

Installation and user manual **EN**



filoterra
DC Inverter
SLF

First of all, we would like to thank you for having chosen a device of our production.

We are sure you will be happy with it because it represents the state of the art in the technology of home air conditioning.

By following the suggestions contained in this manual, the product that you have purchased will operate without problems giving you optimum room temperatures with minimum energy costs.

INNOVA S.r.l.

Conformity

This unit complies with the European directives:

- Low voltage 2014/35 / EU;
- Electromagnetic compatibility 2014/30 / EU;

Symbols

The pictograms in the next chapter provide the necessary information for correct, safe use of the machine in a rapid, unmistakable way.

Editorial pictograms

U User

- Refers to pages containing instructions or information for the user.

I Installer

- Refers to pages containing instructions or information for the installer.

S Service

- Refers to pages containing instructions or information for the installer TECHNICAL CUSTOMER SERVICE.

Safety pictograms

⚠ Warning

- Signals to the personnel that the operation described could cause physical injury if not performed according to the safety rules.

⚠ Dangerous electrical voltage

- Signals to the personnel that the operation described could cause electrocution if not performed according to the safety rules.

⚠ High heating danger

- Signals to the personnel that the operation described could cause burns if not performed according to the safety rules.

⊘ Prohibition

- Refers to prohibited actions.

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GENERAL

1.1 General warnings

- ⚠ After unpacking, make sure that all the components are present. If not, contact your vendor who sold the device to you.
- ⚠ Only qualified installer companies are authorised to install the device. After having completed installation, the installer will issue a declaration of conformity to the plant manager, as required by the applicable standards and the guidelines provided by contractor's instruction manual supplied with the device.
- ⚠ These device have been designed for room heating and/or air conditioning and must be used as intended and compatibility with their performance levels. Any contractual and extra-contractual liability of constructor for harm caused to person, animals or property by installation errors, improper adjustments, maintenance or use is excluded.
- ⚠ If water leaks out of the device, set the main switch to "Off" and close the water taps. Contact our Technical Customer Service as soon as possible or professionally qualified staff and do not personally attempt fix the problem.
- ⚠ If the device is to remain out of service for a prolonged period, make sure you carry out the following operation:
 - set the main system switch to "Off"
 - close the water taps
 - if there is a danger of frost, make sure that you have added anti-freeze liquid into the circuits, or drain out the system otherwise
- ⚠ A temperature that is too low or too high is harmful to health and is an unnecessary waste of energy. Avoid direct contact with the air flow over an extended period.
- ⚠ Avoid keeping the installation premises closed for a long time except in the presence of a heat recovery ventilation system.
- ⚠ This instruction manual forms an integral part of the device and therefore must be carefully preserved and must ALWAYS travel with it, even if you transfer the device to another owner or relocate it to other premises. If the manual gets damaged or lost, download a copy from the website.
- ⚠ All repair or maintenance interventions must be performed by the technical service department or by professionally qualified personnel as foreseen in this booklet. Do not modify or intervene on the appliance as this could create dangerous situations and the manufacturer will not be responsible for any damage caused.
- ⚠ Avoid contact: danger of burns.

1.2 Basic rules of security

Please keep in mind that the use of products powered by electricity and water call for operators to comply with certain essential safety rules:

- ⊖ It is forbidden to children and unassisted disabled persons to use the device. The unit can be used by children over the age of 8, and by people with reduced physical, sensory or mental capabilities, or with no experience or necessary knowledge, as long as they are monitored or after they have received instructions on the safe use of the unit and have understood the dangers involved. Children must not play with the appliance. The cleaning and maintenance that must be performed by the user should not be carried out by children without supervision.
- ⊖ It is forbidden to touch the device with wet or damp body parts.
- ⊖ It is forbidden to clean the device before having disconnected it from the mains by setting the main switch of the system to "off".
- ⊖ It is forbidden to modify the safety or adjustment devices or adjust without authorization and indications of the manufacturer.
- ⊖ It is forbidden to pull, unplug or twist the device's electric cables, even if it is disconnected from the mains.
- ⊖ It is forbidden to introduce objects and substances through the air inlet and outlet grilles.
- ⊖ It is forbidden to open the access doors of the device's internal parts without first having set main switch of the system to "off".
- ⊖ It is forbidden to dispose of, or leave in the reach of children, the packaging materials which could become a source of danger.

1.3 Product line

Filoterra fancoils range are designed for floor installation. The device are made in three different performance levels and size, all for two-pipe configuration.

Filoterra fancoils range are available into three configurations based on control mode:

- for connection with remote control at modulating speed
- for connection with remote control at fixed speed
- for 0-10 V connection at modulating speed

1.4 Rated technical specifications

2 pipes only

Technical data (DC)

		SLF	SLF	SLF
		400	600	800
	m.u.			
Battery water content	liters	0,54	0,74	0,93
Maximum working pressure	bar	10	10	10
Maximum water inlet temperature	°C	80	80	80
Minimum water inlet temperature	°C	4	4	4
Hydraulic connections		Eurokonus 3/4	Eurokonus 3/4	Eurokonus 3/4
Supply voltage	V/ph/Hz	230/1/50	230/1/50	230/1/50
Power consumption at the maximum speed	W	12,0	14,0	18,0
Power consumption at the minimum speed	W	4,8	5,1	5,8
Total length	mm	853	1053	1253
Total height	mm	431	431	431
Total depth	mm	175	175	175
Net weighth	kg	14	16	19

1.5 Overall dimensions

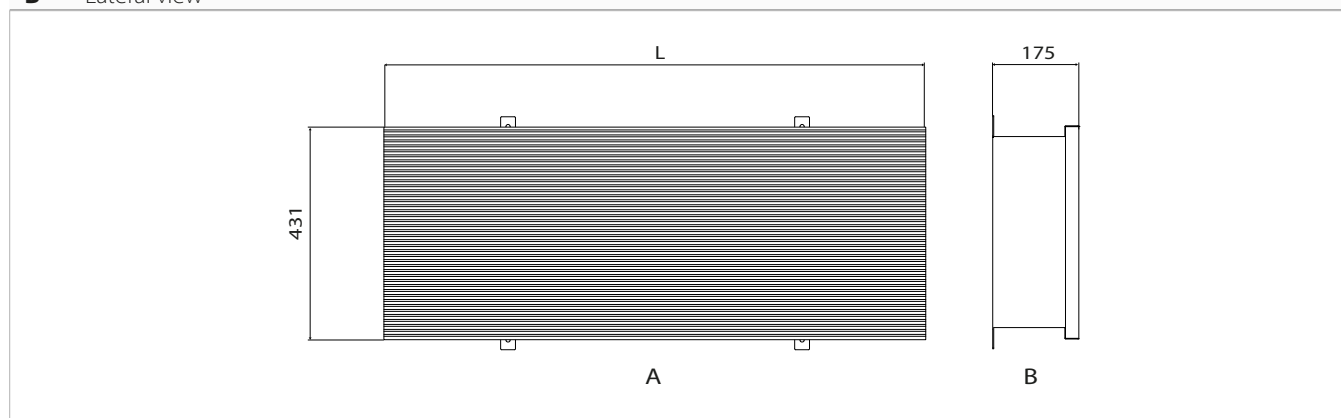
2 pipes only

Dimensions

		SLF	SLF	SLF
		400	600	800
	m.u.			
Total length	mm	853	1053	1253

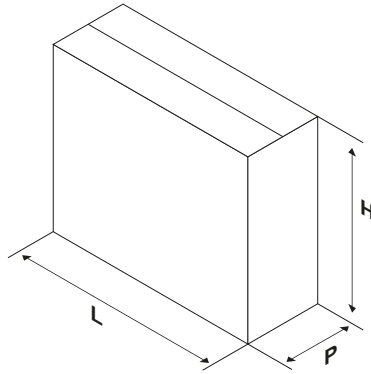
A Top view

B Lateral view



1.6 Dimensions and weight during transportation

		SLF	SLF	SLF
m.u.		400	600	800
Dimensions and weight during transportation				
Total length	mm	1035	1235	1435
Total height	mm	490	490	490
Total depth	mm	213	213	213
Weight	kg	15	17	20



INSTALLATION

2.1 Unit placement

The siting of the device must be established by the system designer or other qualified professional and must take into account both technical requirements and any local laws in force.

Filoterra fancoil has to be installed only in horizontal position on the floor.

⚠ Avoid installing the unit near:

- areas exposed to direct sunlight
- near heat sources, except for solar radiations filtered by glass
- in damp areas and areas in which the unit can come into contact with water
- in environments with oil mists

- in environments subject to high frequencies

⚠ Make sure that:

- the floor on which you intend to install the unit has an appropriate structure and capacity
- the floor surface is not crossed by pipelines or powerlines
- the floor surface is perfectly level
- there are no obstructions nearby that could compromise the inlet and outlet airflow
- the installation position is suitable to allow condensate drain outside the
- the installation position is optimal to avoid that the airflow is directed towards people

2.2 Installation mode

The assembly steps described below and their drawings refer to a version of the machine with connections on the right side.

⚠ For ideal installation and performance levels, carefully follow the instructions in the manual.

⚠ Failure to do so may cause system malfunctions and automatically voids the warranty, and relieves the constructor of any harm caused to person, animals or property.

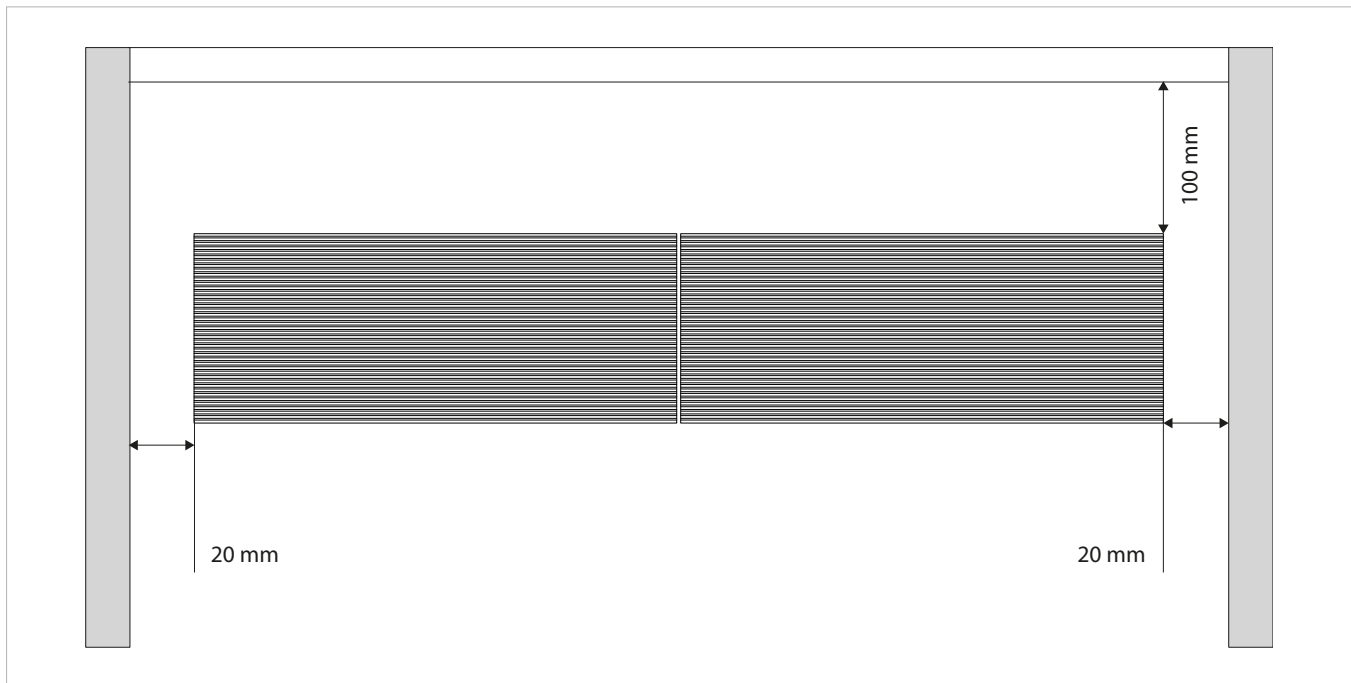
2.3 Installation minimum distances

The figure shows the minimum installation distances of the unit.

⚠ It is important to ensure that the air flow is not occluded by walls or obstacles.



You can install several devices in succession. In this case it is not necessary to keep the minimum distances between one unit and the other.



2.4 Device preparation

The device is supplied with the installation accessories:

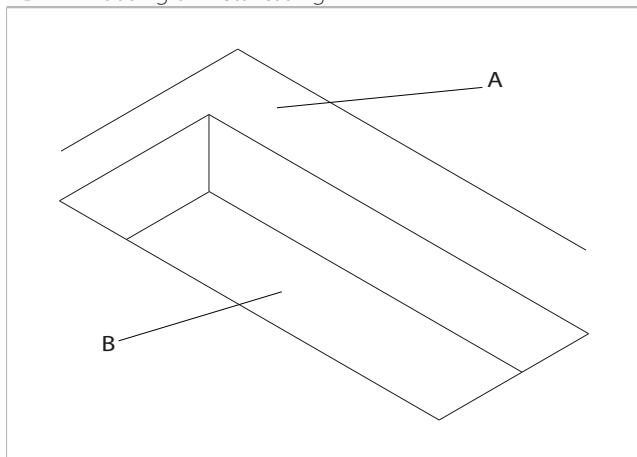
- metal casing
- cover grid

2.5 Predisposition to installation

To install the unit, prepare the flooring for the housing of the metal casing.

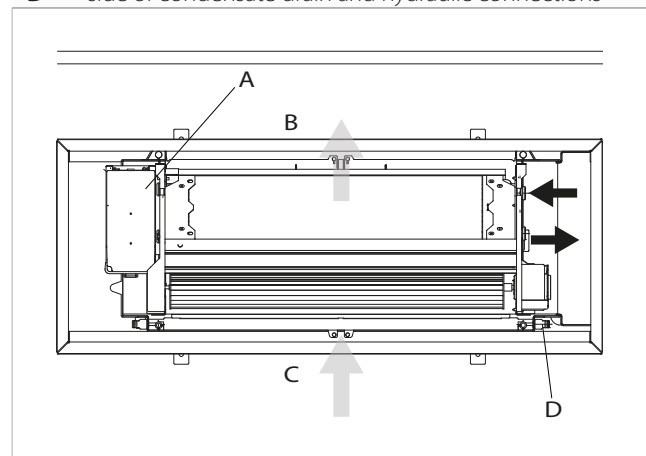
- ⚠ Make sure that the floor is able to support the weight of the appliance.
- ⚠ Make sure that the floor is not crossed by pipelines, load-bearing construction elements or power lines.

- A** floor
- B** housing of metal casing



- ⚠ The side of the connections must be understood as shown below, with connections on the right part (standard).

- A** electric connections
- B** air outflow side (outlet)
- C** air intake side (inlet)
- D** side of condensate drain and hydraulic connections

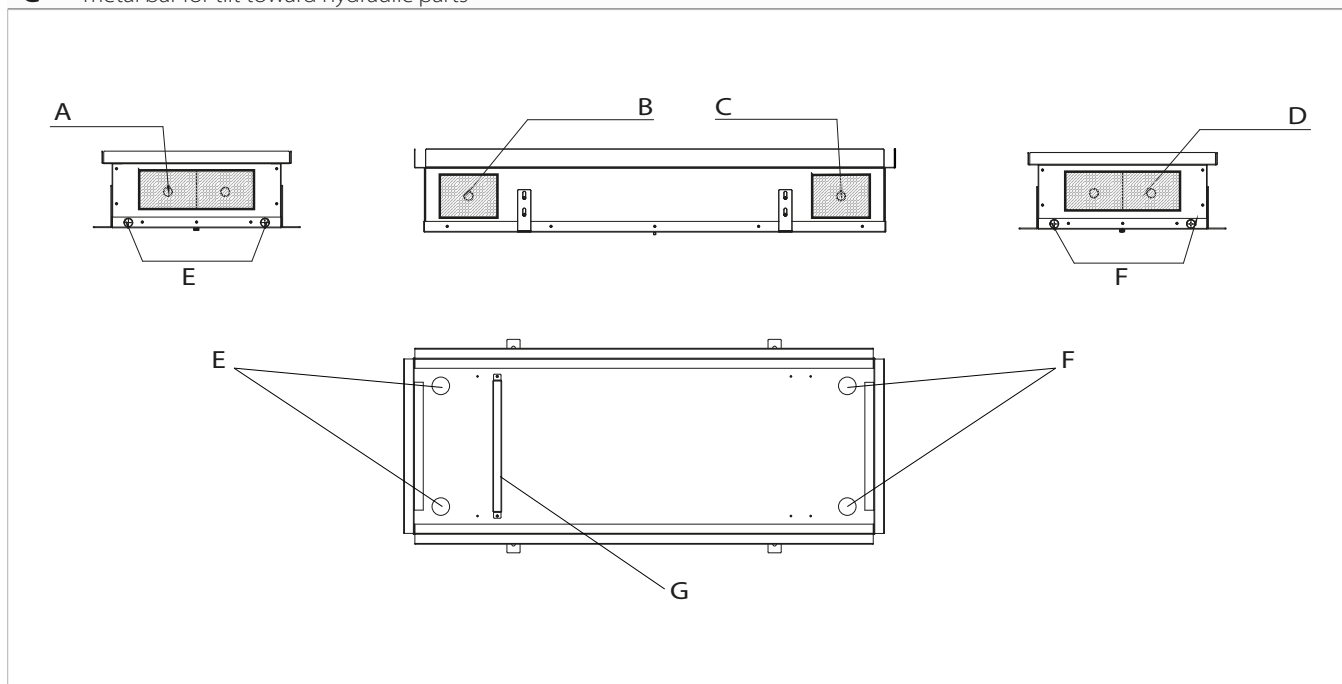


Prepare the formwork for the connections

- identify the condensate drain side and hydraulic connection side

- apply the supplied metal bar on the side opposite to the side hydraulic connections and condensate drain
- secure the metal bar

A	predisposition for connections on the left, side view
B	predisposition for connections on the left, longitudinal view
C	predisposition for connections on the right, longitudinal view
D	predisposition for connections on the right, side view
E	condensate drain hydraulic connections SX
F	condensate drain hydraulic connections DX
G	metal bar for tilt toward hydraulic parts

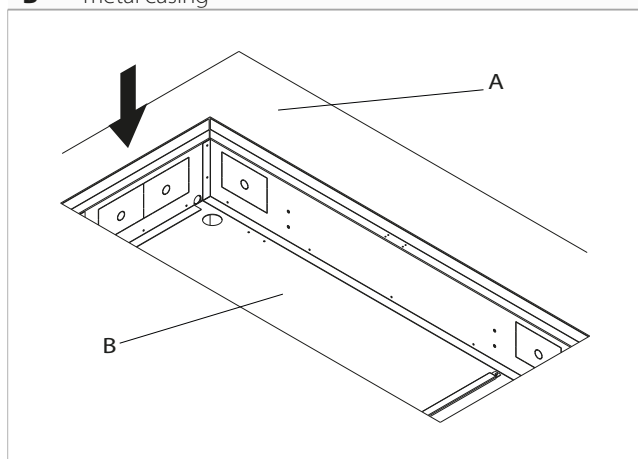


- ⚠ Depending on the side of the hydraulic connections, bring the supply hoses so that they come out of the correct pre-punching.
- ⚠ Make sure to place the bar correctly on the opposite side of the condensate drain. This will allow the device to be slightly tilted, facilitating the condensate discharge.
- ⚠ Make a siphon to prevent bad smells returning up the pipe towards the room. The curve of the siphon must be lower than the condensation collection bowl.
- ⚠ Pay attention to the height and slope of the drain pipe, which must be constant.

2.6 Installation

Install the metal casing

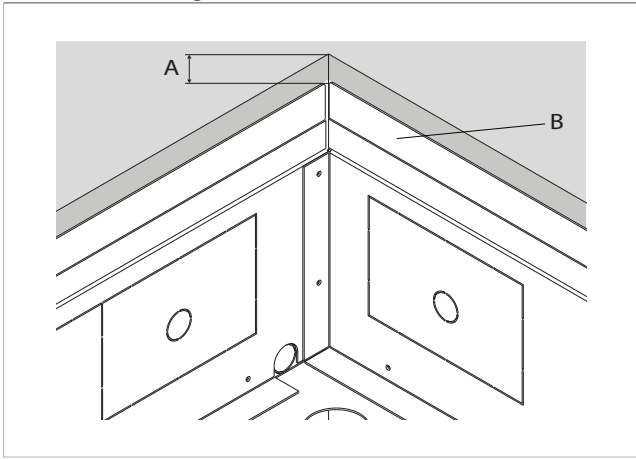
A	floor
B	metal casing



- insert the metal casing in the space provided

- position it 7 mm below the finished floor level
- fix the metal casing
- ⚠ Be sure to place the metal casing 7 mm below the floor level. Thus upper the grid will remain at floor-level.

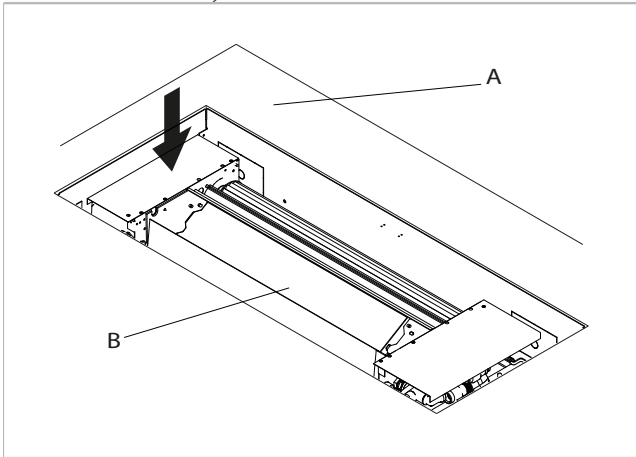
- A** 7 mm below the edge of the finished external floor
- B** metal casing



Insert the fancoil

- insert the fancoil inside the metal casing
 - making the connections
- ⚠ Make sure that the air supply is facing in the correct direction.
 - ⚠ Make sure that the side connections and the condensate drain are correctly positioned.

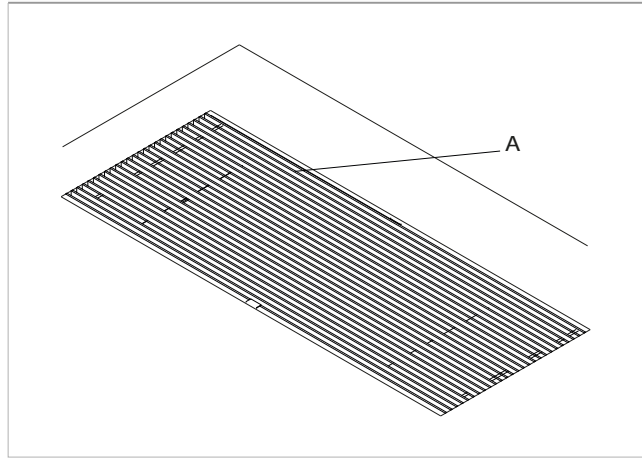
- A** floor
- B** machine body



Insert the grid

- insert the grid
- ⚠ It is necessary, for the correct functioning of the device, that during the whole installation phase the working space remains clean.
 - ⚠ Regularly clear away waste offcuts, debris or dirt in the metal casing.

- A** Grid



2.7 Hydraulic connections

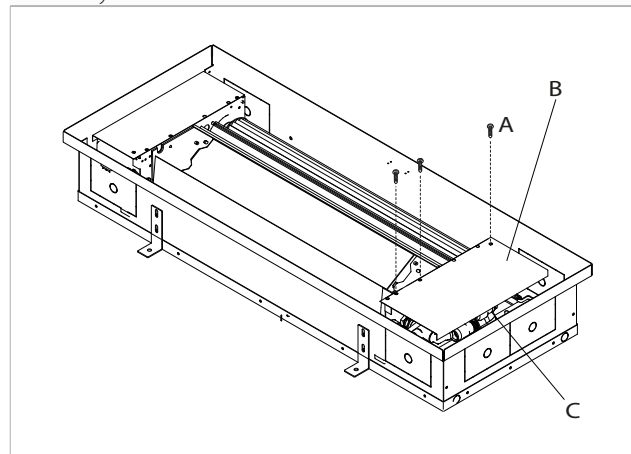
The engineer is responsible for choosing the right water lines and their size, in accordance with good installation practices and the applicable law.

⚠ Keep in mind that undersized pipelines lead to poor system operation.

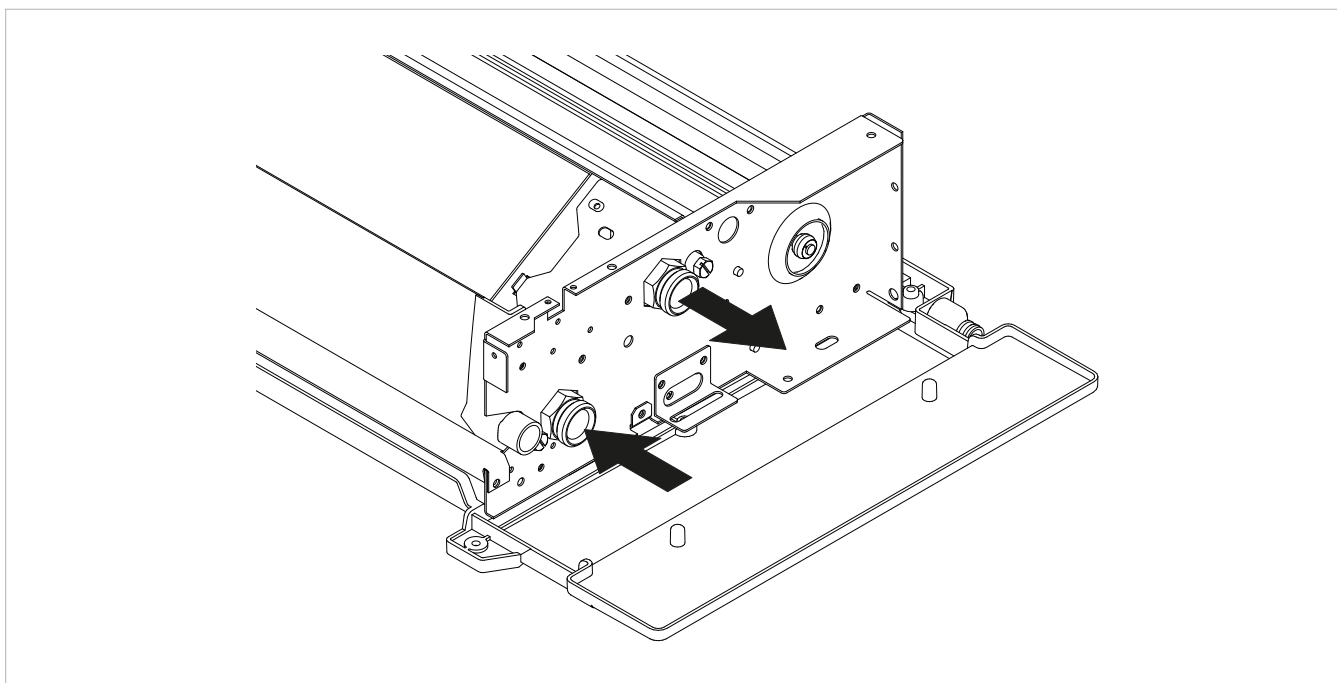
To access the space of the hydraulic connections:

- unscrew the fixing screw
- remove the protective cover plate

- A** fixing screws
- B** cover plate
- C** hydraulic connections



Position and dimensions



		SLF	SLF	SLF
		400	600	800
	m.u.			
Pipelines inner diameter	mm	14	16	16

Connection to the system

To make the connections:

- hydraulic lines positioning
- use the "wrench against wrench" method
- tighten the connections
- check for leaks
- coat the connections with insulating material

⚠ The hydraulic lines and fittings must be thermally insulated.

⚠ Avoid partial insulation of the pipes.

⚠ Avoid over-tightening the pipes to avoid damage to the insulation.

⚠ Carefully check that the insulation is tight, in order to prevent the formation and dripping of condensate.

Hydraulic accessories

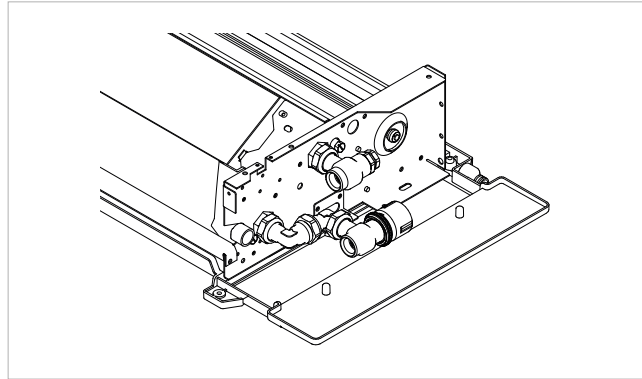
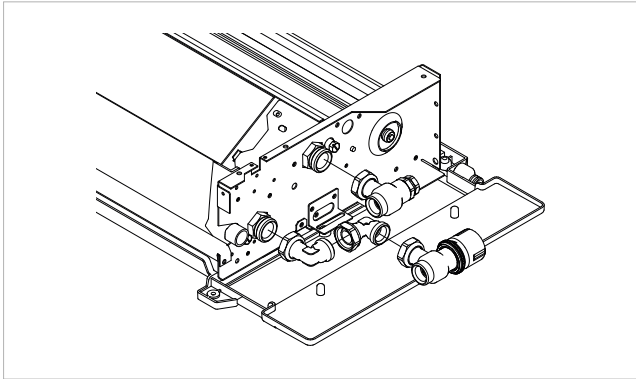
The device comes standard without any shut-off valve.

In other case, depending of the request, the unit can be supplied with valves already assembled or supplied separately to be mounted during installation.

Connection with 2-way manual valve (I20686)

In case of choice for the 2-way manual valve:

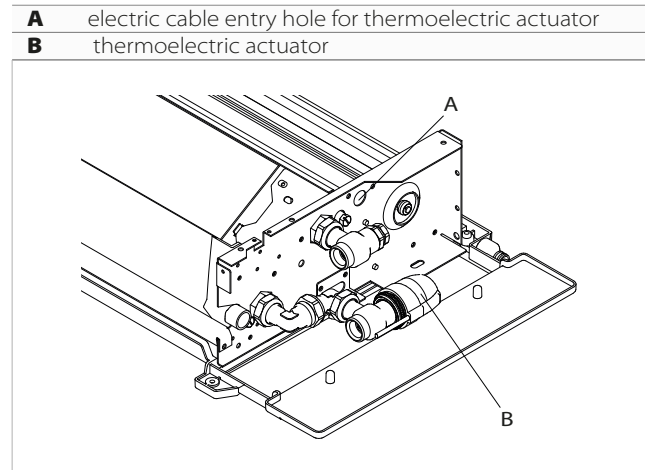
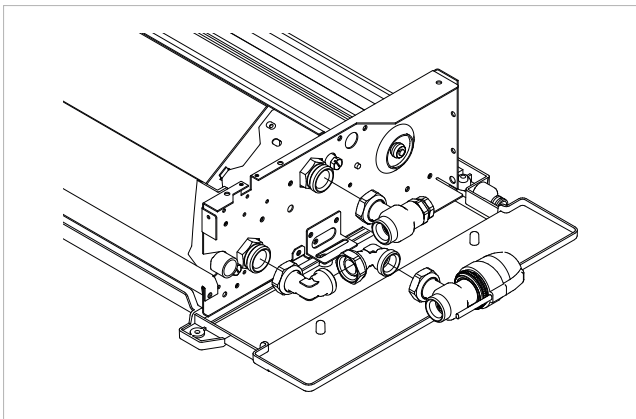
- no electrical connection are necessary
- simply connect the pipeline as shown in the figure



Connection with 2-way valve and thermoelectric actuator (V20687)

In case of choice for the 2-way valve and thermoelectric actuator:

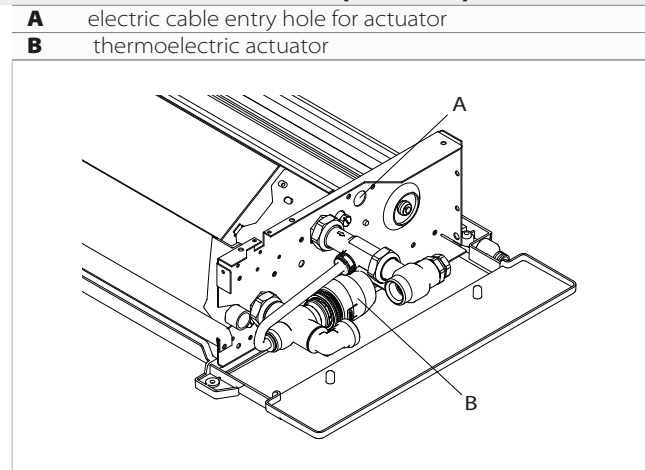
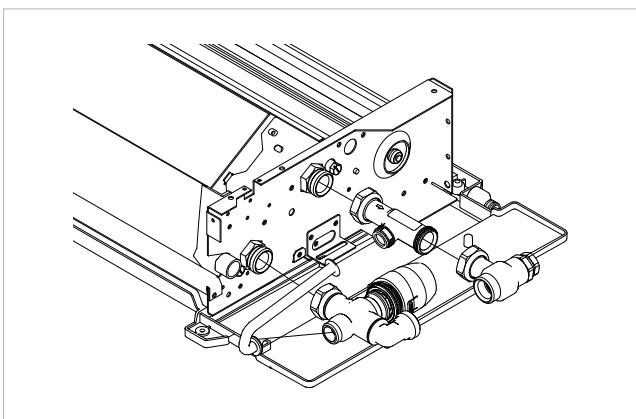
- connect the pipeline as shown in the figure



Connection with 3-way diverting valve unit with thermoelectric actuator (V30688)

In case of choice for the 3-way diverter valve unit with thermoelectric motor:

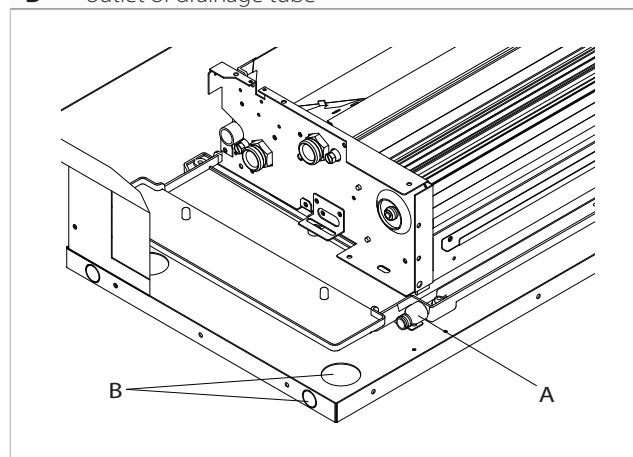
- connect the pipeline as shown in the figure



2.8 Condensate drain

The unit is complete of a drain pan that collects the condensate fluid that is produced during cooling operation and must be conveyed to a suitable place for unloading.

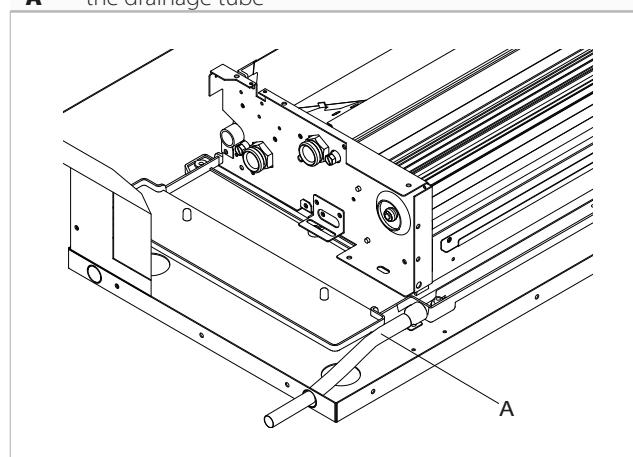
- A** drain connection
- B** outlet of drainage tube



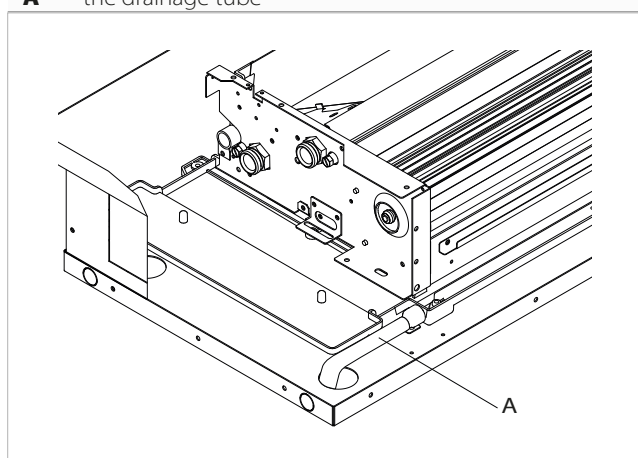
Connection to the condensate drain

- connect a rubber drainage tube
 - direct it to a suitable place for unloading
 - provide a slope never less than 1%
 - insulate fitting points
- ⚠ Pay attention to the tilt of the condensate drain pipe.
 - ⚠ Make the condensate liquid flow directly into a "white water".
 - ⚠ Make a siphon to prevent bad smells returning up the pipe towards the room. The curve of the siphon must be lower than the condensation collection bowl.
 - ⚠ Install a pump if the drain pipe has to pass a gradient that hinders the flow.

- A** the drainage tube



- A** the drainage tube



Check

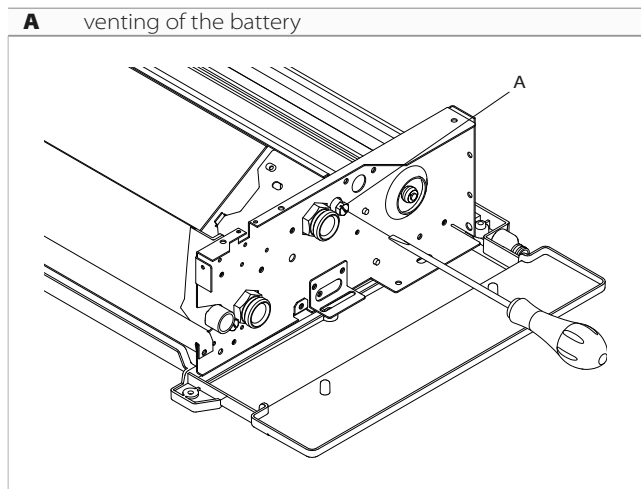
- After the installation is completed:
- pour the water very slowly into the condensate drain pan

- check the correct outflow

2.9 Filling the system

- To fill the system:
- open the vent valves

- open all the system's shut-off devices
 - slowly open the water tap
- When water begins to leak out of the breather valves:
- close the breather valves
 - continue to fill the system
 - verify that you have reached the nominal pressure for the system
 - close the water tap
 - check the tightness of the gaskets
- ⚠ It is recommended to repeat this operation after the device has been running for a few hours.
- ⚠ Regularly check the system's pressure.
- ⚠ Keep the system bleed during operation, penalty, loss of performance and energy consumption.



2.10 Electric connections

The device leaves the factory fully wired up and needs only the connection to the power supply, to any controls and accessories.

For the size of the power supply cable and safety devices, use the following table.

		SLW	SLW	SLW
		400	600	800
	m.u.			
Power conductor (phase+neutral)	mm ²	1,5	1,5	1,5
protective conductor section on ground	mm ²	1,5	1,5	1,5
Automatic magnetohermic switch	A	2,0	2,0	2,0

Note: The values indicated refer to a maximum length of the lines equal to 30 m.

Make sure that:

- the characteristics of the electric network are adapted to the absorption of the apparatus, considering also any other devices in parallel operation
- the power supply voltage and system frequency match to the values indicated on the device's plate data
- the cables must be appropriate for the type of installation in accordance with the applicable IEC standards
- the power supply is provide with protection against overload and/or short-circuit

It is required:

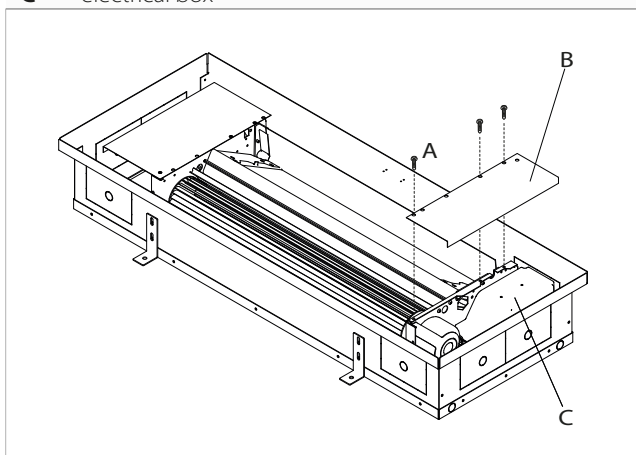
- connect the device an efficient ground connection

- refer to the wiring diagrams in this booklet for any electrical intervention
- install a dedicated main switch fitted with time-delay fuse or with an automatic circuit breaker switch, installed near the device
- ⚠ The device is equipped with suppression filter as laid down by the applicable laws and standards. Use selective circuit breakers to compensate for the micro-dispersion on the ground of this device.
- ⚠ If you need to replace the power cable, contact only qualified staff and in compliance with the applicable national laws.
- ⚠ Open the main switch before making electrical connections or maintenance operations.
- ⊖ It is forbidden the use of gas and water pipes for grounding the appliance.

Access to the terminal block

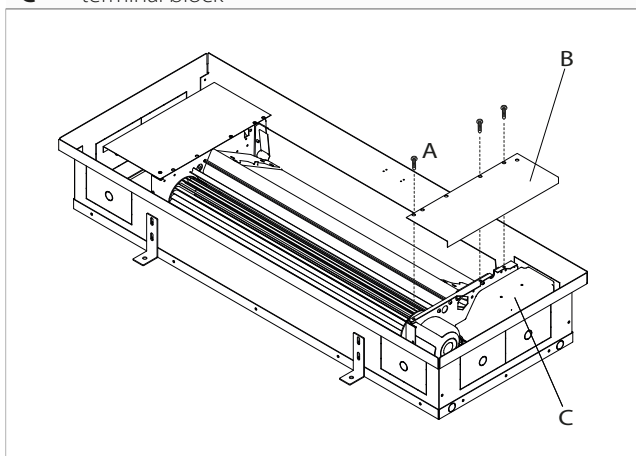
- ⚠ Before doing any work, make sure that the supply power is disconnect.
- To access the terminal block:
- unscrew the fixing screws of the cover plate
 - remove the cover plate

- A** fixing screws
- B** cover plate
- C** electrical box



- unscrew the fixing screws of the electric box
- open the cover

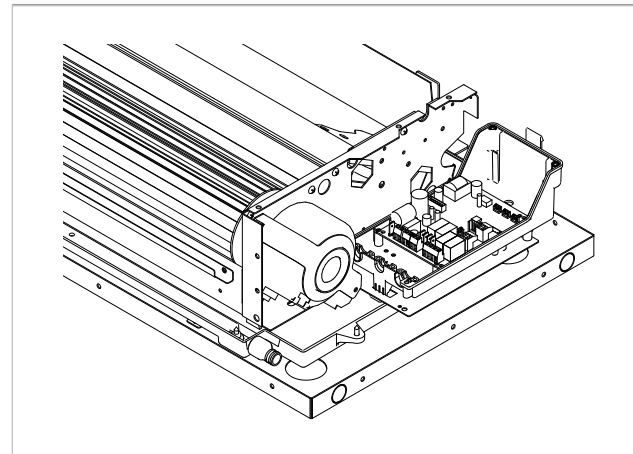
- A** fixing screws
- B** cover of the electrical box
- C** terminal block



To connect the power supply:

- bring the power cord to the terminal block
- making the connections
- refer to the information in the wiring diagram of the unit you are installing

A terminal block for connection



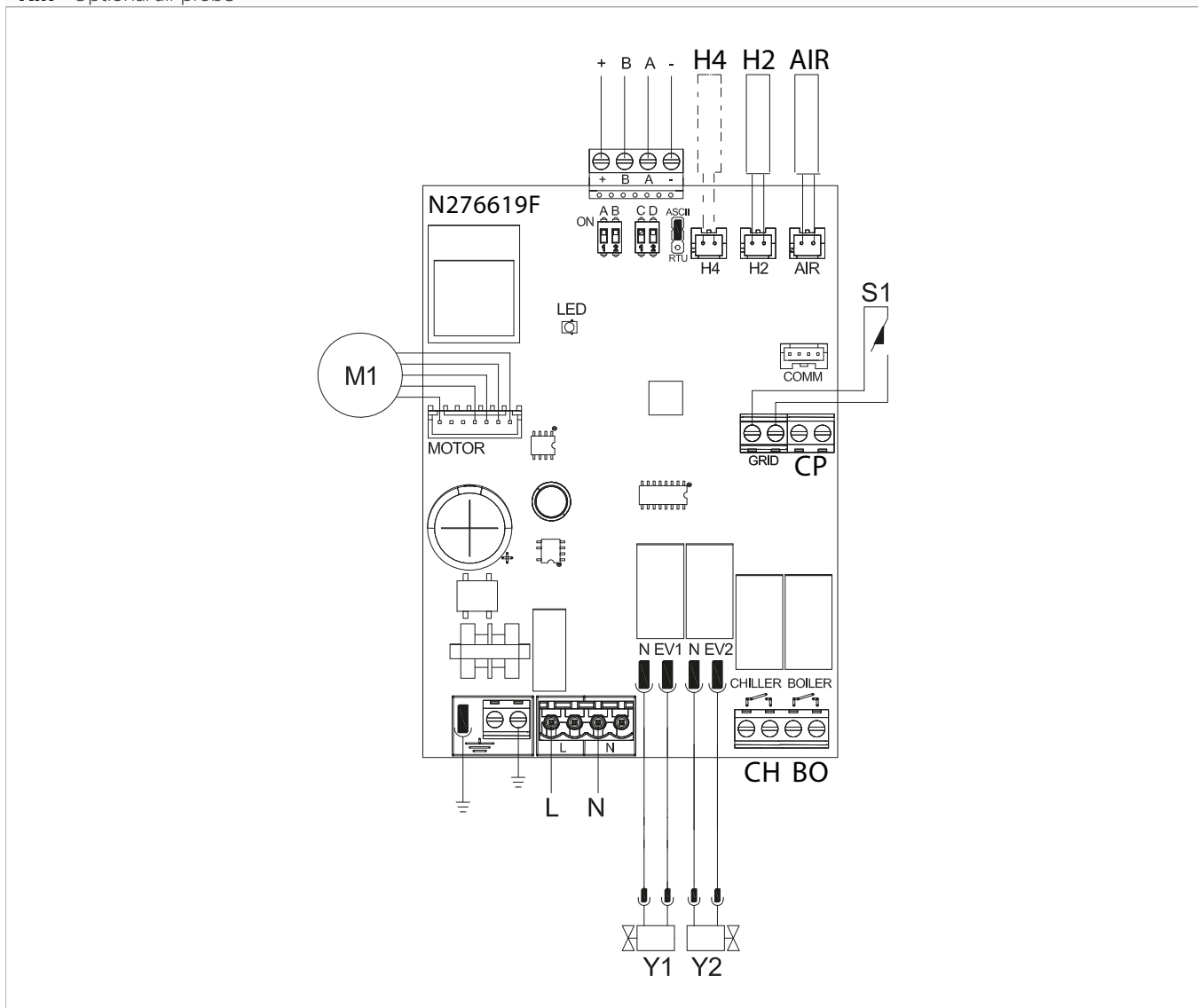
2.11 Diagrams and configurations electrical controls

Remote control ECA649 - ECB649 / EWF649 - EWB649 (code suffix-0S00)

Printed circuit board ESD645

The PCB is included in the supply.

-AB+	Serial connection for wall-mounted remote control (respect the AB polarization)
H2	Hot water temperature probe 10Ω
M1	Fan motor DC Inverter
Y1	Hot water solenoid valve (230V/50Hz 1A power output)
L-N	230V/50Hz electrical power supply connection
BO	Boiler consent output (free contact max 1A)
CH	Chiller consent output (free contact max 1A)
CP	Presence sensor input (if closed, the fancoil goes into stand-by)
AIR	Optional air probe



Wall mounted remote control ECA649 - ECB647 / EWF649 - EWB649

⚠ The control panel is to be ordered separately.

When the CP contact opens, connected to a clean contact not live, the unit is in stand-by. The display reads "CP".

Error signals

The PCB is fitted with a LED, thanks to which it is possible to intuit the operating status.

LED signals

- LED off
Device switched off or without power supply
- LED on
Normal operating of the device
- LED 1 flash / pause
*Water temperature probe H2 alarm not suitable, temporary stop of the ventilation until the temperature reaches an appropriate value **
- LED 2 flashes / pause
Motor alarm (for example jamming due to foreign bodies or fault in the rotation sensor)
- LED 3 flashes / pause
Water probe alarm disconnected or faulty
- LED 6 flashes / pause
Communication error with the wall remote control. In case of a non-communication for more than 5 minutes the device is deactivated.

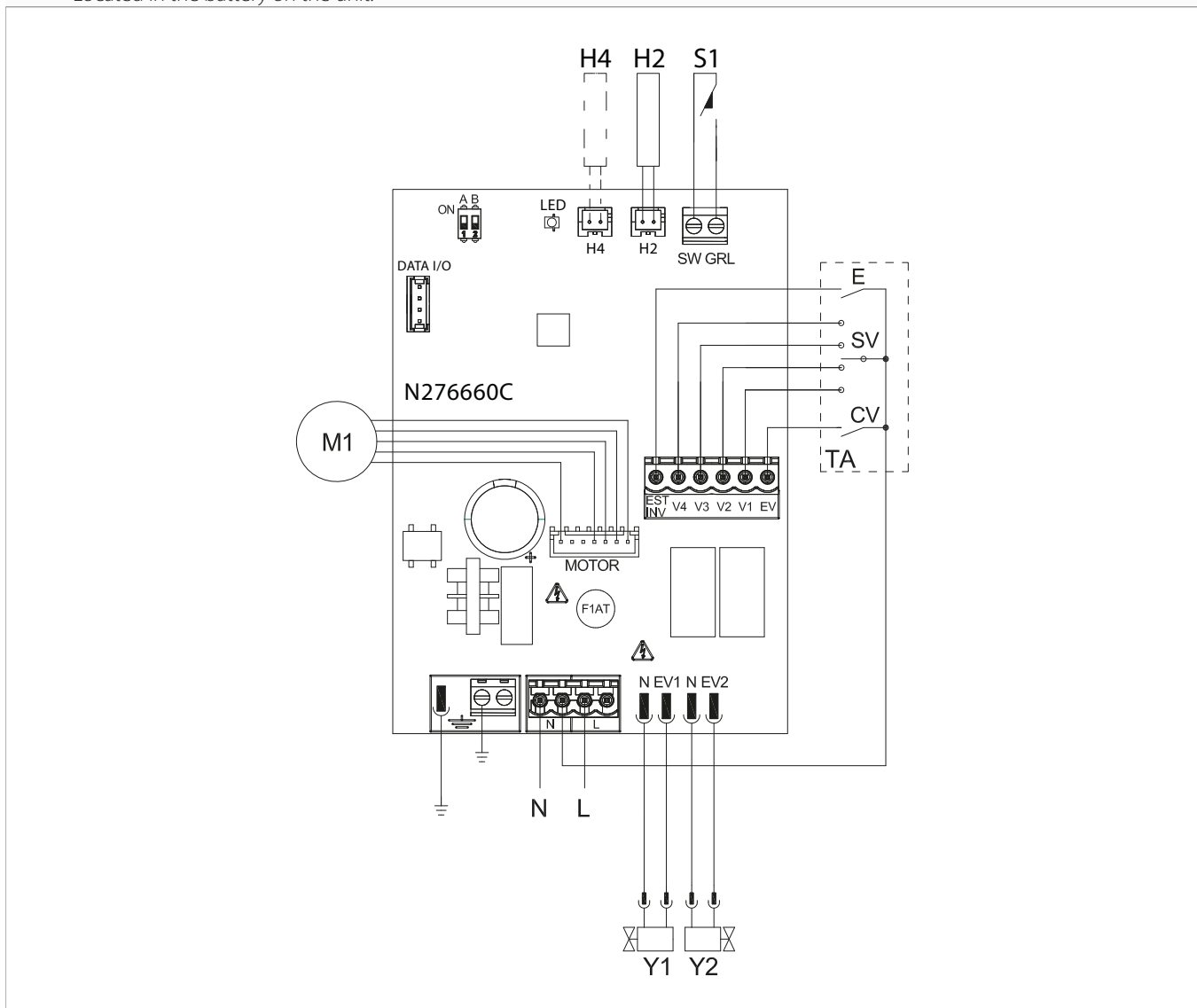
* In case of a operation without water probe H2, the fan stop thresholds will be ignored.

Remote control with fixed speed (code suffix-0T00)

Printed circuit board B4V642

The PCB is included in the supply.

L-N	230V/50Hz electrical power supply
EV	Solenoid valve permission input
V1	Maximum fan speed 1.400 rpm
V2	Medium fan speed 1.100 rpm
V3	Minimum fan speed 680 rpm
V4	Super-silent speed 400 rpm
E	Heating, cooling selection input
Y1	water solenoid valve (230V/50Hz 1A power output)
M1	Fan motor DC Inverter
TA	3 speed room thermostat (to buy, install and connect by the installer)
CV	Thermostat consent
SV	Speed selector
H2*	Water temperature probe 10Ω
*	Located in the battery on the unit.



Connection with 3 speed thermostats

The CV input is the ON/OFF of the board:

- in case of opened input the PCB is placed in stand-by
- in case of closed input the PCB is in operation

To activate the electrovalve Y1 the CV input must be bridged to clamp L of the 230 V electric power supply.

To activate the fan, connect the V1, V2, V3, V4 inputs to clamp L of the 230 V electric power supply. The inputs control the ventilation speed:

- V1 - maximum fan speed (equal to 1400 rpm)
- V2 - medium fan speed (equal to 1100 rpm)
- V3 - minimum fan speed (equal to 680 rpm)

Water probe

In case of connection with electromechanical thermostats or commercial commands provided with water probe:

- the on-board H2 probe will not be connected
 - the device will be controlled from the remote command
- If this is not the case, connect the 10 k Ω probe located inside the battery to the H2 connector on the PCB.

The printed circuit board works in:

- minimum water temperature for heating function (<30 °C)
- maximum water temperature for cooling function (>20 °C)

In case of temperature not suitable for active operation:

Error signals

LED signals

- LED off
The CV contact is open, stand-by condition
- LED on
The CV contact is closed, normal operation
- LED 1 flash / pause
Water temperature probe H2 alarm not suitable, temporary stop of the ventilation until the temperature reaches an appropriate value
- LED 2 flashes / pause
Motor alarm (for example jamming due to foreign bodies or fault in the rotation sensor)
- LED 3 flashes / pause
Water probe alarm disconnected or faulty

- V4 - supersilent speed (equal to 400 rpm)

Connect the 3 speeds of the thermostat to three of the four available inputs based on the characteristics and use of the location. Examples:

- residential application where maximum silence is required, connect V2, V3 e V4
- commercial application where the heating capacity is the main aspect, connect V1, V2 and V3

In the event of simultaneous closure of several inputs, the motor will run at a number of revolutions equal to that set by the connection with the highest speed.

You can connect several boards in parallel to a single thermostat, even using different speed.

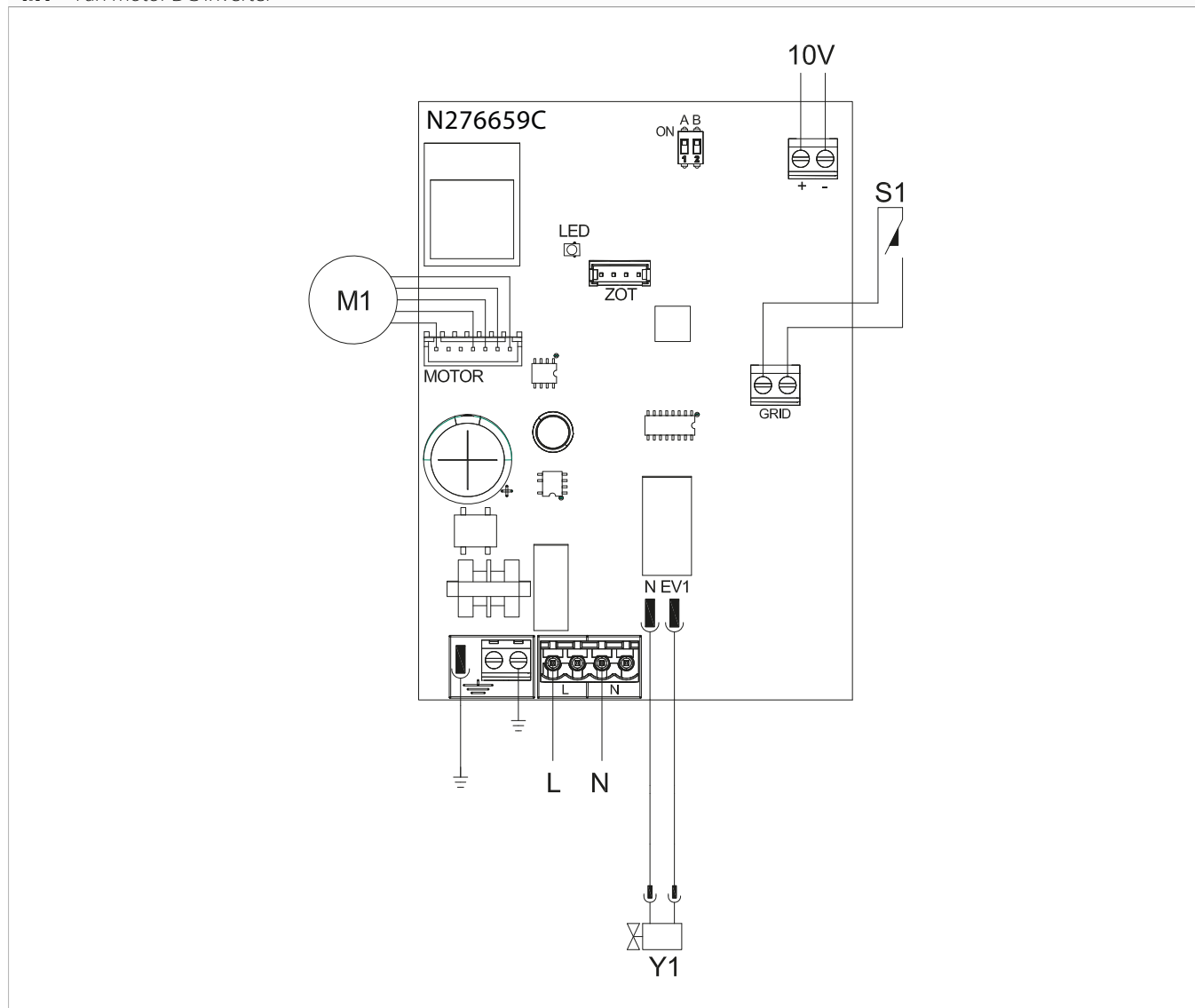
- the ventilation stops
 - error is indicated by the flashing of the LED on the PCB
The Heating/Cooling discriminant is implemented through the EST/IN input of the board:
 - with input open the boards goes into Heating mode
 - with input closed the board goes in Cooling mode
- It is possible to use the device without the water probe activated. In this case the error is signaled on led.
To confirm operation without the probe:
- disconnect and connect the board power
- This condition is stored by the board for all subsequent startups. Connect the probe to restore the normal functions.

Remote control with modulating speed (code suffix-0V00)

Printed circuit board B10642

The PCB is included in the supply.

- L-N** 230V/50Hz electrical power supply
- 10V** Device pilot input 0÷10V. Input impedance 25Ω.
- Y1** water solenoid valve (230V/50Hz 1A power output)
- M1** Fan motor DC Inverter



Connection with 0-10 V thermostats

The 10 V input activates solenoid valve Y1 and adjusts the number of rotations of the fan. The speed range provides a linear adjustment from the minimum value (400 rpm) to the maximum value (1400 rpm) for voltage values $\geq 1,1 \text{ V} \div 10 \text{ V DC}$.

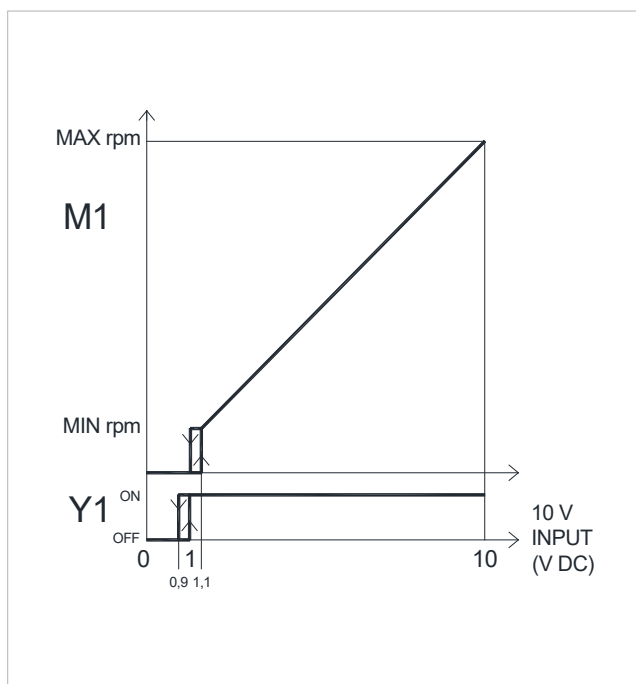
The solenoid valve Y1:

- is enabled by voltage values $> 1 \text{ V DC}$
- turns off with values $< 0,9 \text{ V DC}$

Error signals

LED signals

- LED off
The input signal is below 0,9 V
- LED on
Normal operation, the input signal is greater than 1 V
- LED 2 flashes / pause
Motor alarm (for example jamming due to foreign bodies or fault in the rotation sensor)



WALL-MOUNTED CONTROL ECA649 - ECB649 / EWF649 - EWB649

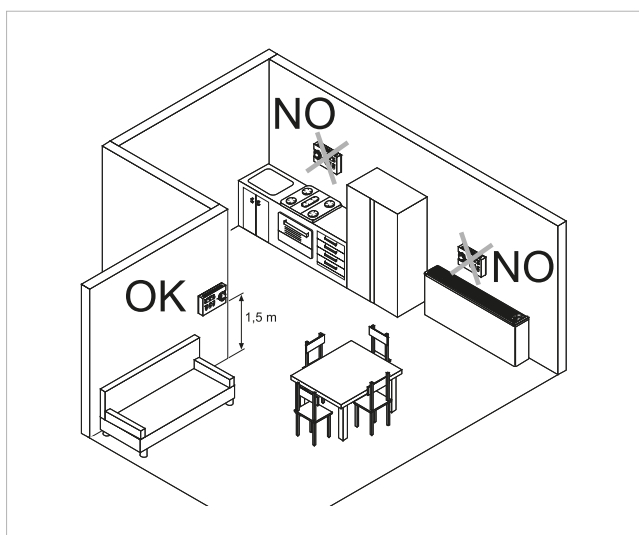
3.1 Installation

Description

The wall-mounted control panel is a thermostat with possibility of control on several device equipped with electronic control for remotization.

- ⚠ The control can control up to a maximum of 30 units.
- ⚠ The temperature probe can be removed in one of the fan-coils connected to it.

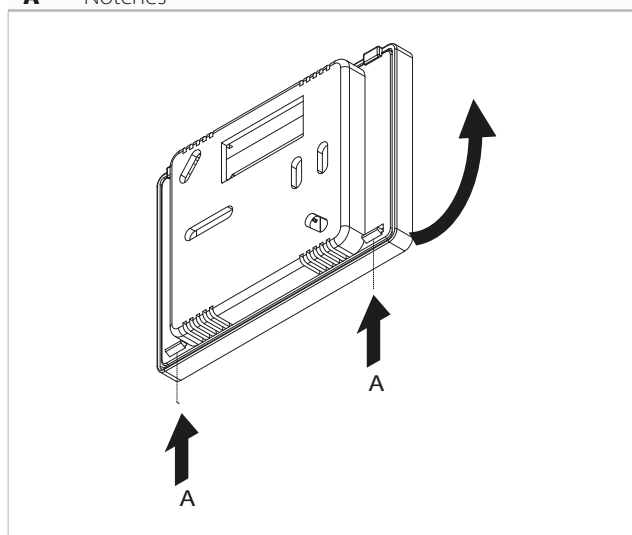
Mounting



The wall-mounted remote control must be installed:

- on internal walls
 - at a height of about 1,5 m from the floor
 - away from doors or windows
 - away from heat sources (heaters, convectors, stoves, direct sunlight)
- ⚠ The wall-mounted remote control is provided inside the package already assembled.

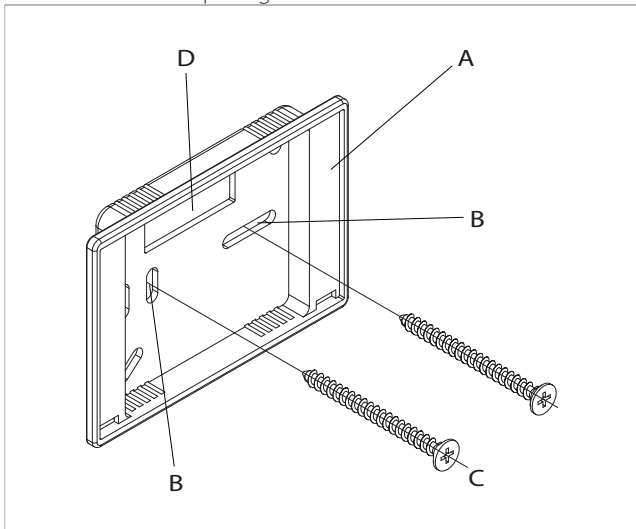
A Notches



Before wall installation:

- Unhook the protruding notches on the back side of the control.
- separate the base from the control
- use the base of the control to trace the fixing point on the wall

- A** Base of the control
- B** Holes for the wall mounting
- C** Screws
- D** Hole for the passage of the electrical connections



For the remote control wall mounting:

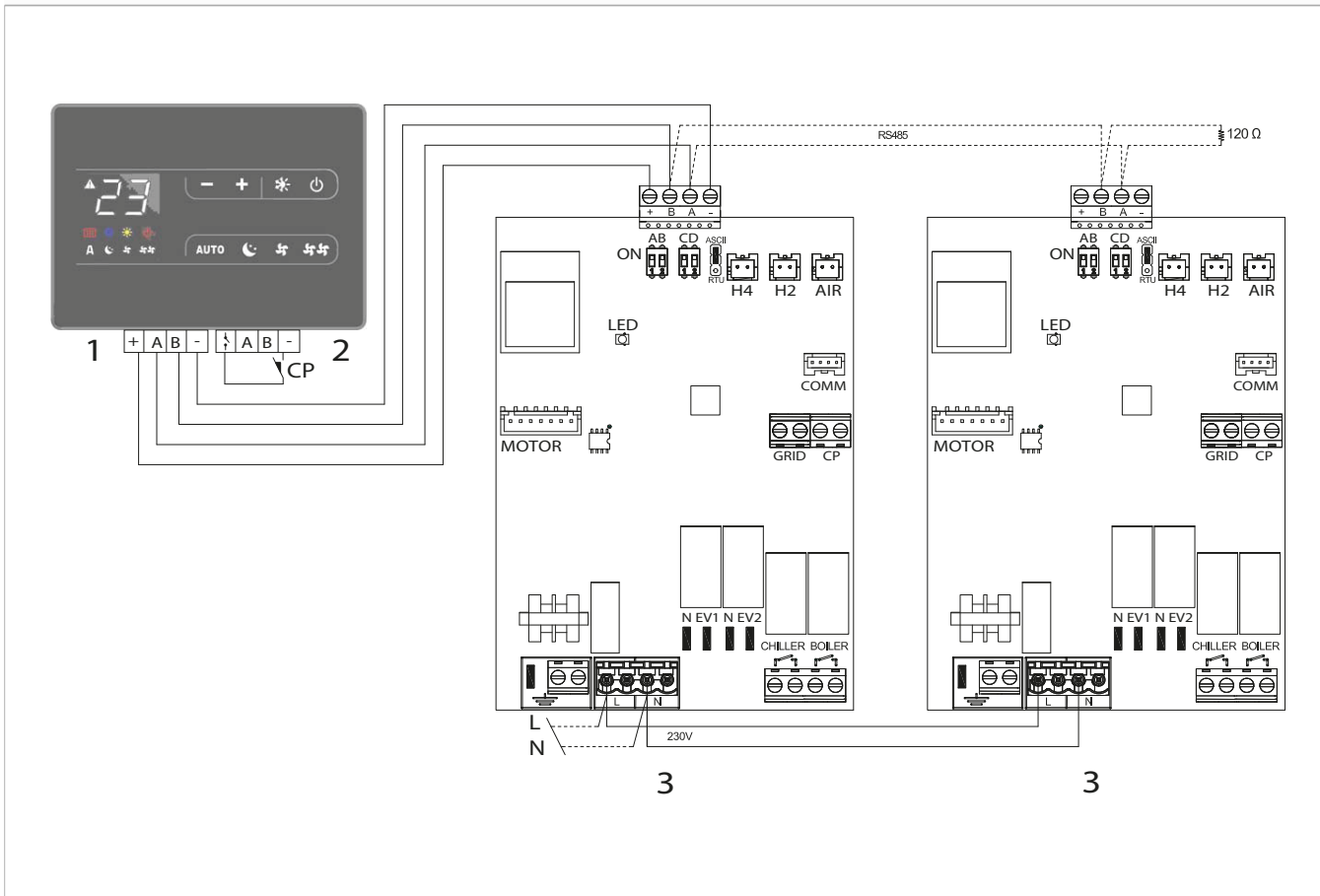
- drill holes in the wall
- pull the electric wires through the hole provided
- fix the base of the control to the wall using suitable screw and plugs
- perform the electrical connection
- close the control

⚠ Pay attention not to crush the conductors when you close the control.

3.2 Electric connections

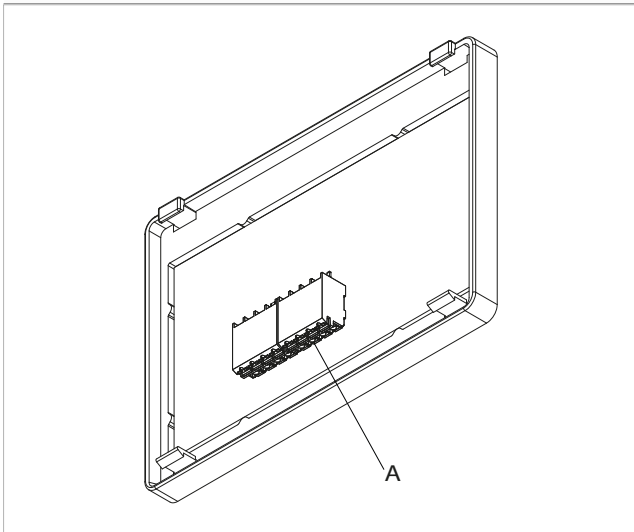
Connection diagram

1. Terminal block for device connection
2. The terminal block for CP presence contact connection
3. PCB



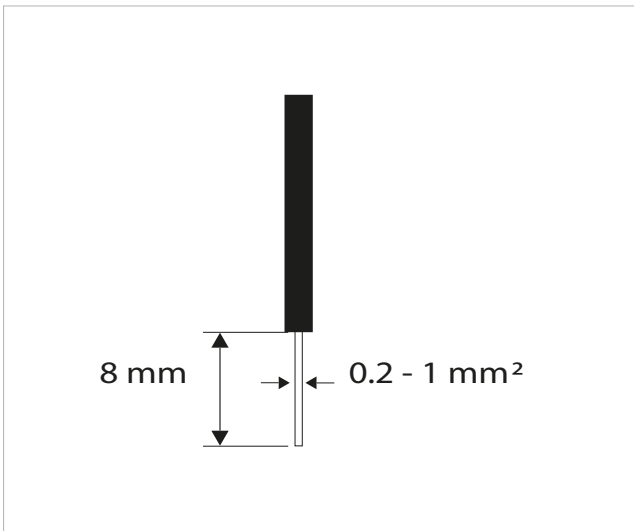
Terminal block position

A terminal block



The spring terminals allow the connection of rigid or flexible cables with sections from 0.2 to 1 mm². For cables provided with lugs with plastic collar the maximum section is reduced to 0,75 mm².

Connection to the PCB



For the connection:

- remove a portion of the insulation from the end of the cable
- follow the indication on the connection diagram
- insert the cable into the spring terminal
- insert the cable completely
- make sure they are properly fixed by pulling them slightly

⚠ When using a flexible cable you should use a pair of nose grippers for the correct insertion in the terminal block.

To disconnect:

- use a screwdriver
- press the corresponding notch

CP presence contact input connection

Through this contact it is possible to connect an external device that inhibits the operation of the device, for example:

- opening window contact
- remote on/off
- infrared presence sensor
- enabling badge

Function

When the contact connected to the CP input is closed, all the users connected will be switched off.

At the touch of a button on the display the symbol ⚠ flashes.

- ⊖ It is forbidden to connect in parallel the CP input to one of another electronic board. Use separate contacts.

RS485 Serial Connection

The wall-mounted remote control can be connected through a RS485 serial line to one or more devices, for a maximum of 30. The devices must be equipped with an electronics card suitable for remotization.

For the connection:

- follow the indication on the connection diagram
- connect respecting the indication "A" and "B"

⚠ Use a bipolar shielded cable suitable for the RS485 serial connection with a minimum section of 0,35 mm².

⚠ Keeping the bipolar cable separate from power supply cables.

⚠ Chase out the wall in order to minimize the length of the leads.

⚠ Complete the line with the 120 Ω resistance.

- ⊖ It is forbidden to make "star" connections.

3.3 Interface

Description

The wall-mounted control panel ECA649-EWF649 is a thermostat with possibility of control on several device equipped with electronic control for remotization.

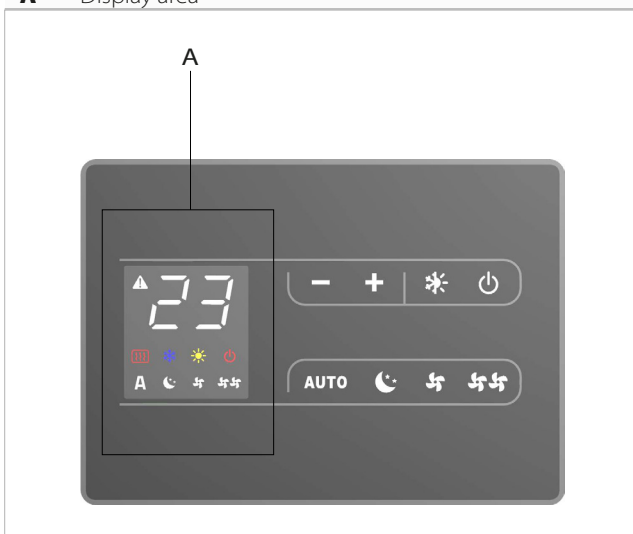
It is fitted with:

- temperature probe
- internal memory with data saving even in case of shut-down or power outage

- ⚠ The control can control up to a maximum of 30 units.
- ⚠ The room temperature probe ensures an antifreeze safety even when the control is in stand-by
- ⚠ After 20 seconds after the last action the panel brightness is reduced, only the room temperature is seen on the display. The maximum brightness is restored to the pressure of any key.

Display

A Display area

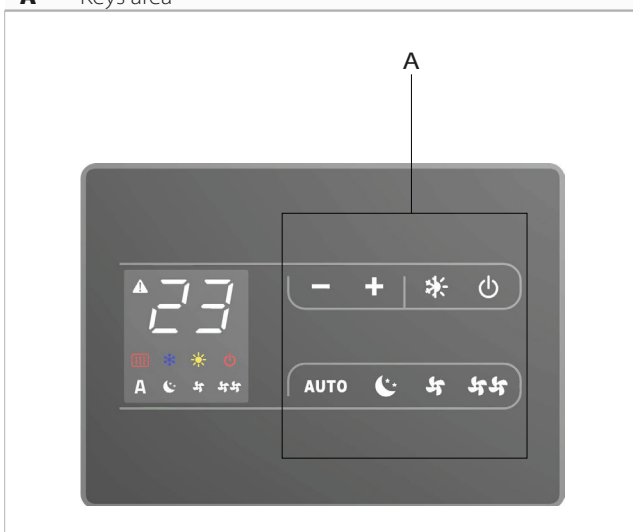


Statuses and active alarms on display.

- ⚠ Supervision on
Flashing with CP closed contact
Switched on for alarm indication
- 🔌 Resistance enabled indication
- ❄ Cooling function on
- ☀ Heating function on
- ⏻ Remote control indication off
- A** Automatic function
- 🌙 Night function
- 🌀 Silent function
- 🌀🌀 Maximum ventilation speed

Keys functions

A Keys area



Keys and functions related.

- Allows decreasing the set temperature
- +
- ☀/❄ Allows switching between heating and cooling functions
- ⏻ Allows activating or putting the device in stand-by
- AUTO** The ventilation speed will be adjusted automatically between a minimum and a maximum value
- 🌙 The ventilation speed will be reduced and the set temperature will be changed automatically
- 🌀 The ventilation speed will be limited to a maximum contained value
- 🌀🌀 Allows setting the maximum ventilation speed

General start-up




Before the activation:

- ⚠ Make sure that the remote control is connected to the mains.
- ⚠ In case of a master switch on the power supply line, switch on the system by inserting the switch.

To activate the device

- press the  key
The symbol  lights up

3.4 Main functions**Operating mode set-up****to switch the operating mode**

- press the  key for about 2 seconds
The symbol  on indicates the Heating function enable
The symbol  on indicate the Cooling function enable

⚠ In heating function the symbols is alight with setpoint higher than the room temperature.

⚠ When the setpoint is incorrect both symbols are switched off.

⚠ In cooling function the symbols is alight with setpoint lower than the room temperature.

Put in stand-by the control**To put in stand-by the control**

- press the **AUTO** key for about 2 seconds
The control goes out

⚠ In stand-by mode the control ensures an antifreeze safety. In case of temperature $<5\text{ }^{\circ}\text{C}$, the hot water solenoid valve outputs and boiler consent are activated automatically.


Set room temperature**To set-up the temperature**

- operate the   keys to decrease or increase the desired value
The displayed value change

⚠ The adjustment range goes from 16 to 28 $^{\circ}\text{C}$, with a resolution of 0,5 $^{\circ}\text{C}$.

⚠ Out of range values from 5 $^{\circ}\text{C}$ and 40 $^{\circ}\text{C}$ are allowed, except in automatic mode. These value should be set only for short periods of time.

Automatic operation**To select the Automatic function**

- press the  key for about 2 seconds
The symbol **A** on indicates the Automatic function enable

⚠ The ventilation speed is automatically adjusted between a minimum value and a maximum value based on an al-



gorithm type PI, according to the actual distance from the room temperature set-point.

Silent operation**To select the Silent operation**

- press the  key for about 2 seconds
The symbol  on indicates the Silent function enable

⚠ The ventilation speed is limited at a more reduced maximum value.

Night function**To select the Night function**

- press the  key for about 2 seconds
The symbol  on indicate the Night function enable

⚠ The ventilation speed is limited at a very low value.



⚠ The set temperature changes automatically:

- in heating function decreases by 1 $^{\circ}\text{C}$ after one hour and by another degree after 2 hours

- in cooling function decreases by 1 $^{\circ}\text{C}$ after one hour and by another degree after 2 hours

Maximum ventilation speed

To select the operation at the maximum ventilation speed

- press the  key for about 2 seconds
The symbol  on indicates the maximum speed function enable

- ⚠ Maximum power output is immediately obtained both in heating and cooling.
- ⚠ After reaching the desired room temperature, select a different function to increase the thermal and acoustic comfort.

Set the key lock





To set-up the key locking

- press both keys   for 2 seconds
The text  appearing on the display

- ⚠ All settings are inhibited by the user.
- ⚠ Repeat the sequence to unlock the control.

Brightness reduction


To reduce the display brightness

- press the  key for 5 seconds
The text  appearing on the display
- press the  key to decrease the value, wait 20 seconds
The text  appearing on the display

- ⚠ After 20 seconds from the last action the panel brightness will be reduced to increase the comfort during night use. On the display will appear only the room temperature.

Deactivation


To deactivate the display

- press the key  for about 2 seconds
All the light signals go off

- ⚠ In stand-by mode the control ensure an antifreeze safety.

Room temperature probe offset adjustment

To adjust the room temperature probe offset

- from display off, hold the key  for about 5 seconds
Access to the variation menu of the AIR probe offset displayed on the display

- ⚠ Use this adjustment carefully.
- ⚠ Adjust the measured value within a range of +/- 10 °C in steps of 0,1 °C.
- ⚠ This adjustment must be carried out only after having found actual deviations from the room temperature using a reliable tool.
- ⚠ After 20 seconds from the last action the control goes out and the settings is memorized.

3.5 Warnings

Long period shut-down

- For seasonal shutdowns or for long periods:
 - disable the device
 - set the main system switch to Off
- ⚠ The antifreeze function is not on.

Error signals

- ⚠ **E1** Room temperature probe failure located inside the thermostat
- ⚠ **E2** Failure or connection of a double remote room probe on one of the connected device

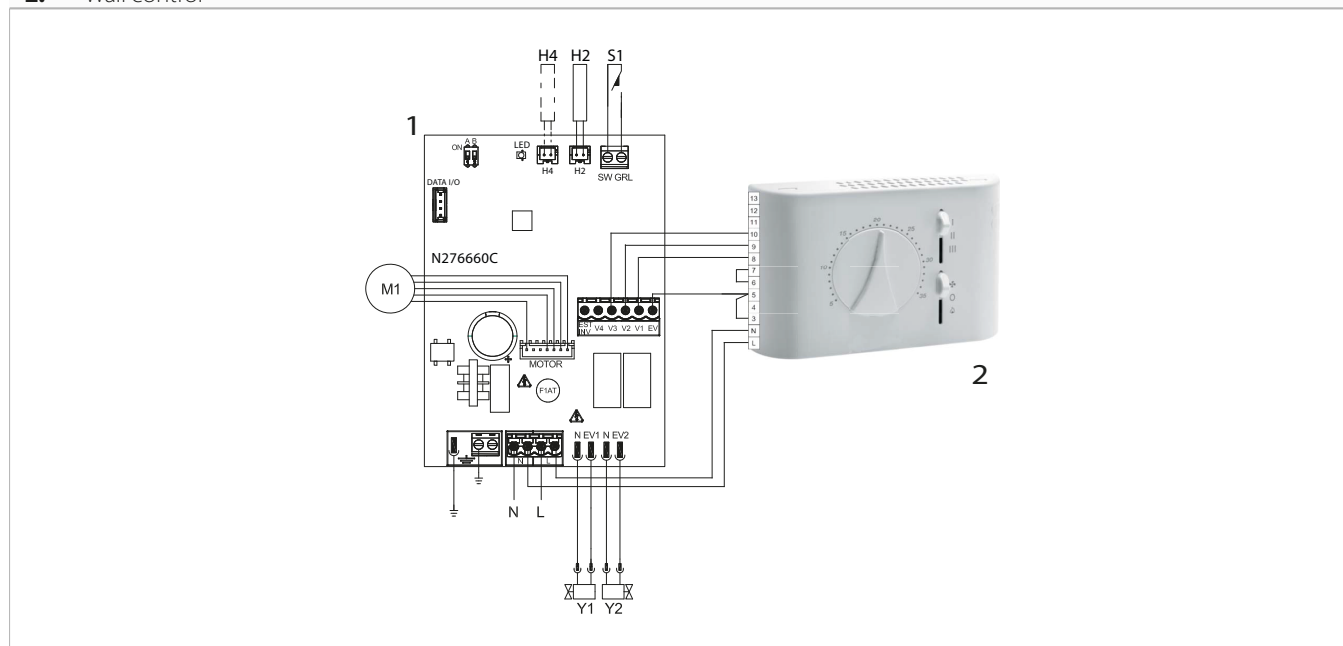
WALL-MOUNTED CONTROL B3V151 - B3V152

4.1 Electric connections

Connection diagram

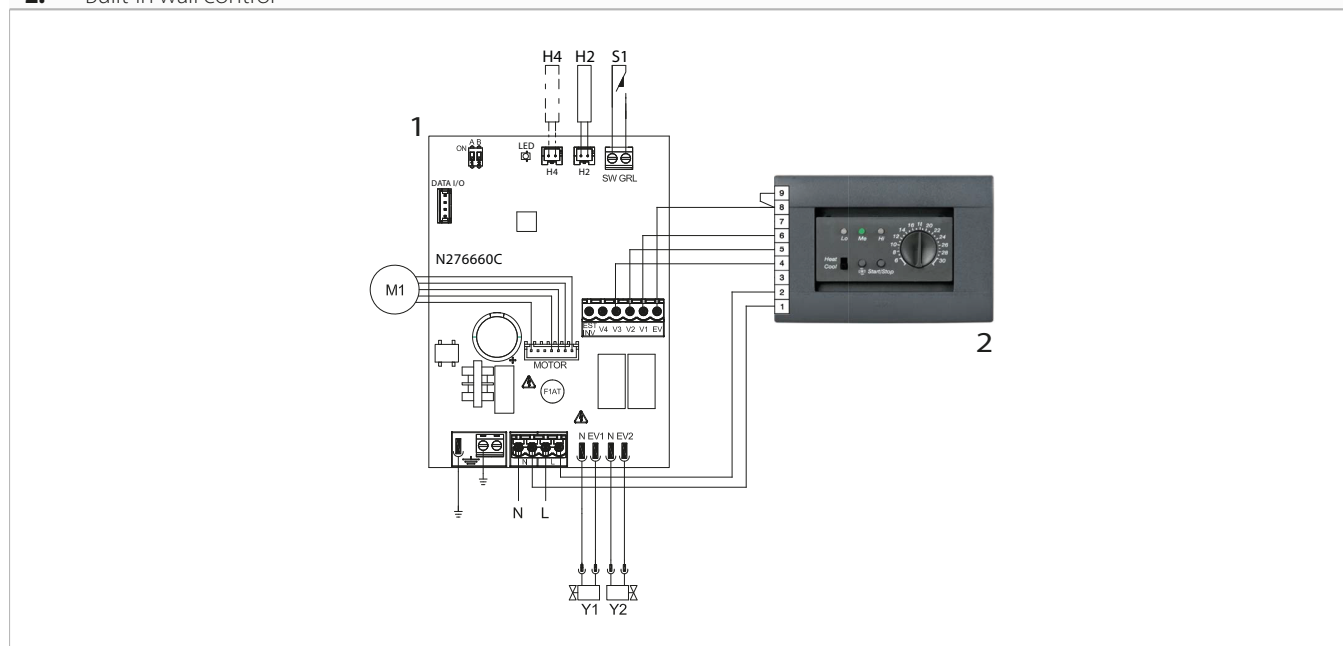
B3V151

1. PCB
2. Wall control



B3V152

1. PCB
2. Built-in wall control



MAINTENANCE

5.1 Routine maintenance

Routine maintenance is essential to keep the device always efficient, safe and reliable over time. It can be carried out with a six-monthly periodicity.

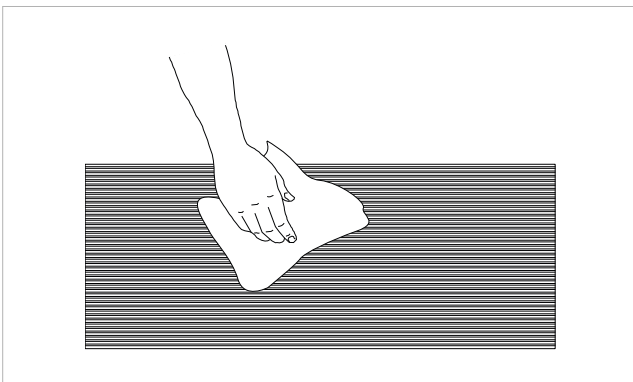
Before each cleaning and maintenance intervention:

- disconnect the device from the power mains by turning the system master switch to "OFF"

- ⚠ Wait for the components to cool down in order to avoid any burns.
- ⚠ After completing the maintenance work, must be restored the original condition.
- ⊘ It is forbidden to open the access doors and carry out any technical or cleaning intervention, before having disconnect the device from the mains supply by placing the main switch of the system on "OFF".

Six-monthly operations

External cleaning



Clean the external surface of the grid using a soft cloth dampened with water.

- ⚠ Avoid dripping water in the device.
- ⚠ Do not use abrasive sponges or abrasive or corrosive detergents as you might damage the painted surface.

Air intake filter cleaning

Cleaning the filter must be carried out:

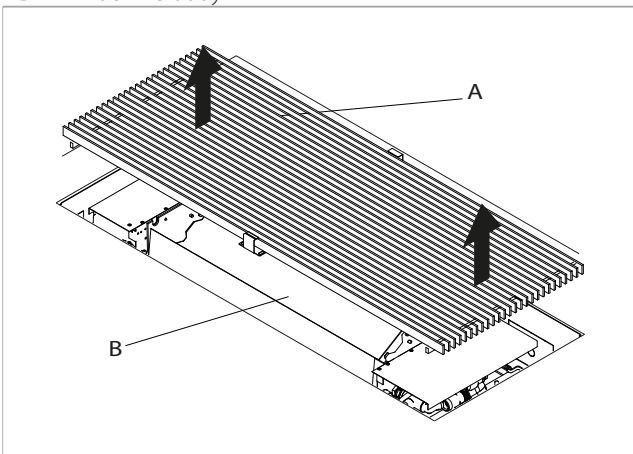
- after prolonged operation, considered the concentration of impurities in the air,

- when you plan to restart the system after prolonged disuse.

Filter extraction

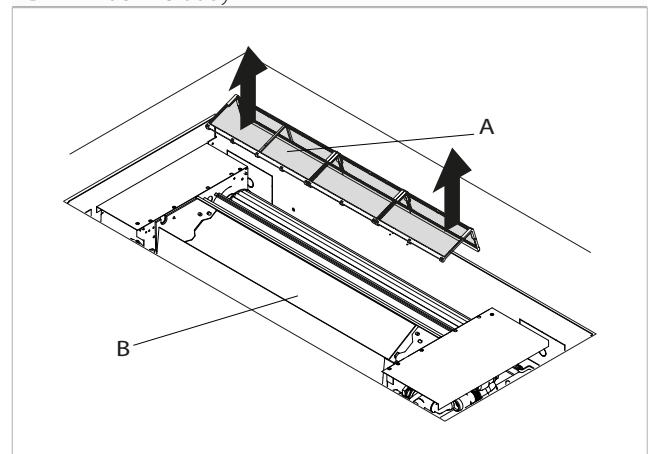
To extract the filter:

- A** grid
- B** machine body



- remove the grid by lifting it

- A** filter
- B** machine body

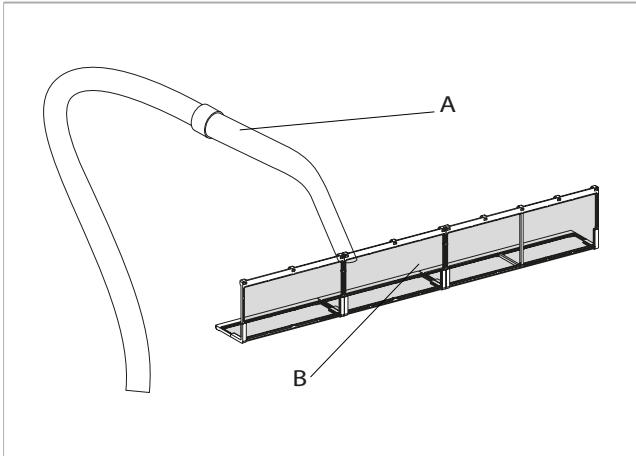


- remove the filter
- lift it slightly

- rotate until the complete exit from the housing
- remove the filter

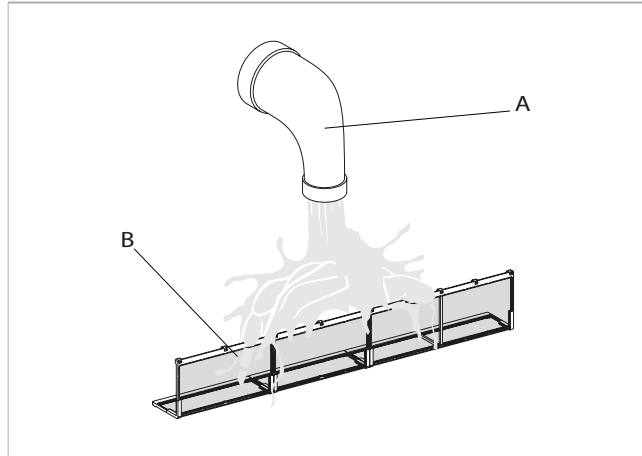
Cleaning

- A** vacuum cleaner
- B** filter



- To clean the filters:
- to use a vacuum cleaner
 - to aspirate dust

- A** running water
- B** filter



- wash the filter with running water
 - allow it dry
- ⚠ Do not use detergents or solvents to clean the filter.

Inserting the filter

Remount the filter paying particular attention to introduce the lower flap in its housing.

⚠ After finishing the cleaning of the filter, check that the grid is mounted correctly.

⚠ The device features a safety switch that prevents the fan from starting if the mobile panel is incorrectly mounted or the filter are missing.

⚠ Do not use the device without its mesh filter.

⊖ It is forbidden to use the device without its mesh filter.

5.2 Suggestions for energy saving

For a correct operation of the device and a great energy saving:

- keep the filters clean
- keep the doors and windows of the locations fitted with air conditioning systems closed as much as possible
- During summer limit the entry of direct sun rays into the rooms to be air-conditioned by means of external screens (projections, curtains, shutters, etc.)

TROUBLESHOOTING

6.1 Preliminary warnings

Should you encounter any of the anomalies below:

- the ventilation does not start even if the water circuit is filled with hot or cold water
- the device is losing water in heating mode
- the device is losing water in cooling mode
- the device generates excessive noise
- there is dew

Follow the instructions below:

- disconnect the device from power supply immediately
 - close the water taps
 - contact immediately an authorized technical support center or qualified staff
- ⚠ The interventions must be carried out by a qualified installer or by a specialized support center.
- ⊘ Do not intervene personally.

6.2 Troubleshooting table

Effect	Cause	Solution
The ventilation is delayed with respect to the new temperature or function settings.	The circuit valve requires a certain time to open and therefore to make the hot or cold water circulate inside the device.	Wait 2 or 3 minutes to allow the circuit valve to open.
The device does not activate the ventilation.	Cold or hot water is missing from the system.	Make sure the boiler or the water cooler are on.
The ventilation does not start even if the water circuit is filled with hot or cold water.	The hydraulic valve stays closed.	Demount the body of the valve and check if the water circulation is restored.
	The ventilation motor is jammed or burnt.	Check the valve operation feeding it separately to 230 V. If you were to turn on, the problem may be in the electronic control.
	The wirings are not correct.	Check the motor windings and check if the fan rotates freely.
The device is losing water in heating mode.	The leaks at the hydraulic connections of the system.	Check the electrical connections.
	Losses in the valve group.	Check the leak and tighten the connection.
There are water drops on the grid.	Losses in the valve group.	Check the condition of the gaskets.
	High humidity conditions (>60%) might generate condensation, especially at minimum ventilation speeds.	As soon as the level of relative humidity drops, the phenomena disappears. However, a few water drops falling inside the device will not cause any malfunction.
The device is losing water in cooling mode.	The condensate tray is clogged.	Slowly pour a bottle of water in the lower section of the battery to check the drainage; if necessary clean the tray and/or improve the slope of the drain pipe.
	The condensate discharge pipe does not have the slope required for correct drainage.	
	The connection pipes and the valves unit are not well insulated.	Check the pipe insulation.
The device generates excessive noise.	The fan touches the structure.	Verify
	The fan is unbalanced.	The unbalancing generates excessive machine vibrations: replace the fan.
	Check the filters for dirt and clean them if necessary	Clean filters



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N420254A - Rev. 00