



# SARMAAFARIN

Cassette Fan Coil Units

4-Way Ceiling Cassette Compact Type

50Hz

AEROACOUSTIC



Certificate No.: 9190.C308

FORM SSI - 42GT (1402)

**42GT**  
**300-1200**

(2.5 to 15.15 Nominal KW)

## Features/Benefits:

- The SSI 42GT fan coil offers a great air conditioning solution for a wide range of residential and commercial applications.
- This Technology delivers air in uniform and three dimensional ways to provide proper thermal comfort across the occupied spaces.
- It is a compact unit only 295mm in height. The four suspension brackets of the unit adopt the T shape opening; it can be installed up and fixed easily.
- Four-way air distribution gives individual comfort while for localized control each diffuser may be adjusted or even shut down completely.
- The unique design of centrifugal fan ensures the quiet running of the unit. This thoroughly eliminates the bothering throttle noise inside the room.
- High-performance condensate drain pump encased in a special sound insulating material removes condensate quietly and fast.
- Return air enters the cassette unit through a large grille, cleaned by an easily removable, washable filter and then keep the room air fresh through constant circulation.
- The Special design of the diffuser ensures rapid blending of the supply and room air. Conditioned air is directed along the ceiling then evenly distributed throughout the room.

## CASING

Made from galvanized steel with internal thermal insulation with polyolefin (PO) foam (class M1) and external anti-condensate lining.

## CONTROL PANEL

Made of an external box with the control electronic board with an easily accessible terminal board.

## FAN ASSEMBLY

The fan assembly, which is mounted on anti-vibrating supports, is extremely silent. The radial fan has been designed to optimize performance, using wing profile blades with a shape that reduces turbulence, increasing efficiency and reducing noise. The single air inlet radial fan is connected to a 5 speed electric motor with single phase 230V/50Hz supply, class B insulation. The units are supplied with 3 standard speeds connected and it is

possible to change them on site if necessary.

## COIL

The coil made of copper tubes with bonded aluminum fins for maximum transfer contact. The coil has 1, 2 or 3 rows for 2 (the heating row is on the inside part of the coil). The heat exchanger is not suitable for use in corrosive atmosphere or in environments where aluminum may be subject to corrosion.

## CONDENSATE COLLECTION TRAY

High density ABS polystyrene foam condensate tray, shaped in order to optimize the air diffusion, fire retardant rating B1 to DIN 4102.

## AIR FILTER

Synthetic washable filter, easily removable.

## CONDENSATE PUMP

Float switch centrifugal pump with 650 mm of maximum head, integral to the unit and wired to the control panel on the outside of the casing.

## AIR DISTRIBUTION CONNECTION

Two air outlets are provided on the side of the unit for connection to separate supply air outlets. They can be used to supply air from the fan coil unit to distant areas of a room or even to a different room. The total air flow does not change.

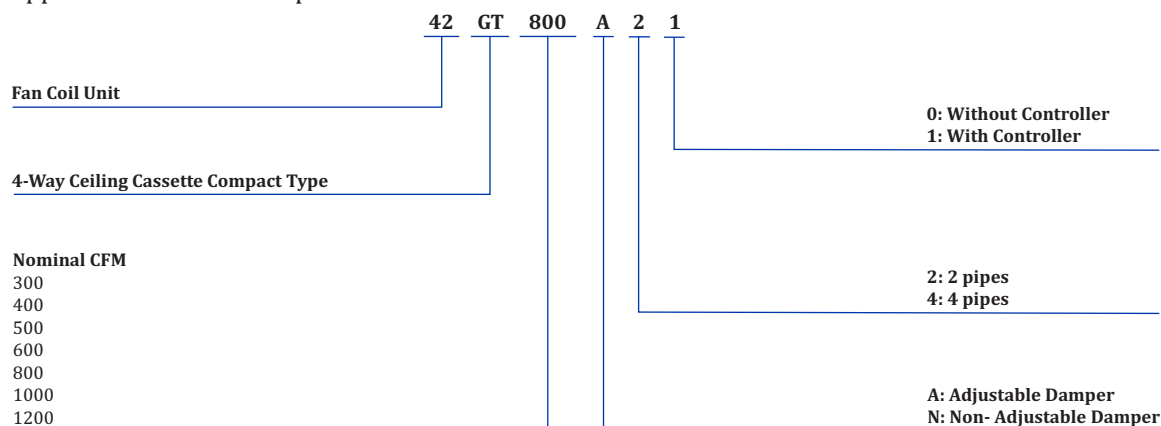
**Note:** All air ducts must be insulated in order to avoid condensation.

## FRESH AIR CONNECTION (OPTION)

The cassette is fitted with inlets for fresh air to be mixed with the return air inside the unit. The fresh air flow is limited to 20% of the total fan coil air flow at medium speed. The units feature fresh air inlets on three corners (no inlets on the fourth corner because of the condensate pump inside the unit). The fresh air inlets are designed for the insertion of standard 110×55 mm rectangular ducts.

The air duct is connected quickly and easily. After removing the blank and the insulation inside the unit, the mounting plate is rolled back and the air duct with its V-shaped section must be pushed into the unit. The duct is then fixed to the mounting plate.

**Note:** the fresh air must be filtered.



## 4-Way (2-Pipe) Cassette Fan Coil

Model			300	400	500	600	800	1000	1200
Performance Data	Nominal Air Volume	m <sup>3</sup> /hr	510	680	850	1020	1360	1700	2040
	Cooling Capacity	kW	2.8	3.2	3.9	5	8.1	9.4	11
	Heating Capacity	kW	3.6	4.1	4.9	5.9	9.1	10.4	12
	Air Flow	High	cfm	320	374	461	580	818	969
		Medium	cfm	280	320	374	461	729	818
		Low	cfm	280	280	320	374	622	729
	Power Input	W	28	38	53	60	75	98	143
	Eurovent Class	-	C					D	
	Sound Pressure Level	dB(A)	41.5	45.3	49	51	42.3	47.1	51
	Water Flow	Lit/Min	6.6	7.6	9.3	11.92	21.25	23.1	27.6
Physical Data	Pressure Drop (Cooling)	kPa	2.5	3.2	4.7	7.1	21.9	25.6	35.4
	Pressure Drop (Heating)	kPa	1.9	2.5	3.8	5.9	19	22.2	30.9
	Coil Row	-	2						
	Water Connector Diameter	inch	3/4"						
	Drain Connector Diameter	inch	5/8"						
	Dimension Grille	mm	650×650				950×950		
	Dimension Unit	mm	572×572×295				825×825×304		
	Weight Grille	kg	1.8				3.5		
	Weight Unit	kg	22				41		

## 4-Way (4-Pipe) Cassette Fan Coil

Model			300	400	500	600	800	1000	1200
Performance Data	Nominal Air Volume	m <sup>3</sup> /hr	510	680	850	1020	1360	1700	2040
	Cooling Capacity	kW	2.4	2.8	3.3	4.1	6.2	7.1	8.2
	Heating Capacity	kW	2.2	2.9	3.3	5.6	7.3	8.6	9.8
	Air Flow	High	cfm	320	374	461	580	818	969
		Medium	cfm	280	320	374	461	729	818
		Low	cfm	280	280	320	374	622	729
	Power Input	W	28	38	53	60	75	98	143
	Eurovent Class	-	C				D		C
	Sound Pressure Level	dB(A)	41.5	45.3	49	51	42.3	47.1	51
	Water Flow	Lit/Min	6.3	7.6	9.7	14.5	19.72	23.1	28.3
Physical Data	Pressure Drop (Cooling)	kPa	1.0	1.4	2.2	3.6	12.4	14.6	20.4
	Pressure Drop (Heating)	kPa	0.5	0.8	1.5	2.6	10.0	11.9	16.8
	Coil Row	-	2						
	Water Connector	inch	3/4"						
	Drain Connector	inch	5/8"						
	Dimension Grille	mm	650×650				950×950		
	Dimension Unit	mm	572×572×295				825×825×304		
	Weight Grille	kg	1.8				3.5		
	Weight Unit	kg	22				41		

Based on AHRI 440/441 conditions:

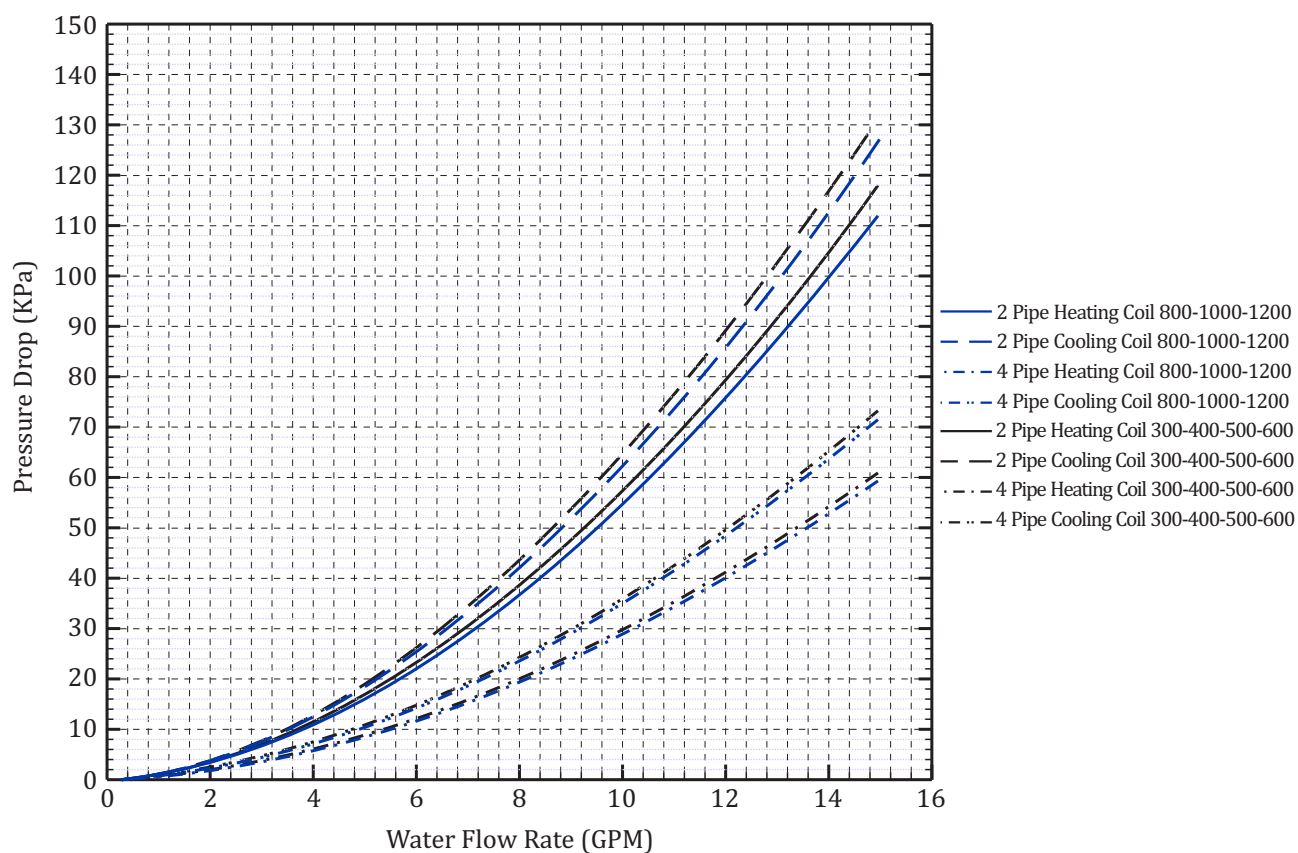
-Cooling Conditions: 27°C DB/19°C WB entering air temperature, entering/leaving water temperature 7/12 °C.

- Heating Conditions: 20°C entering air temperature, 50°C entering water temperature, the same water flow as the cooling conditions.

Water Circuit	
Maximum water-side pressure	1400 kPa
Minimum entering water temperature	4°C
Maximum entering water temperature	80°C
Maximum temperature	5°C
Maximum temperature	89.6
Nominal single-phase voltage	220V-50 Hz
Operating voltage limits	198-264 V

**Note:**

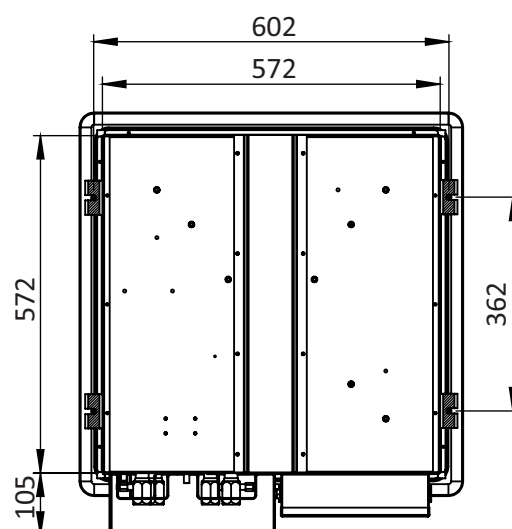
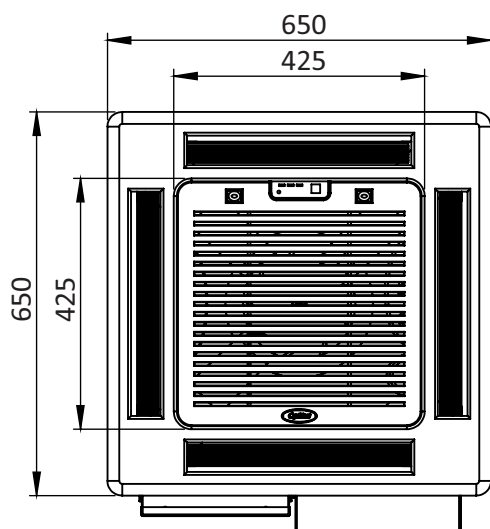
When the room temperature drops to 0oC, it is advisable to empty the water circuit to avoid damage caused by ice.



# DIMENSIONS

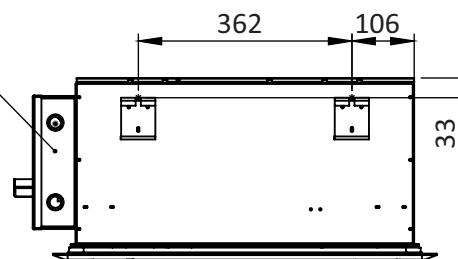
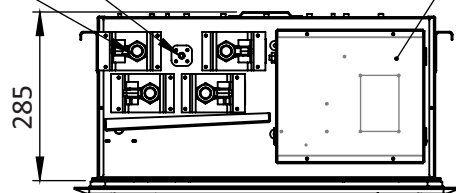


Model
42GT-300
42GT-400
42GT-500
42GT-600

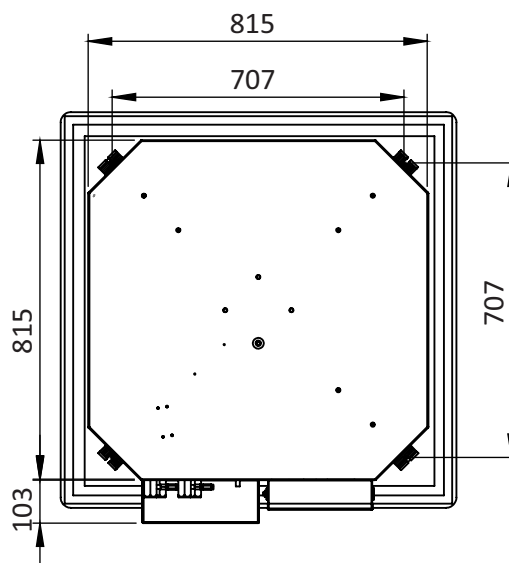
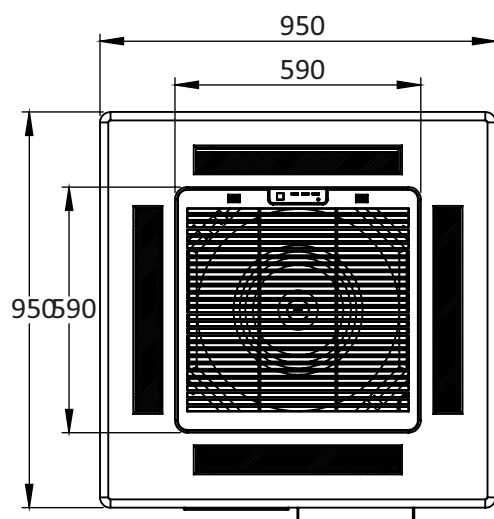


Drain 1/2" OD  
Connection 3/4"

Electrical Box

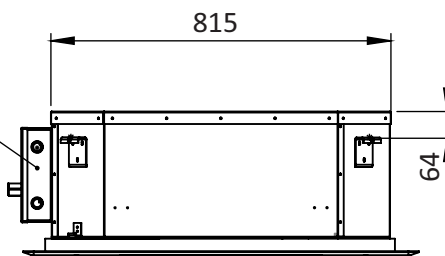
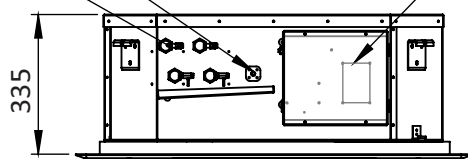


Model
42GT-800
42GT-1000
42GT-1200



Drain 1/2" OD  
Connection 3/4"

Electrical Box





## Fan Coil Cassette Installation, Use and Maintenance Manual

### GENERAL WARNINGS

PLEASE READ THIS USER INFORMATION MANUAL CAREFULLY FOR YOUR OWN SAFETY AND FOR THE PROTECTION OF THE CASSETTE FANCOIL UNIT FROM DAMAGE.

This User Information Manual addresses the following:

- Handling, Storage, Installation, Maintenance, Operation, Electrical Work, Refrigeration Work
- All personnel must have been trained or given appropriate instructions.
- Personnel responsibilities must be defined clearly!
- All electrical work must be carried out by or under the supervision of qualified electrical installers.
- All piping work must be carried out by qualified installers or by personnel who have been given appropriate instructions.

Assembly, disassembly, installation, electrical work, commissioning, repair and maintenance of the Cassette coffered-ceiling fancoil unit must be in accordance with all applicable health and safety laws, rules and regulations, relevant codes and standards and the latest technology.

They may include rules, regulations, codes and standards applicable to refrigeration systems, pressure vessels, electrical installations and lifting tackle.

Wiring diagrams in this User Information Manual do not address protective grounding or other electrical protection which will be required under local rules, regulations, codes or standards or by the local electricity supplier.

### FUNDAMENTAL SAFETY RULES

#### In general:

Installation and electrical work and repairs must be carried out by qualified skilled personnel who have adequate training and experience and are familiar with:

- Safety and health rules and regulations
- Rules and regulations applicable to the prevention of accidents
- Applicable codes and standards

Such skilled workers must be able to understand their work and to identify and avoid potential risks.

Transportation, handling, commissioning and maintenance may be carried out by skilled persons or persons who have been given the necessary training and instructions with respect to their work and the risks implied by unsafe working.

#### For the installation:

**CAUTION:** Remove the fan lock before installation

Install a safety switch to turn off current to the appliance in an easily accessible position near the unit or units. Make sure the unit is earthen.

Do not install in explosive, corrosive or damp environments, outdoors or in very dusty rooms. The space above the suspended ceiling must be dry and adequately protected against moisture and the ingress of

humidity.

If the installation is fitted with an external air intake damper, make sure the coil tubes are not damaged by temperatures below freezing point.

During installation, for safety reasons, observe the following precautions:

- Always use work gloves.
- The unit must always be handled by two people.
- Fancoil units should only be carried at suitable points. When carrying fancoil unit gloves should be worn for safety reasons.
- Lifting tackle and gear must have sufficient capacity.
- Defective lifting gear and tackle must not be used.
- Ropes, belts and similar lifting tackle must not be knotted or come into contact with sharp edges.
- Fork-lift trucks, elevating-platform trucks and cranes must have sufficient capacity.
- Loads must not be lifted over persons.

Furthermore, the following is recommended:

- Do not remove the safety labels inside the appliance.
- If you cannot read the labels, ask for replacements.
- Do not throw packaging material away or leave it within reach of children as it may represent a hazard.

#### And:

- The operating pressure and the operating temperature must never exceed the rated pressure and temperature (see label).
- Air intakes and air discharge openings must never be obstructed or blocked!

#### For maintenance and repairs:

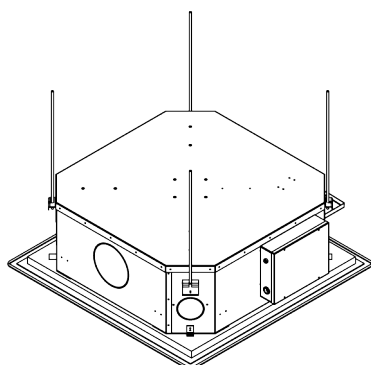
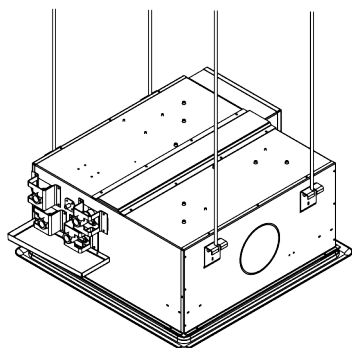
- Always use original spare parts.
- Always use work gloves.
- Always unplug the unit from the mains power supply before carrying out any type of operation or maintenance.
- Never remove protective elements without first unplugging the unit from the mains power supply.
- Make sure that the fan has stopped.
- Flow and return valves and any isolating valves must be closed for repair and maintenance.
- Never tamper with or modify regulation and safety devices without prior authorization and instructions.
- If pipe connections of the heat exchanger are handled improperly, hot heating fluid may be discharged and may cause scalding.
- All panels and covers removed for repair or maintenance work must be fitted back after the completion of work.

#### For the use:

- Do not expose to inflammable gas.
- Never introduce foreign objects through the air intake and discharge grills.
- It is dangerous to touch the unit with damp parts of the body and bare feet.
- Never twist, detach or pull power cables, even when the unit is unplugged from the mains power supply.
- Never throw or spray water on the unit.
- Never introduce objects or the hand into the fans.
- In particularly cold climates, if the appliance is not to be used for long periods, drain the hydraulic circuit.

## INSTALLATION

All operations of installation, startup and maintenance of the fan coil unit must always have been done according to all health and safety rules/regulations and to the most updated technology.



## Predispositions

To operate the appliance, connect hydraulically to a boiler/chiller and electrically to a 230 V single phase power supply.

Prior to installation the following conditions must be satisfied:

The suspended ceiling must be in place and must have been cut out for the fan-coil unit. The minimum and maximum dimensions of the cutout are as follows:

Model	Minimum	Maximum
300	590×590	630×630
400		
500		
600		
800	840×840	900×900
1000		
1200		

The pipework must have been installed and the valving must be ready for installation.

Cabling to the appliance must have been installed above the suspended ceiling.

## Place of installation

Cassette fan-coil units are exclusively designed for incorporation in suspended ceilings.

Install grills on the doors for the air circulation.

The minimum space between the false ceiling and the ceiling is:

Model	A (mm)
300	310
400	
500	
600	
800	345
1000	
1200	

## Environmental conditions

The air temperature in the fancoil unit air intake area (in the center of the air intake area of the nozzle) must be between 6 and 40 °C.

The temperature must never be outside this range.

The relative humidity must be between 15 and 75% for fan-coil unit operation.

## MECHANICAL INSTALLATION

When installing the fan coils on the ceiling, keep in mind the possible problem of stratification of the air; it should also be remembered that the outlet grills must be positioned so that the air flows downwards.

## Procedure

The procedure for installing the fan-coil unit is as follows:

- The hole positions in the structural ceiling must first be marked by reference to the two opposite sides of the cutout in the suspended ceiling and the holes for the threaded rods must then be drilled (dimensions are shown by the drawings in this page).
- The threaded rods must then be fixed in the ceiling.
- The length of the rods depends on the clearance between the suspended ceiling and the structural ceiling.
- The fan-coil unit is then tilted and pushed through the cutout with the terminal box on top and then placed level over the cutout.
- The hooks on the brackets allow a quick temporary installation. Following positioning, the brackets must be attached to the appliance walls by means of tapping screws.
- The appliance must then be fixed to the threaded rods. It is essential for the appliance to be exactly level.
- The unit can be installed using any other method considered appropriate by the installer, providing it is in accordance with current legislation.

## Air outlets

Air outlets are provided on the fan coil unit for connection to separate supply air ducting.

Air flow and pressure at each air outlets are, however, a function of the number of air outlets used.

The size and the location of the outlets is shown by the drawings.

The diagrams in this page show air flow rates through the air outlets as a function of the supply air duct pressure loss for maximum fan speed.

feature thermal insulation to avoid condensation and dripping water.

Then complete the water and electrical connections.

## WATER CONNECTIONS

Correct installation is essential, which includes the insulation of the air pipes with anti-condensation insulating material around the fluid pipe connections.

## Heating and cooling fluid

The heating or cooling fluid must be water or a water/glycol mixture.

The fluid temperature must be between 5 and 80°C and must never be outside this range.

Maximum working pressure: 800 kPa (8 bars).

Always use two spanners to connect the heat exchanger to the pipes.

Always fit a gate valve in the water circuit.

## WARNING!

During the summer and when the fan is inactive for long periods, it's necessary to shut off the water supply to the coil to avoid condensation forming on the outside of the unit.

If the unit is fitted with a valve, connect the connection pipes to the valve.

If the unit is used for cooling, insulate the pipes and valve to avoid drops of condensate forming.

## Condensate drain hose

YOU ARE RECOMMENDED TO FIT A SIPHON ON THE CONDENSATE DRAIN. INSTALL a CONDENSATE DRAIN PIPE WITH a SLOPE OF AT LEAST 2 cm/meter. The condensation discharge hose, located near the water connections, features:

- Length = 470 mm
- Connection external diameter = 14 mm

The maximum discharge head of the pump is 650 mm from the bottom edge of the appliance.

## Condensate tray

The loose condensate tray collects condensation from the heat exchanger connections and the control valves.

## ELECTRICAL CONNECTIONS

The wiring diagrams do not address protective grounding or other electrical protection which will be required under local rules, regulations, codes and standards or by the local electricity supplier.

Before installing the fan coil, make sure the rated voltage of the power supply is 220 V - 50 Hz.

The power supply is always connected to terminals L, N and PE on the board.

Maximum power consumption for 220 VAC mains power operation is as follows:

Model	W	A
300	28	0.13
400	39	0.18
500	54	0.33
600	60	0.29
800	75	0.39
1000	99	0.54
1200	143	0.8

Make sure that, in addition to supplying the working current required by the fan coil, the mains electrical supply is also able to supply the current necessary to operate other household appliances and units.

Upstream of the unit, fit an Omni polar switch with minimum contact distance of 3.5 mm.

The unit must always be earthed.

Always disconnect the electrical power supply before opening the unit.

The minimum cross section of the electric wires is 0.75 mm<sup>2</sup>

## Connection instructions

In Cassette fan coil, the wires from the remote control unit are connected to the fan coil screw terminal board.

## Power, control and valve wiring

The board fitted on the fan convector is already configured for connection to the various control signals, according to the indications provided in the section "Control signals and wiring diagrams".

To connect, respect the wiring diagrams in this booklet.

The installer must bring the connecting wires into the unit through the access points provided.

Only one fan coil can be connected to the control unit. To control more than one fan coil with a single control unit, each appliance must be fitted with a SEL-S speed selector which controls that particular unit according to the signal received from the centralized remote control unit.

## Electrical Equipment

The motor is protected by a thermal contact integrated in the winding.

It stops the motor if overheating occurs and starts the motor again automatically after it has cooled down.

The fan coil is provided with a terminal board for the connection of the electrical feeding, for the fan speed control, for the valve's control and for the connection with the safety device.

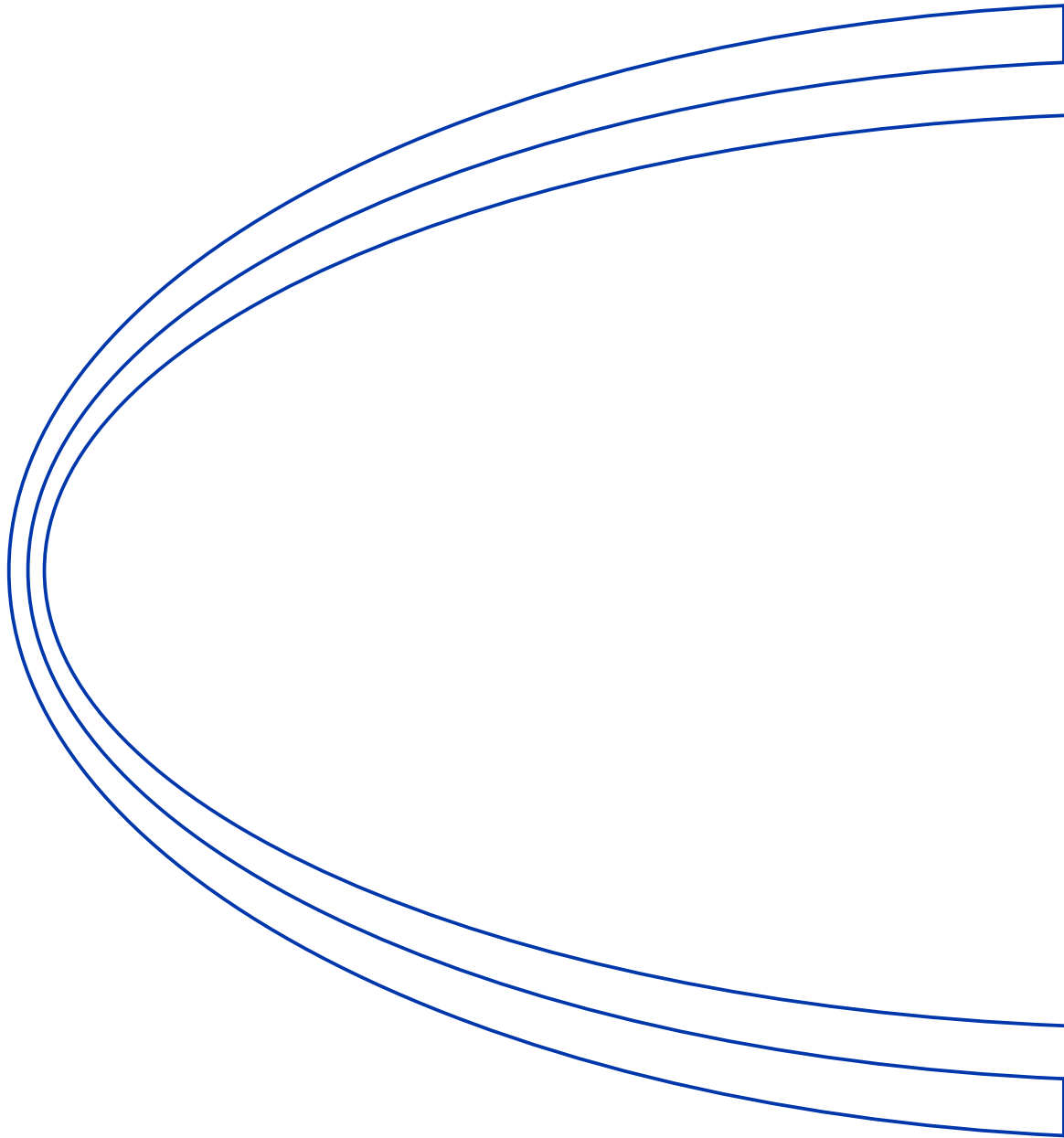
Each terminal accommodates two wires of the same cross-section (maximum 1.5 mm<sup>2</sup>).

On cooling mode, the electronic board installed on the unit, controls and runs the condensate drain pump.

A level control system inside the unit starts the drain pump. In case the internal condensate level reaches the safety limit, the supply of the water to the valve is stopped.

The safety relay has a deviation contact and allows a remote alarm signal.





**Sanaye Sarmaafarin Iran**  
شرکت صنایع سرما آفرین ایران  
(کریر ترموفریگ)

No. 194, W. Khorramshahr (Apadana) Ave., TEHRAN-15337, P. O. BOX: 13145-1799 Tel: 88762038 Fax: 88762033 [www.sarmaafarin.com](http://www.sarmaafarin.com)

سهرودی شمالی، خیابان خرمشهر، شماره ۱۹۴، تهران - ۱۵۳۷۷، صندوق پستی: ۱۳۱۴۵-۱۷۹۹ تلفن: ۸۸۷۶۲۰۳۸ فاکس: ۸۸۷۶۲۰۳۳

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