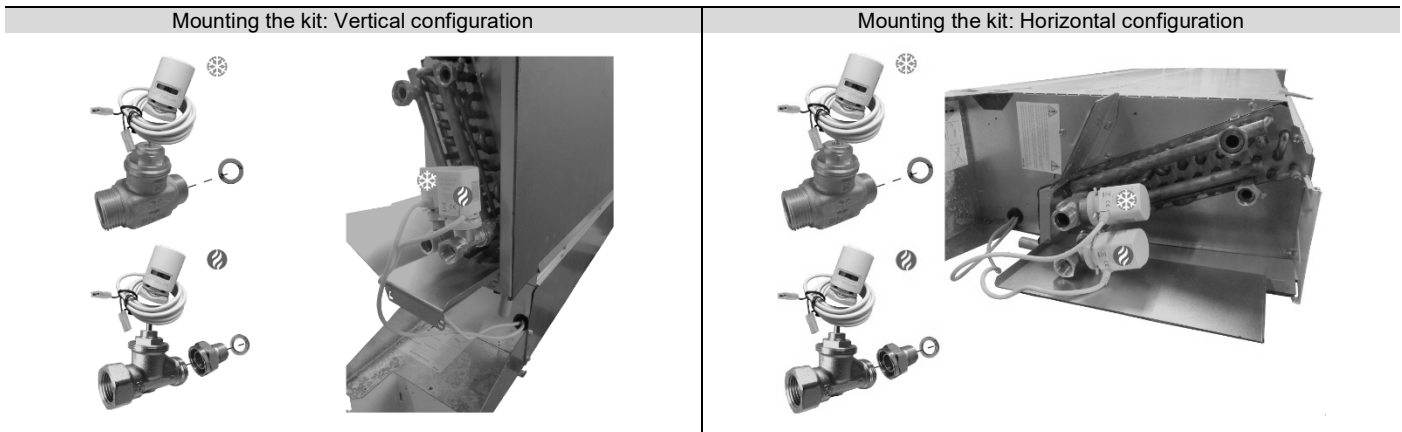
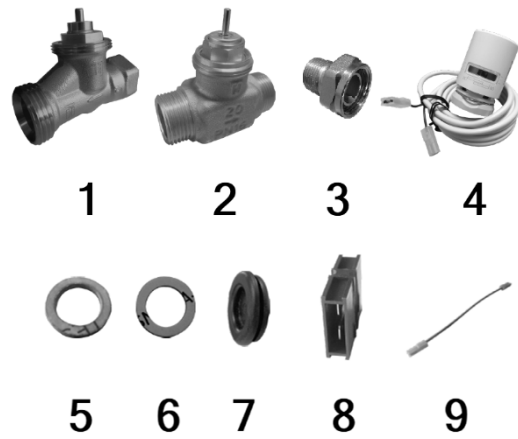




8.4 Kit 2-way valve installation - Models PAW- FC4A-D070* to PAW- FC4A-D080*

The kit 2-way valve includes:

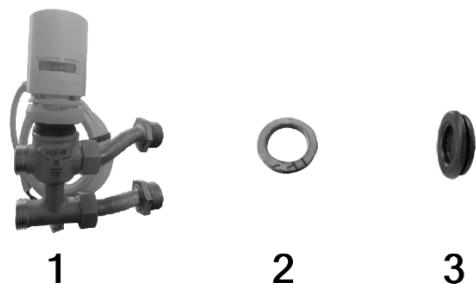
Ref.	Description	Quantity
1	Valve body (H)	1 pc
2	Valve body (C)	1 pc
3	Male fitting	1 pc
4	Actuator	2 pcs
5	Gasket (H)	1 pc
6	Gasket (C)	1 pc
7	Rubber tap	1 pc
8	Adaptor	1 pc
9	Connecting cable	1 pc

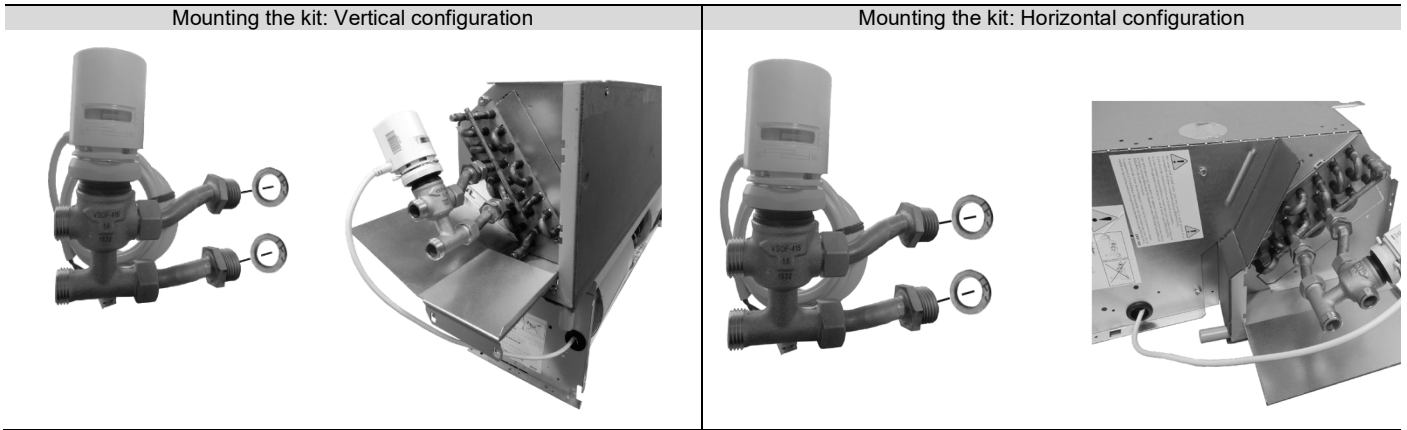


8.5 Kit 3-way valve installation - Models PAW- FC2A-D010* to PAW- FC2A-D060*

The kit 3-way valve includes:

Ref.	Description	Quantity
1	Valve + actuator	1 pc
2	Gasket	2 pcs
3	Rubber tap	1 pc

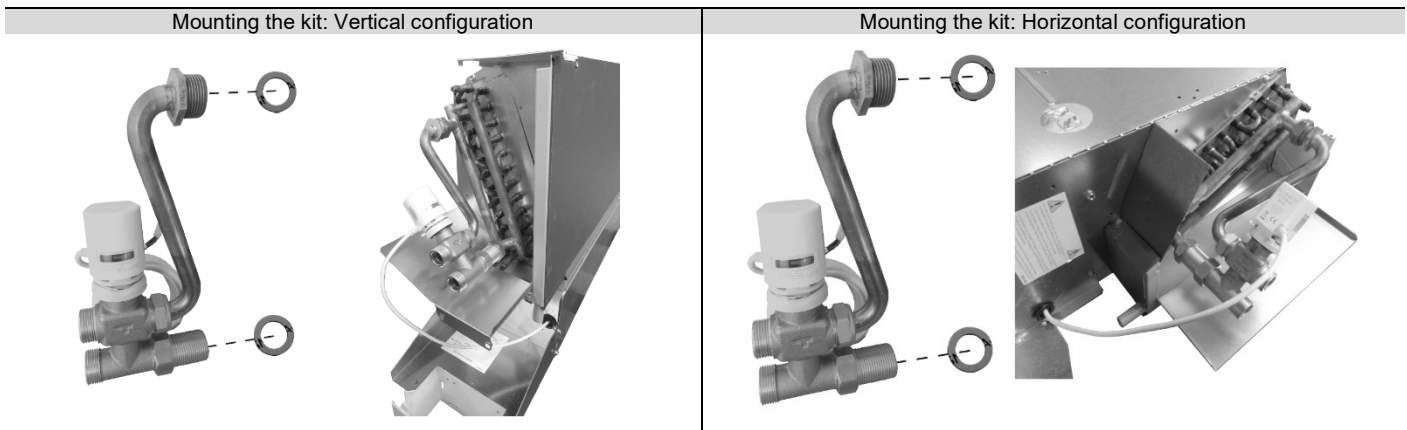




8.6 Kit 3-way valve installation - Models PAW- FC2A-D070* to PAW- FC2A-D080*

The kit 3-way valve includes:

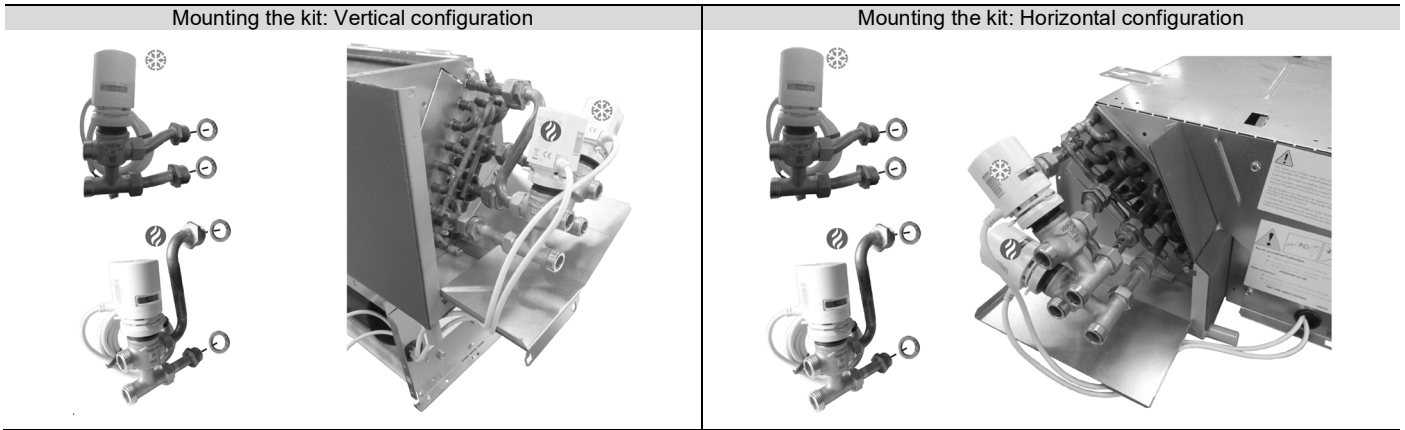
Ref.	Description	Quantity
1	Valve + actuator	1 pc
2	Gasket	2 pcs
3	Rubber tap	1 pc



8.7 Kit 3-way valve installation - Models PAW- FC4A-D010*

The kit 3-way valve includes:

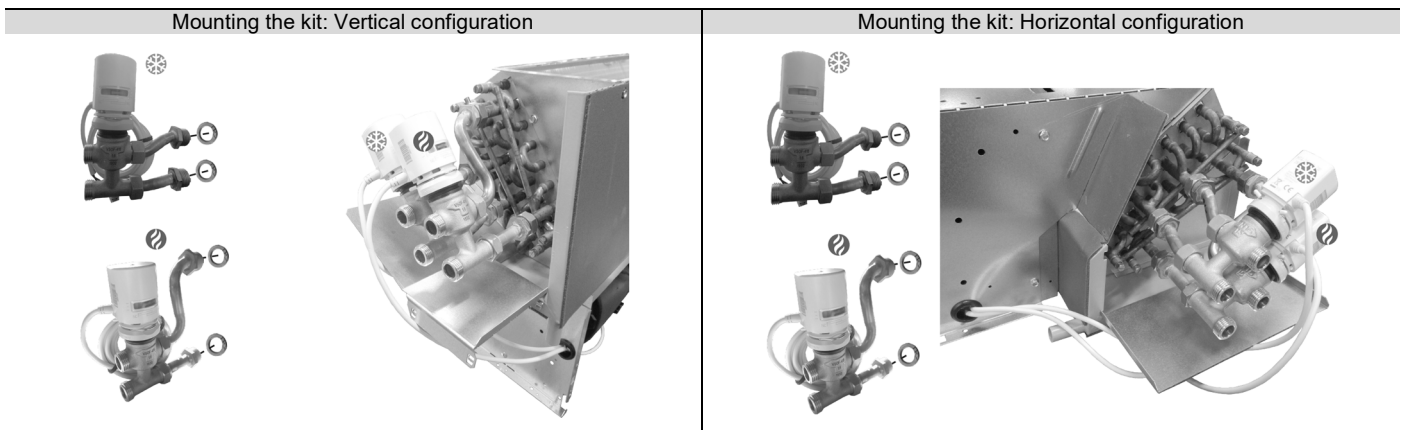
Ref.	Description	Quantity
1	Valve body + actuator (C)	1 pc
2	Valve body + actuator (H)	1 pc
3	Gasket	4 pcs
4	Rubber tap	1 pc
5	Connecting cable	1 pc
6	Adaptor	1 pc



8.8 Kit 3-way valve installation - Models PAW- FC4A-D020* to PAW- FC2A-D060*

The kit 3-way valve includes:

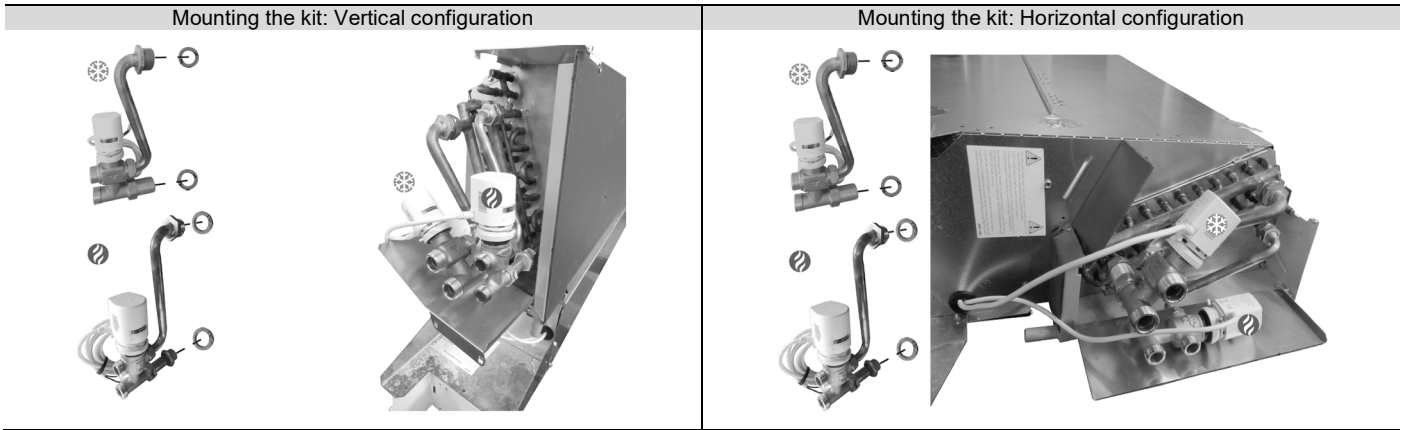
Ref.	Description	Quantity
1	Valve body + actuator (C)	1 pc
2	Valve body + actuator (H)	1 pc
3	Gasket	4 pcs
4	Rubber tap	1 pc
5	Connecting cable	1 pc
6	Adaptor	1 pc



Kit 3-way valve installation - Models PAW- FC4A-D070* to PAW- FC2A-D080*

The kit 3-way valve includes:

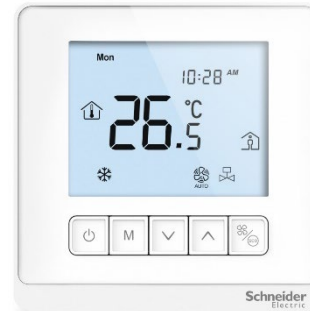
Ref.	Description	Quantity
1	Valve body + actuator (C)	1 pc
2	Valve body + actuator (H)	1 pc
3	Gasket	4 pcs
4	Rubber tap	1 pc
5	Connecting cable	1 pc
6	Adaptor	1 pc



9. 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.

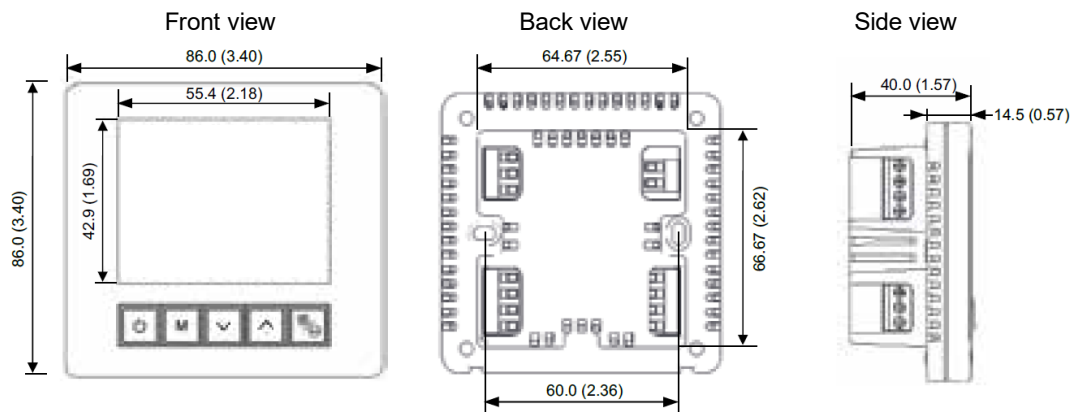
A qualified person is one who has skills and knowledge related to the construction and operation of this electrical equipment and installations, and has received safety training to recognize and avoid the hazards involved.

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.

9.1 Specifications

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

9.2 Dimensions



9.3 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**

9.4 Installation

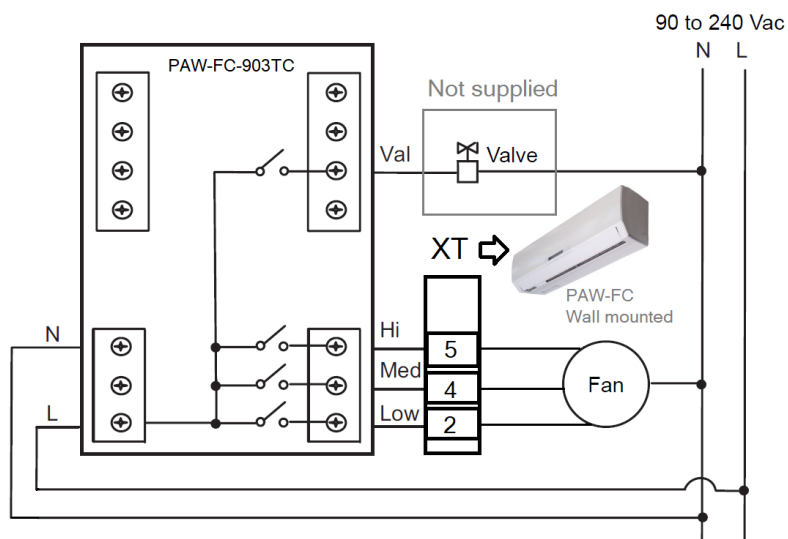
- Install the thermostat about 1.5 m (59") above the floor. In the event that the controller is intended for use by wheelchair users, please refer to local regulations
- Make sure the device is powered off prior to installation/service
- Do not install in locations that can be affected by radiant heat 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

9.5 Mounting

<p>1</p> <p>Insert a 3.5 mm flat head screwdriver along the bevel into the slot. Pry upwards with appropriate force to release the two hooks</p>	<p>2</p> <p>Remove the display from the base module. Carefully remove the wire connections, if required.</p>
<p>3</p> <p>Connect the wires according to the appropriate wiring diagram shown above. Ensure the polarity of the mains supply is correct.</p>	<p>4</p> <p>Mount the base module onto the wall box using the two screws supplied.</p>
<p>5</p> <p>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.</p>	






9.6 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.



9.7 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  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  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  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.

10. 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.



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 serious injury or death.

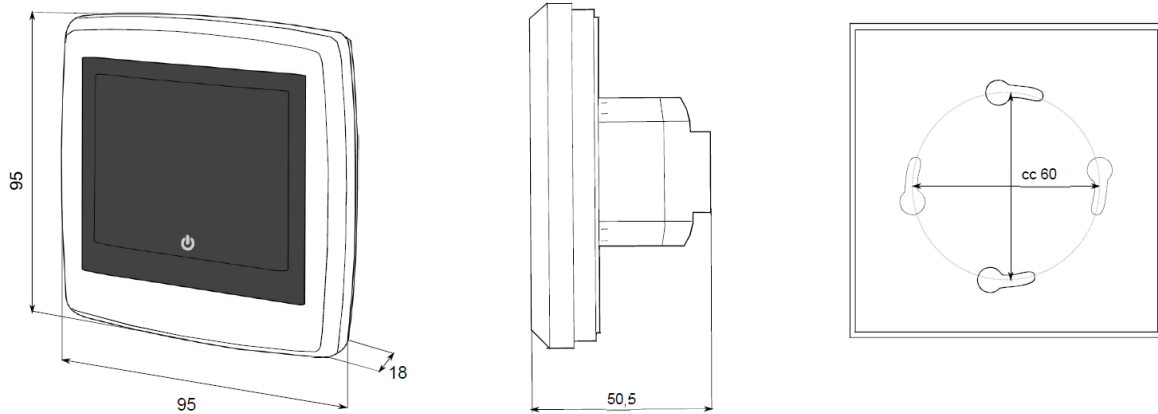
A qualified person is one who has skills and knowledge related to the construction and operation of this electrical equipment and installations, and has received safety training to recognize and avoid the hazards involved.

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.

10.1 Specifications

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

10.2 Dimensions

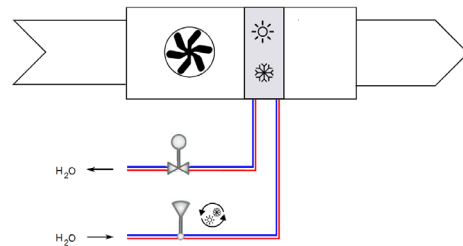


10.3 Functions

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 lifetime of the product.

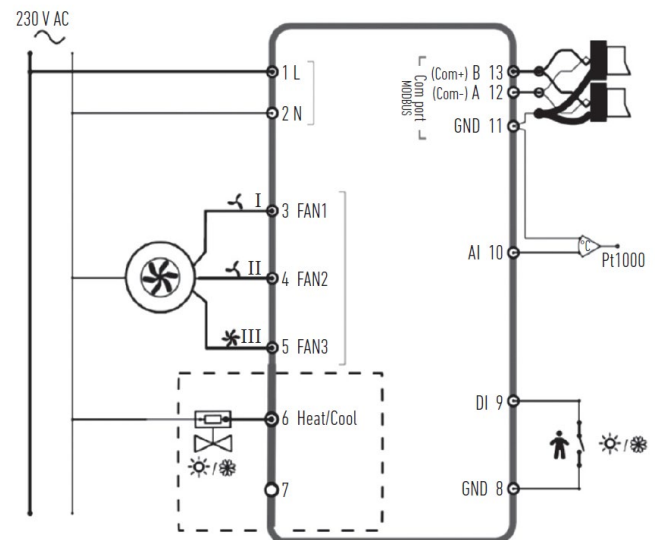
Two pipe system

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.



10.4 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, analogue input	B	Serial communication port Com B, Modbus RTU

10.5 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 (+)
	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.

10.6 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.
5. Setting value is shown and flashes.
6. 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. To leave the parameter menu you can also select “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			

10.7 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 1k Ω and 1,309k Ω)
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

11. Modbus communication protocol PAW-FC-RC1

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.).

11.1 Modbus register types

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

Supported Modbus functions:

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

11.2 Discrete Input Register

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

11.3 Coils Register

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

11.4 Input Register

Variable address	Description	Scale
1	Regin Model number (= 1715)	1
2-3	<i>Not used</i>	
4	Status 0 = Beta status 1 = Released version	1
5-7	<i>Not used</i>	
8	Heating/cooling mode 0 = <i>Not used</i> 1 = Heating 2 = Cooling	1
9	Controller state 0 = Off 1 = <i>Not used</i> 2 = Standby 3 = <i>Not used</i> 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	<i>Not used</i>	
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 temperature sensor is configured for <i>Temp/AI</i> , NaN! otherwise.	10
22	Change-over temperature The value from the external change-over temperature sensor. Shows a value if a change-over sensor is configured for <i>Temp/AI</i> , NaN! otherwise.	10
23-24	<i>Not used</i>	
25	<i>AI Temp Raw</i> Raw value of the terminal (before any filters). Shows NaN! if no sensor is connected.	10
26	<i>Not used</i>	
27	<i>AI Temp</i> Value of the Analog input after filters and scaling. Shows NaN! if no sensor is connected.	10
28	<i>Not used</i>	
29	Calculated setpoint The setpoint for the controller (<i>SPcalc</i>), calculated from the basic setpoint, setpoint adjustment and hysteresis.	10
30-32	<i>Not used</i>	

11.5 Holding Register

Variable address	Description	Unit	Default value	Scale	Min value	Max value
1	Basic setpoint (<i>SPbasic</i>)	°C	200	10	50	500
2	Hysteresis to calculate Heating and Cooling setpoint at <i>Occupied</i> state	°C	10	10	10	400
3	Hysteresis to calculate Heating and Cooling setpoint at <i>Standby</i> 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 command 2 = Fan is controlled by cool demand 3 = Fan is controlled by both heat and cool demand	-	3	1	0	3
7-10	<i>Not used</i>					
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

Variable address	Description	Unit	Default value	Scale	Min value	Max value
12	Change-over mode (0-3) and fan release function (4-7) via heat pump supply sensor 0 = Manual setting in display 1 = Manual Heat 2 = Manual Cool 3 = Automatic via analog or digital input 4 = manual setting in the display via button 5 = 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 state 0 = Off 1 = No Action 2 = Standby 3 = No Action 4 = Occupied 5 = No remote control	-	5	1	0	5
18-29	<i>Not used</i>					
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	<i>Not used</i>					
34	Manual/Auto Fan control, 3-speed fan 0 = 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	<i>Not used</i>					
37	User defined setpoint adjustment (SPadj) 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 (SPadj) increase.	K	30	10	0	200
39	Negative user defined setpoint adjustment. The maximum allowed setpoint adjustment (SPadj) decrease.	K	30	10	0	200
40-43	<i>Not used</i>					
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	<i>Not used</i>					
48	Contact/detector connected to the terminal DI 0 = No contact connected 1-2 = <i>Not used</i> 3 = Presence detector (activate Occupied state) 4 = Change-over contact	-	0	1	0	4
49-52	<i>Not used</i>					
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 measuring and thus correct the temperature reading from Temp if needed.	-	0	10	-100	100

Variable address	Description	Unit	Default value	Scale	Min value	Max value
55	Filter factor for temperature on analog input <i>Temp</i> 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 <i>Active</i> mode 0 = Show the calculated setpoint (<i>SPcalc</i>) 1 = Show the room temperature	-	1	1	0	1
58	Display setting for the <i>Setpoint</i> mode 0 = Show the calculated setpoint (<i>SPcalc</i>) 1 = Show the user defined setpoint adjustment (<i>SPadj</i>)	-	0	1	0	1
59	Intensity or "brightness" of display when in <i>Active</i> or <i>Setpoint</i> mode	%	70	1	0	100
60	Intensity or "brightness" of display when in <i>Idle</i> 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

12. Optional Wired remote controller for EC fan: PAW-FC-907TC

The **PAW-FC-907TC** 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-907TC 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 setpoint.



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.

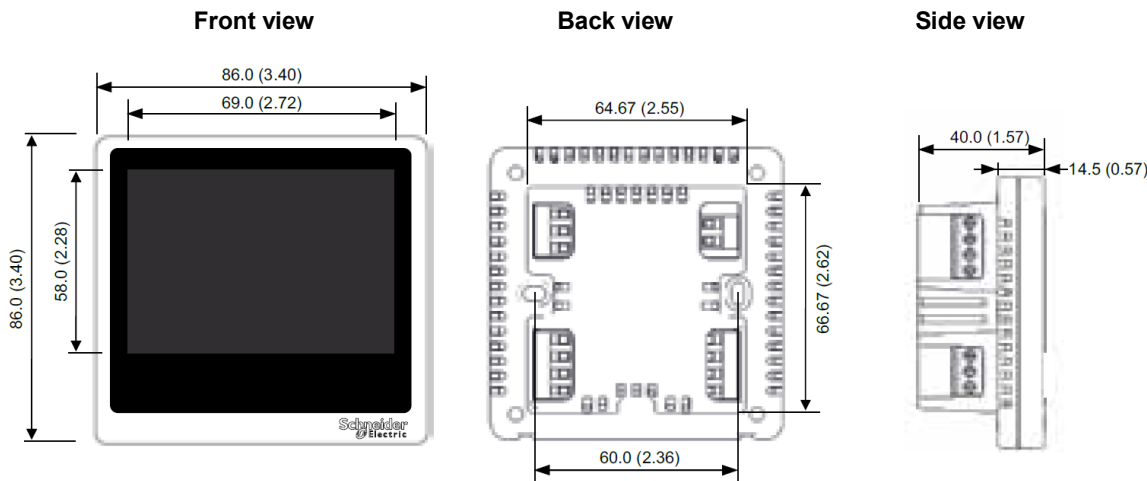
A qualified person is one who has skills and knowledge related to the construction and operation of this electrical equipment and installations, and has received safety training to recognize and avoid the hazards involved.

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.

12.1 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 (3.40" x 3.40" x 0.57")
Set-point range	5 to 35 °C	Wall box	BS wall box, min. 35 mm depth
Display range	0 to 50 °C (shown in 0.5 °C increments)	Hole pitch	60 mm (standard)
Operating temp.	0 to 50 °C	Control pollution degree	Pollution Degree 2
Operating humidity	5 to 95 %RH (non-condensing)	Operation type	Type 1.B
Power consumption	< 1 W	Terminal sizing	Max: 2 x 1.5 mm ² or 1 x 2.5 mm ² conductors
Power supply	90 to 240 Vac, 50/60Hz	Pollution degree	2
Relay & load	Relay rating 5A Load rating 2A resistive, 1A Inductive	Agency approvals	European conformance CE: IEC/EN 60730-1 IEC/EN 60730-2-9
Protection class	IP20		

12.2 Dimensions



12.3 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 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 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 ECO button to cancel Eco mode.

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

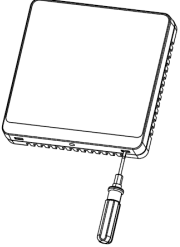
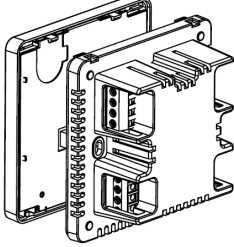
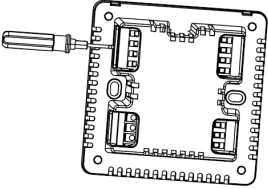
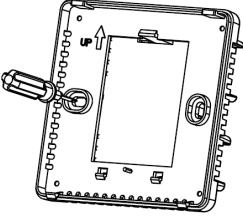

In the event of an operating exception, the thermostat will attempt to command the valve to close and place the device in an inoperative state. The display will indicate the current status with one of five diagnostic messages:

- 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**

12.4 Installation

- Install the thermostat about 1.5 m (59") above the floor. In the event that the controller is intended for use by wheelchair users, please refer to local regulations
- 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

12.5 Mounting

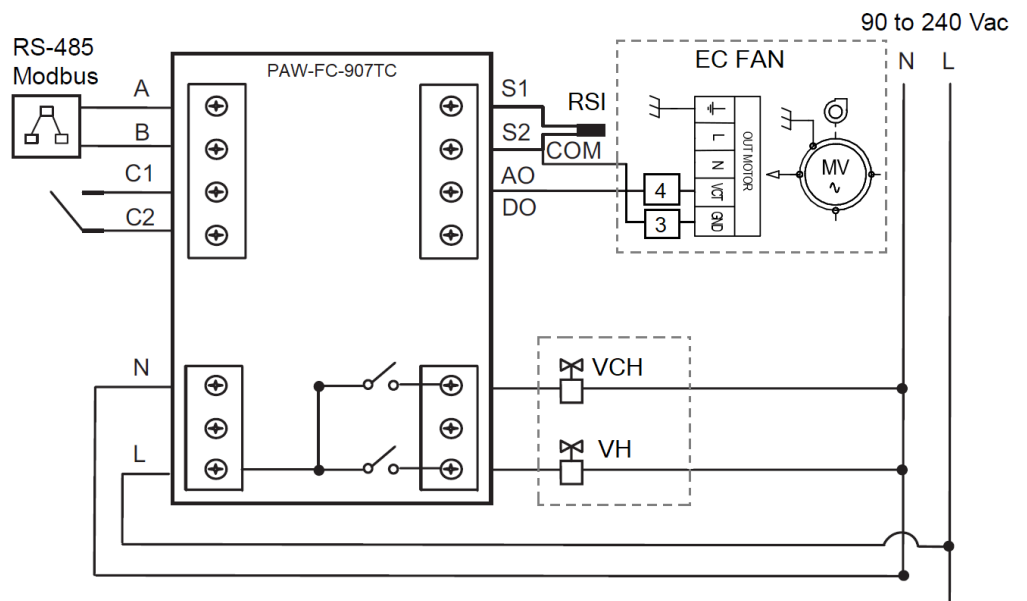
<p>1</p> <p>Insert a 3.5 mm flat head screwdriver along the bevel into the slot. Pry upwards with appropriate force to release the two hooks</p> 	<p>2</p> <p>Remove the display from the base module. Carefully remove the wire connections, if required.</p> 
<p>3</p> <p>Connect the wires according to the appropriate wiring diagram shown above. Ensure the polarity of the mains supply is correct.</p> 	<p>4</p> <p>Mount the base module onto the wall box using the two screws supplied.</p> 
<p>5</p> <p>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.</p> 	

12.6 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.

Legend

- RSI** Remote sensor input
- C1-C2** Energy saving input
- VCH** Cooling valve (4 pipes) or cooling/heating valve (2 Pipes)
- VH** Heating valve (4 pipes)





12.7 Operation instructions

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, press  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 ECO 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 ECO  button.

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  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  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  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.

13. Modbus communication protocol PAW-FC-907TC

The PAW-FC-907TC thermostat is equipped with Modbus communication. Modbus is an open, widespread and well established serial communication protocol used in building automation. The support of Modbus communication allows simple integration of the PAW-FC-907TC with a building management system using standard Modbus serial communication.

These parameters are defined for each thermostat in the **v**. If required, adjust the settings to disable the Modbus

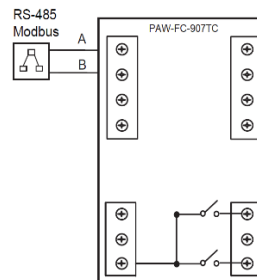
The thermostat communicates as a Modbus RTU slave device over a serial RS-485 connection, allowing for the transfer of real-time data.

The RS-485 communication parameters can be adjusted as follows:

- Baud Rate: 4800, 9600, 19200 and 38400 bps
- Parity check: Odd, Even and None
- Device Modbus Address: 01 to 64

connection. All of these settings can be completed under menu items 12 to 15.

Connection to the RS-485 network is made via dedicated terminals on the back of the thermostat and marked A (+) and B (-).



The following Modbus register types and formats are supported:

Code	Register Type	Data	Format
01	Read coils	Boolean	Binary/digital
02	Read discrete inputs	Boolean	Binary/digital
03	Read holding registers	Word	16-bit unsigned integer
04	Read input registers	Word	16-bit unsigned integer
06	Write single register	Word	16-bit unsigned integer

Parameter Settings Table

Function Code 01

Reg.	Description	Definition
0	Cooling valve (4-pipe)	0 = Off, 1 = On
4	Fan speed status high	0 = Off, 1 = On
5	Fan speed status medium	0 = Off, 1 = On
6	Fan speed status low	0 = Off, 1 = On
7	Heating valve (4-pipe)	0 = Off, 1 = On

Function Code 02

Reg.	Description	Definition
2	Temp sensor, short circuit	0 = OK, 1 = Fault
3	Temp sensor, short circuit	0 = OK, 1 = Fault

Function Code 03/06

Reg.	Description	Definition
2	Thermostat mode	0 = Off, 1 = On, 02=Frost protection*
3	Operation mode	1 = Cool, 2 = Heat, 3 = Ventilation, 4 = Auto
4	Set-point	5 to 35 °C
5	Fan mode	00 = High, 01 = Medium, 02 = Low, 03 = Auto
6	Heating set-point, upper limit	5 to 35 °C
7	Cooling set-point, lower limit	5 to 35 °C
8	ECO mode	0 = Disable 1 = Enable
9	ECO mode, cooling set-point	22 to 32°C
10	ECO mode, heating set-point	10 to 21°C
11	Temperature compensation	-5 to 5°C
12	Setpoint, upper limit	2 to 49.5°C
13	Setpoint, lower limit	0 to 47.5°C
14	Sleep mode	0 = Disable 1 = Enable
15	Low temperature protection	0 = Disable 1 = Enable
16	Fan operation after setting temperature is reached	0 = Fan off 1 = Fan on
17	Power-on state	00 = Power-down memory 01 = No power-down memory 02 = Display on when powered
18	Differential	1 to 3°C
19	ECO mode differential	1 to 5°C
20	Auto dead-band	1 to 3°C
21	Operation mode configuration	0 = Heat only (heat & vent) 1 = Cool only (cool & vent) 2 = Heat and cool (heat, cool & vent) 3 = Auto 4 = 2-pipe mode
Reg.	Description	Definition

22	Auto fan	0 = Disable 1 = Enable
23	Display temperature	00 = Room temp. 01 = Set-point
24	Temperature sensor	00 = Built-in sensor 01 = External sensor
25	Modbus connection	0 - Disable 1 - Enable
26	Modbus address setting	1 to 64
27	Modbus baud rate	00 = 4800 bps 01 = 9600 bps 02 = 19200 bps 03 = 38400 bps
28	Modbus parity check	00 = Odd check 01 = Even check 02 = None
29	RTC clock display	0 = Disable 1 = Enable
30	12/24-hour clock	12 = 12-hour clock 24 = 24-hour clock
31	Auxiliary input close/open	00 = Occupied when short-circuit, unoccupied when open-circuit 01 = Unoccupied when short-circuit, occupied when open-circuit
32	Unoccupied mode, cooling setpoint	22 to 32 °C
33	Unoccupied mode, heating setpoint	10 to 21 °C
34	Unoccupied mode, fan speed	00 = High 01 = Medium 02 = Low
35	Temp. value from connection	00 = Local device 01 = Modbus connection
36	Temp. input	
37	Heating mode KP	1 to 99 s
38	Cooling mode KP	1 to 99 s
39	PID sampling time	1 to 99 s
40	KI	0 to 99 s
41	Span	1 to 99 s
42	Heating valve 2, output voltage	10x voltage (e.g., if voltage is 5.7 V, '57' is displayed)
43	Cooling valve 1, output voltage	10x voltage (e.g., if voltage is 5.7 V, '57' is displayed)
44	Low-speed fan output voltage	Range: 0 V to medium-speed setting
45	Medium-speed fan output voltage	Range: Low-speed setting to high-speed setting
46	High-speed fan output voltage	Range: Medium-speed setting to 10V

*Read only

Function Code 04

Reg.	Description	Definition
0	Actual room temperature	0 to 50 °C

14. Commissioning

14.1 Performing pre-start checks

Once all components have been installed, you can start commissioning by performing the prestart checks.

CHECKING HYDRAULIC INSTALLATION	CHECKING ELECTRICAL INSTALLATION
The water inlet and outlet connections are correctly connected to the unit <input type="checkbox"/>	The electrical installation has been carried out according to the applicable local electrical code and the wiring diagram for the relevant model <input type="checkbox"/>
The hydraulic circuit is filled correctly and the fluid flows freely without any signs of leaks or air bubbles. When ethylene glycol anti-freeze is used, check that the concentration level is correct <input type="checkbox"/>	Correctly sized fuses or a circuit breaker have been installed on the main switchboard <input type="checkbox"/>
The water flow complies with the specifications. If this is not the case, adjust the water flow accordingly. <input type="checkbox"/>	The supply voltages match the voltages specified in the unit wiring diagram <input type="checkbox"/>
The water quality complies with the indicated standards. <input type="checkbox"/>	All cables are properly identified and tightly connected to the unit's terminal board <input type="checkbox"/>
The condensate drain hose is connected to the drain tray and the evacuation pipe and allows liquid to drain freely. <input type="checkbox"/>	All cables and wires are clear of or protected from pipework and sharp edges <input type="checkbox"/>

If any of the above conditions is not met, rectify the issue and repeat the check.

CHECKING AIR DUCT INSTALLATION	PERFORMING A FINAL VISUAL CHECK
If air return and discharge ducts have been installed, ensure that the following conditions are met:	Clearances around unit including outdoor air entry and discharge openings and service accesses are as specified. <input type="checkbox"/>
Air ducts have been attached by flexible connections. <input type="checkbox"/>	Unit is mounted as specified (<i>5.3 Mounting the unit</i>). <input type="checkbox"/>
Flexible connections are secure and detachable for service access. <input type="checkbox"/>	The air filter is clean and correctly installed. <input type="checkbox"/>
Seams and joints are airtight. <input type="checkbox"/>	The air filter is clean and correctly installed. <input type="checkbox"/>
If any of the above conditions is not met, rectify the issue and repeat the check.	No bolts or screws are loose or missing. <input type="checkbox"/>

14.2 Performing a test run

When all pre-start checks and the final visual check have been completed successfully, put the Fan Coil unit into operation and ensure that the following conditions are met:

1. There are no unusual noises or vibrations in the running components, particularly not in the indoor fan drive system.
2. The voltage measured at unit supply terminals matches the specified design voltage.
3. The unit is wired for correct control of unit fan, cooling and heating modes.

If any of the above conditions is not met, rectify the issue and repeat the check.

14.3 Performing the final tasks

When the test run has been completed successfully, perform the following final tasks:

1. If needed, fix the cables and the pipes on the wall with clamping collars.
2. Ensure that the unit is clean and free of remainder installation material.
3. Ensure that all panels and fan guards are in place and secured.
4. Operate the air conditioner in the presence of the user and explain all functions.
5. Show the user how to remove, clean and place back the filters.
6. Hand this manual over to the user and remind him that it must be kept in a safe place.

15. Maintenance



IMPORTANT

The user is responsible for ensuring that the unit is in perfect working order and that the technical installation and minimum annual maintenance operations have been performed by a qualified technician in accordance with the procedures described in this manual.

These units have been designed for minimum maintenance through the use of permanently lubricated components. However, there are operational maintenance requirements that require regular attention to ensure optimum performance. Depending on actual operational constraints and regulatory changes, the installer might recommend increased maintenance operations and more frequent inspections.

15.1 Regular servicing tasks



WARNING

Danger to life from electric shock

The devices are operated with 230-V alternating voltage. Any contact with live conductors can present a danger to life from electric shock.

- Electrical maintenance work must be undertaken by a trained electrician.
- Ensure that you have disconnected the electricity supply before you carry out any maintenance work. Secure the electricity supply against being switched on again unintentionally.

In order to ensure the safe and trouble-free operation of the Fan Coil unit, perform the following maintenance tasks at regular intervals.

General inspection

- Carry out a visual inspection of the complete installation in service.
- Check and ensure the general cleanness of the installation.
- Check the condition of the condensate tray by pulling it out of the casing, and ensure that the condensate evacuation pipe is not blocked.

Air filter



IMPORTANT

The fan coil unit shall have a filter installed in the return air side. When the filter is not fitted inside the unit, the installer shall install a field-supplied filter in the return grill or duct.

Changing the filter is a maintenance operation that should only be performed by qualified personnel.

To avoid clogging of the air filter, it is recommended to clean it regularly.

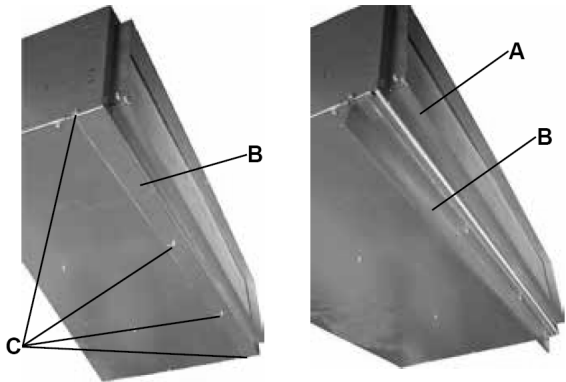
Filter changes are required at regular intervals. The time period between changes will depend upon the specific operating conditions. Some applications such as hotels, where there is a lot of lints from carpeting, will require more frequent filter changes. If light cannot be seen through the filter, when held up to sunlight or a bright light, it should be washed or changed.

Remove and re-mount the air filter according to the following instructions:

Models PAW- FC**-D****

1	On the return air side of the unit, release the "lock washers" (A) on each side before pushing the sliding rails (B) outwards.		
2	Take the filter (C) off and clean or replace it.		
3	Re-mount the filter following the above instructions in reverse order. Make sure that the attachment systems are safely relocked in place after changing the filter.		

Models PAW- FC**-F****

1	Make sure that the filter (A) cannot fall out, once the fixing screws have been unscrewed.	
2	Slightly unscrew the 4 fixing screws (C), to release the filter access panel (B). Make the filter access panel swivel, so that you can reach the filter (A). Take the filter off and clean or replace it.	
3	Re-mount the filter following the above instructions in reverse order. Make sure that the attachment systems are safely relocked in place after changing the filter.	

Condensate tray

Check that the drain hole, evacuation pipe and siphon are not blocked. Eliminate all accumulated dirt and check that no traces of rust are present. If required, clean the tray or wash it with water.

Coil

Check that the fins are not clogged or damaged. To avoid the coils becoming mouldy with an accumulation of tiny impurities, it is recommended that they are cleaned regularly. If necessary, brush the coils with an appropriate tool. Take care not to damage the fins during cleaning.

Fan motor assembly



CAUTION:
Securely isolate the power before starting this operation.
Never clean the unit with by spraying it with water, it can result in electric shock.

The fan motor assembly does not require any particular maintenance. All fan coil units utilize permanently lubricated fan motor bearings or sliding bearing. Adding oil is not necessary. However, during periodic maintenance perform the following steps:

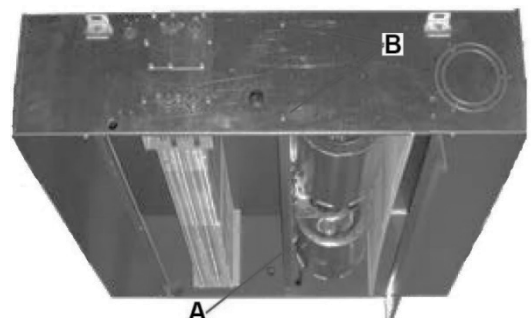
1. Check and ensure that the fan wheel turns freely without friction. If necessary, adjust the clearance between the fan and the housing.
2. Check for signs of wear on the fan bearings.
3. Check the condition of the fan and the fan motor.



IMPORTANT
In the event of the fan motor overload protection device engaging, wait for the automatic protection to reset itself and seek out the cause of the protection device being triggered.

To remove the fan motor assembly, perform the following steps:

1. Remove the bottom panel as described above for the maintenance of the condensate tray.
2. Disconnect the fan motor assembly power supply starting from the electric box.
3. Make sure that the fan motor assembly (A) cannot fall out, once the fixing screws have been unscrewed.
4. Unscrew the four fan motor assembly fixing screws (B) - (2 on each side of the unit) and take out the fan motor assembly.
5. Re-mount the fan motor assembly following the above instructions in reverse order.



Electrical equipment



CAUTION:

Securely isolate the power before performing the following operations.

1. Check that the main power supply cable is not damaged or altered in such a way as to affect the insulation.
2. Check the tightness of the screw terminals.
3. Check the general tightness of all cable connections.
4. Perform a visual check of the condition of the contacts.
5. Inspect the relay contact surfaces and the contactors and replace them if necessary.
6. Check nominal current draw and the condition of the fuses and replace them if necessary.
7. Clean the control box with compressed air to remove any build-ups of dust or dirt.
8. Ensure that the earth grounding connection is intact.

Water circuit

Once a year, drain the water pipes and check for scale formation. De-scale the pipes if required.

Ensure that the hydraulic circuit is filled correctly and that the fluid circulates freely without any sign of leaks or air bubbles.

APPENDIX

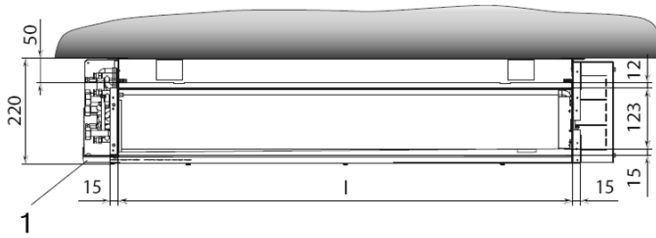
———— Contents ————

Dimensions.....	44
Hydraulic connections	46

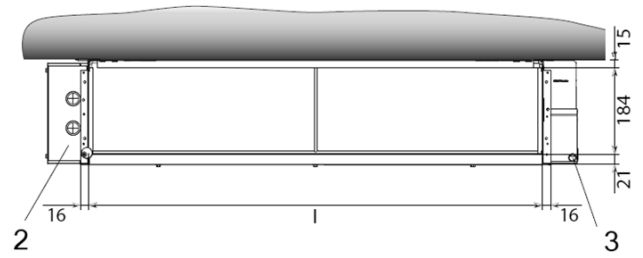
Dimensions

Unit dimensions Models PAW- FC**-D010* to PAW- FC**-D080*

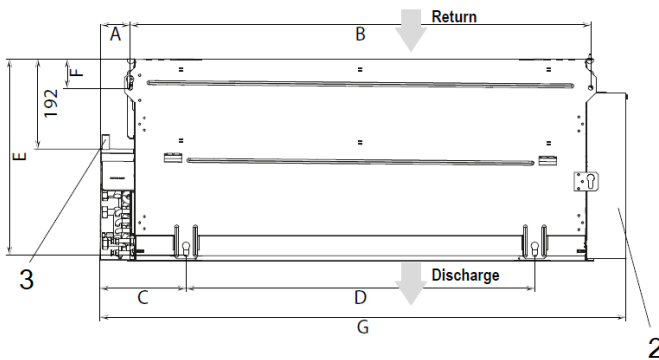
Front view (air discharge side)



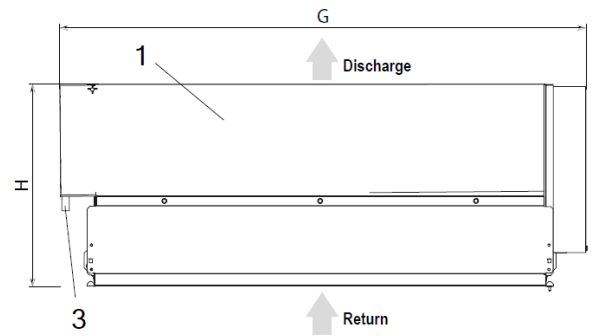
Rear view (air return side)



Top view



Bottom view



Note: as an example, schematic shows a 4-pipe D050 model with left-hand (L) service side configuration in horizontal installation orientation.

1 Condensate drain pan

2 Electrical side protection cap

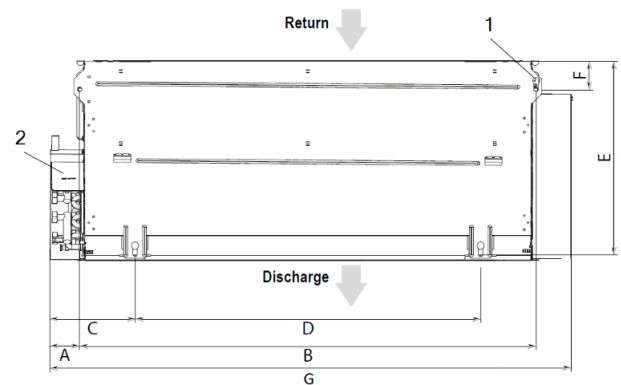
3 Condensate outlet \varnothing ext. 16 mm

Dimension Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]
PAW- FC**-D010*	66.5	428	185.5	189	415.5	61	569.9	430	407
PAW- FC**-D020*	66.5	428	185.5	189	415.5	61	569.9	430	407
PAW- FC**-D030*	64	613	184	374	415.5	61	753	430	592
PAW- FC**-D040*	64	798	184	559	415.5	61	938	430	777
PAW- FC**-D050*	63	983	183	744	415.5	61	1122	430	962
PAW- FC**-D060*	63	1168	183	929	415.5	61	1307	430	1147
PAW- FC**-D070*	63	983	195	744	519	88	1121	530	962
PAW- FC**-D080*	69	1168	195	929	519	86	1316	530	1147

Mounting lug dimensions Models PAW- FC**-D010* to PAW- FC**-D080*

1 M8 fixing screws [4 x 8 mm]

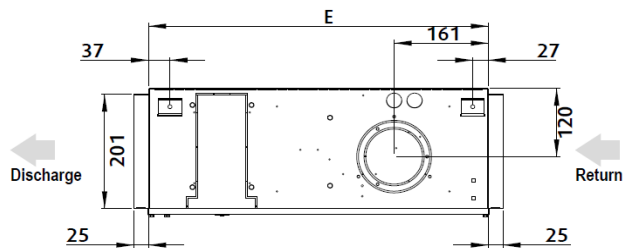
2 Condensate drain pan



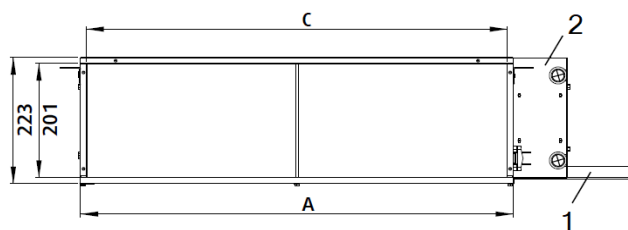
Dimension Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]
PAW- FC**-D010*	66.5	428	185.5	189	415.5	61	569.9
PAW- FC**-D020*	66.5	428	185.5	189	415.5	61	569.9
PAW- FC**-D030*	64	613	184	374	415.5	61	753
PAW- FC**-D040*	64	798	184	559	415.5	61	938
PAW- FC**-D050*	63	983	183	744	415.5	61	1122
PAW- FC**-D060*	63	1168	183	929	415.5	61	1307
PAW- FC**-D070*	63	983	195	744	519	88	1121
PAW- FC**-D080*	69	1168	195	929	519	86	1316

Unit dimensions Model PAW- FC-F040***

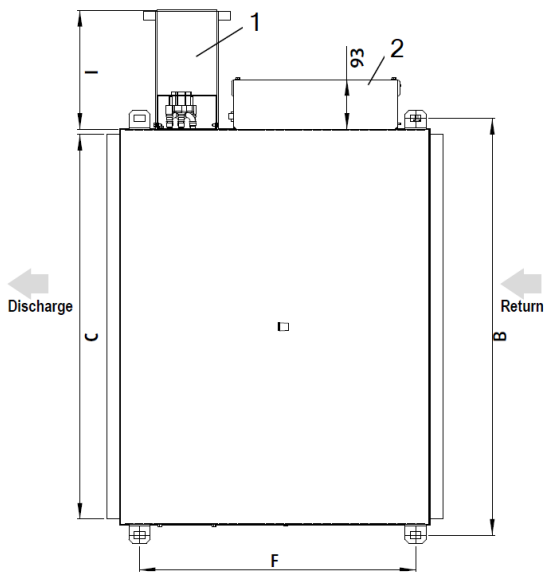
Side view (right)



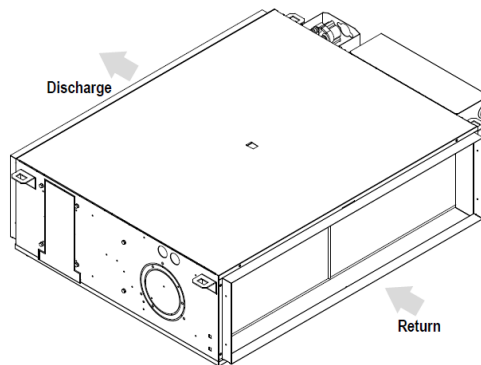
Rear view (air return side)



Top view



3D view



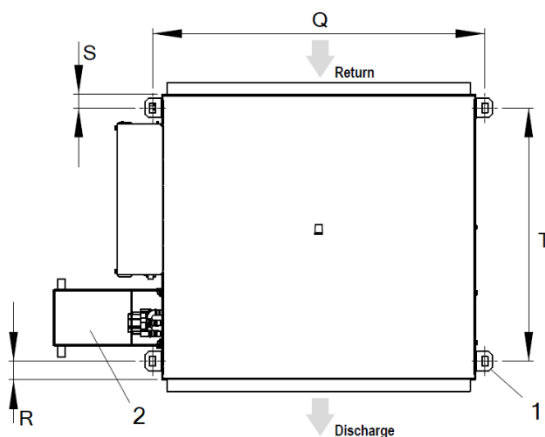
1 Condensate drain pan

2 Electrical side protection cap

Dimension	A	B	C	E	F	I
Model	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
PAW- FC**-F040*	1140	1180	1120	603	540	270

Mounting lug dimensions Model PAW- FC-F040***

- 1 M8 fixing screws [4 x 8 mm]
- 2 Condensate drain pan

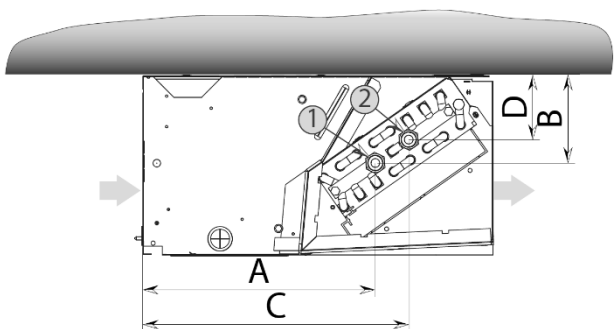


Dimension	Q	R	S	T
Model	[mm]	[mm]	[mm]	[mm]
PAW- FC**-F040*	1180	37	27	540

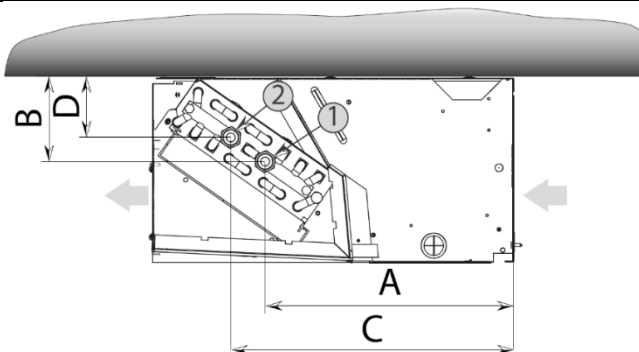
Hydraulic connections

Hydraulic connections Models PAW- FC2*-D010* to PAW- FC2*-D080*

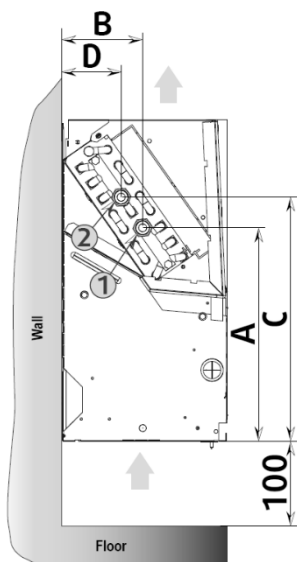
Left-hand service side
2-pipe configuration, horizontal installation



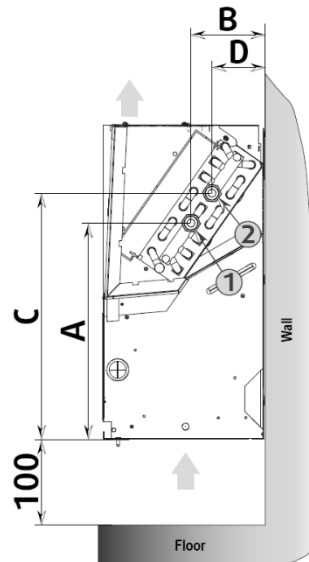
Right-hand service side
2-pipe configuration, horizontal installation



Left-hand service side
2-pipe configuration, vertical installation



Right-hand service side
2-pipe configuration, vertical installation



1 Water inlet C/H

2 Water outlet C/H

Left-hand service side

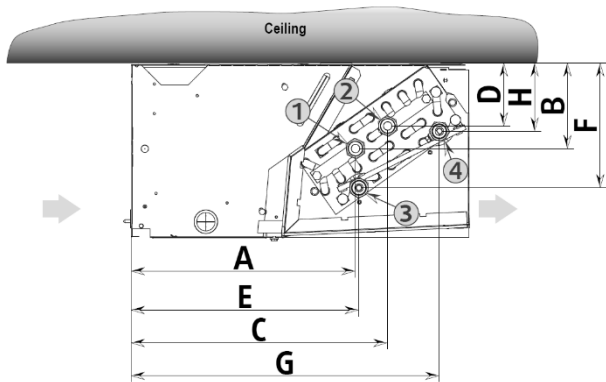
Dimension Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]
PAW- FC**-D010L	285	107	326	78	277	160	370	74
PAW- FC**-D020L	285	107	326	78	289	157	392	85
PAW- FC**-D030L	285	107	326	78	289	157	392	85
PAW- FC**-D040L	285	107	326	78	289	157	392	85
PAW- FC**-D050L	285	107	326	78	289	157	392	85
PAW- FC**-D060L	285	107	326	78	289	157	392	85
PAW- FC**-D070L	265	106	451	31	287	167	465	72
PAW- FC**-D080L	265	129	442	34	279	170	464	95

Right-hand service side

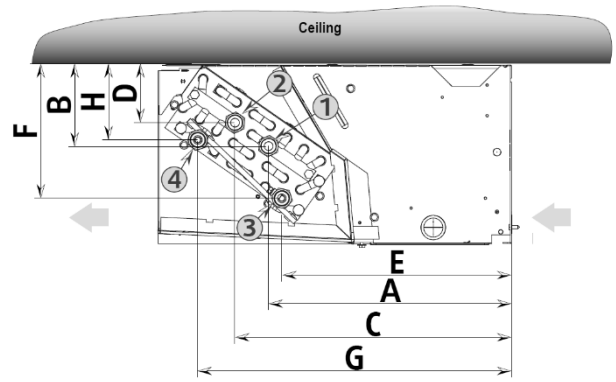
Dimension Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]
PAW- FC**-D010R	295	100	337	71	277	139	400	53
PAW- FC**-D020R	295	100	337	71	280	164	382	92
PAW- FC**-D030R	295	100	337	71	280	164	382	92
PAW- FC**-D040R	295	100	337	71	280	164	382	92
PAW- FC**-D050R	295	100	337	71	280	164	382	92
PAW- FC**-D060R	295	100	337	71	280	164	382	92
PAW- FC**-D070R	253	111	253	36	272	150	465	95
PAW- FC**-D080R	253	107	457	52	289	166	475	91

Hydraulic connections Models PAW- FC4*-D010* to PAW- FC4*-D080*

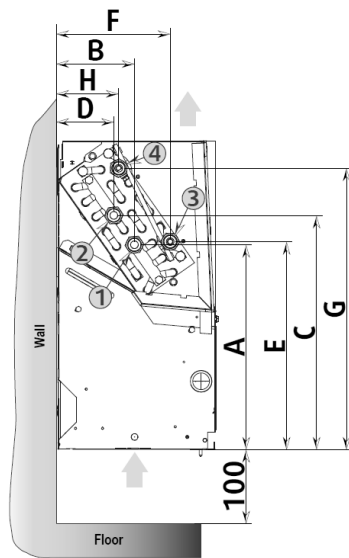
Left-hand service side
4-pipe configuration, horizontal installation



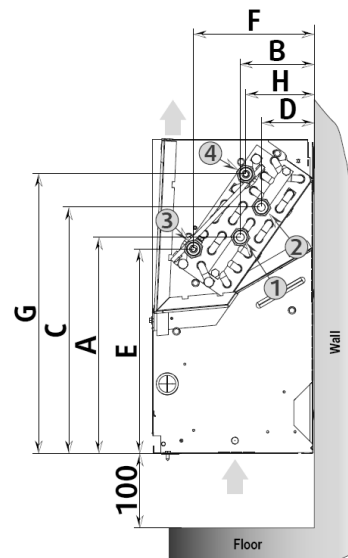
Right-hand service side
4-pipe configuration, horizontal installation



Left-hand service side
4-pipe configuration, vertical installation



Right-hand service side
4-pipe configuration, vertical installation



- 1** Water inlet (Cooling) **2** Water outlet (Cooling) **3** Water inlet (Heating) **4** Water outlet (Heating)

Left-hand service side

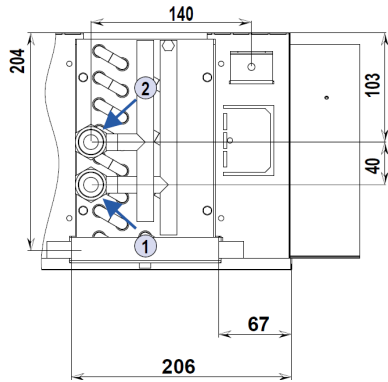
Dimension Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]
PAW- FC**-D010L	285	107	326	78	277	160	370	74
PAW- FC**-D020L	285	107	326	78	289	157	392	85
PAW- FC**-D030L	285	107	326	78	289	157	392	85
PAW- FC**-D040L	285	107	326	78	289	157	392	85
PAW- FC**-D050L	285	107	326	78	289	157	392	85
PAW- FC**-D060L	285	107	326	78	289	157	392	85
PAW- FC**-D070L	265	106	451	31	287	167	465	72
PAW- FC**-D080L	265	129	442	34	279	170	464	95

Right-hand service side

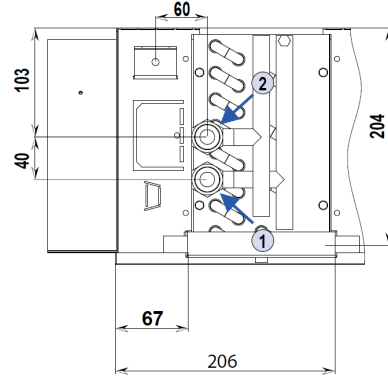
Dimension Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]
PAW- FC**-D010R	295	100	337	71	277	139	400	53
PAW- FC**-D020R	295	100	337	71	280	164	382	92
PAW- FC**-D030R	295	100	337	71	280	164	382	92
PAW- FC**-D040R	295	100	337	71	280	164	382	92
PAW- FC**-D050R	295	100	337	71	280	164	382	92
PAW- FC**-D060R	295	100	337	71	280	164	382	92
PAW- FC**-D070R	253	111	253	36	272	150	465	95
PAW- FC**-D080R	263	107	457	52	289	166	475	91

Hydraulic connections Model PAW- FC2*-F040*

Left-hand service side
2-pipe configuration, horizontal installation

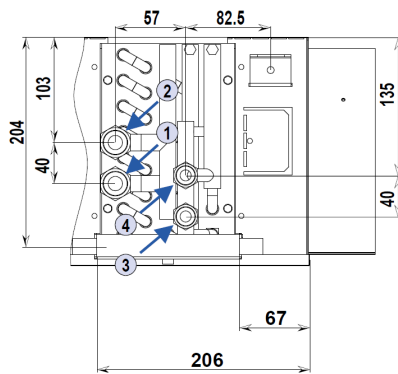


Right-hand service side
2-pipe configuration, horizontal installation

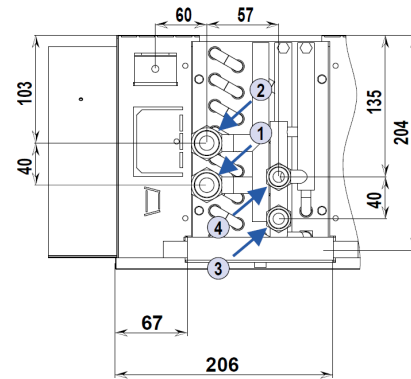


- 1** Water inlet C/H **2** Water outlet C/H

Left-hand service side
4-pipe configuration, vertical installation



Right-hand service side
4-pipe configuration, vertical installation



- 1** Water inlet (Cooling) **2** Water outlet (Cooling) **3** Water inlet (Heating) **4** Water outlet (Heating)

Water coil volume - Models PAW- FC4*-D010* to PAW- FC4*-D080* - Model PAW- FC2*-F040*

Model			D010	D020	D030	D040	D050	D060	D070	D080	F040
2-pipe configuration	-	L	0.41	0.61	0.89	1.17	1.45	1.73	2.19	2.60	1.50
	Cooling	L	0.41	0.61	0.89	1.17	1.45	1.73	2.19	2.60	1.80
4-pipe configuration	Heating	L	0.20	0.20	0.30	0.39	0.48	0.58	0.73	0.92	0.45

Notes

A series of horizontal dotted lines for taking notes.

Notes

A series of horizontal dotted lines for taking notes, consisting of 40 lines.

Notes

A series of horizontal dotted lines providing a guide for writing notes.

**Panasonic Appliances Air-Conditioning Europe a
division of Panasonic Marketing Europe GmbH**
Hagenauer Strasse 43, 65203 Wiesbaden, Germany

www.aircon.panasonic.eu

Panasonic. **IMM_PAW-FC_DUT_EN_06.21**
June 2021