Installation and maintenance manual
Manuel d'installation et de maintenance
Installations- und Wartungshandbuch
Manuale di installazione e di manutenzione
Manual de instalación y de mantenimiento

DUCTYS
1000 ÷ 4000

English | **Français** | **Deutsch** | **Italiano** | **Español**

Low and High Static Pressure Fan Coil Unit
Ventilo-Convecteurs à Pression Statique
Klimakonvektoren mit Statischem Druck
Ventilo- Convettori a Pressione Statica
Ventiloconvectores de presion estatica

IOM DT 01-N-4ALL
Part number / Code / Teil Nummer / Codice / Código : **3990689**
Supersedes / Annule et remplace / Annulliert und ersetzt /
Annulla e sostituisce / Anula y sustituye : **IOM DT 01-N-3ALL**

CE

INSTALLATION INSTRUCTION English

NOTICE D'INSTALLATION Français

INSTALLATIONSHANDBUCH Deutsch

ISTRUZIONI INSTALLAZIONE Italiano

INSTRUCCIONES DE INSTALACIÓN Español

English

CONTENTS

POWER SUPPLY MUST BE SWITCHED OFF

BEFORE STARTING WORK IN THE ELECTRIC CONTROL BOX

1. GENERAL RECOMMENDATIONS

The purpose of this Manual is to provide users with instructions for installing, commissioning, using and maintaining the units.

It does not contain the complete 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 installing the unit.

1.1. SAFETY DIRECTIONS

Follow the safety rules in forces when you are working on your appliance.

The installation, commissioning and maintenance of these units should be performed by qualified personnel having a good knowledge of standards and local regulations, as well as experience of this type of equipment.

The unit should be handled using lifting and handling equipment appropriate to the unit's size and weight.

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

Cutoff power supply before starting to work on the appliance.

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

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 of 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 Instructions.

The information contained in these Instructions are subject to modification without advance 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.

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. TECHNICAL SPECIFICATIONS

4.1. OPERATING LIMITS

Water pipes	Maximum operating pressure	10 bar
	Minimum inlet temperature	+ 5 °C
	Maximum inlet temperature	+ 90 °C
Premises air temperature	Minimum temperature	5 °C
	Maximum temperature	32 °C
Supply voltage	230 V ± 10 % / 1 ph / 50 Hz / 60 Hz	

4.2. ELECTRICAL SPECIFICATIONS

Motors - 230 V / 1 ph / 50 Hz / 60 Hz

Unit size		1000		1500		2000	
		Current absorbed (A) *	Power absorbed (w)*	Current absorbed (A) *	Power absorbed (w)*	Current absorbed (A) *	Power absorbed (w)*
Speed	V1	0.10	8	0.15	8	0.18	18
	V2	0.14	17	0.21	21	0.31	30
	V3	0.19	24	0.30	30	0.42	47
	V4	0.24	38	0.35	41	0.47	58
	V5	0.36	49	0.45	60	0.67	72

Unit size		2500		4000	
		Current absorbed (A) *	Power absorbed (w)*	Current absorbed (A) *	Power absorbed (w)*
Speed	V1	0.32	26	0.10	60
	V2	0.40	34	0.30	82
	V3	0.50	41	0.65	115
	V4	0.62	56	1.14	170
	V5	0.74	69	1.80	275

(*) Current and power drawn by the motor in operation at 230 V / 1 Ph / 50 Hz, unit not fitted with ducting and with 0 Pa pressure available for a unit without a filter. Circular duct inlet and outlet.

4.3. ELECTRIC HEATING RESISTANCES

Electric heating resistances - 230 V / 1 ph / 50 Hz / 60 Hz

Unit size	Capacity (W)	
	BE1	BE2
1000	500	/
1500	600	1 000
2000	600	1 000
2500	1 000	2 000
4000	1 250	2 500

4.4. DIMENSIONS

SEE APPENDIX

5. HANDLING

Always take great care when handling the unit.**Do not lift the unit by its condensate outlet, by the water connectors or by the duct unions (rectangular, circular or oblong).** Use a fork lift truck to make it easier to install the unit.

Avoid contact with the coil surfaces and their sharp edges as they can be dangerous.

5.1. NET WEIGHT

Unit size	Weight	Circular / circular version	Rectangular / rectangular version	J or L version	U version
1000	kg	15	14	17	20
1500	kg	18	16	21	25
2000	kg	20	18	24	29
2500	kg	23	20	26	33
4000	kg	31	29	37	39

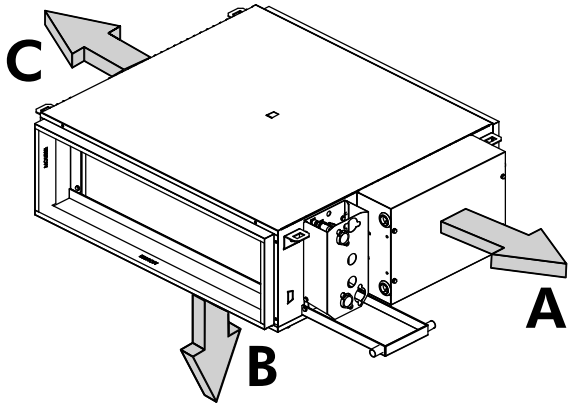
Weight in functioning order, without valve

6. INSTALLATION

The unit is not designed to withstand weights or stresses from adjacent equipment, pipe work or constructions. Any foreign weight or stress on the unit structure could lead to a malfunction or a collapse with dangerous consequences for personnel and property. In such an event, the warranty shall be null and void.

6.1. CLEARANCE

Minimum free clearance for maintenance



Unit size	A (mm)	B (mm)	C (mm)
1000	600	300	200
1500	600	300	200
2000	1 000	300	200
2500	1 000	300	200
4000	1 200	300	200

A : Clearance for access to the electrical control box.

Clearance for access to the hydraulic connections.

B : Clearance for removing the filter and access to the fan motor assembly.

C : Clearance for access side opposed to the electrical control box and the hydraulic connections.

6.2. UNIT LOCATION

The unit base shall be arranged as indicated in the manual. There could be a risk of personal injury or damage to property in the event of the unit being incorrectly supported.

1. The units are designed for installation above a suspended ceiling.
2. Install the unit in a location where the structure is capable of withstanding the weight of the unit.
3. Install the unit in a location which enable the unit's aeraulic inlet and outlet connections to be made.
4. Install the unit in a location providing for easy condensate evacuation.
5. Ensure that there is sufficient free space between the suspended ceiling and the solid ceiling for the unit to be located.
6. Take care to leave adequate space around the unit for maintenance access (for minimum free space on the service elevation for access to the filter and the fan motor assembly).

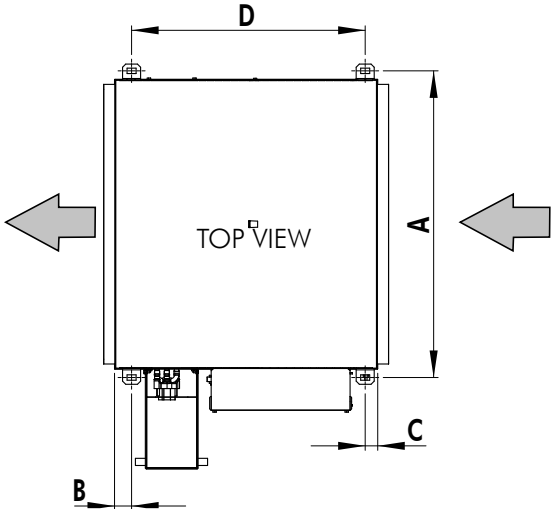
Do not install the unit in a machinery room or a kitchen where vapours or oil mist could pass through the unit.

Do not install the unit in a laundry or in very damp areas (bathroom, sauna, etc.).

6.3. INSTALLATION INSTRUCTIONS

1. The unit is designed to be suspended on threaded rods or screw-spikes to be supplied by the installer. The mounting lugs with slot type holes are fitted to the upper part of the unit.
2. Attach the 4 threaded rods or spike-screws to the solid ceiling in accordance with the diagram opposite. Place 4 nuts and washers on each threaded rod.
3. Lift up the unit and slide the 4 threaded rods through the mounting lugs slots (the unit casing must not touch the ceiling).
4. Attach the unit with 4 further firmly tightened washers, nuts and lock nuts. We recommend fitting rubber blocks to prevent any risks of vibration be transmitted to the structure.
5. Lock the unit in its final location and **level it off with a spirit level** in order to guarantee correct operation and condensate evacuation.
6. The unit must be installed so that the water drains towards the evacuation connection.

Mounting lugs



Unit size	A (mm)	B (mm)	C (mm)	D (mm)
1000	580	37	27	518
1500	680	37	27	518
2000	780	37	27	518
2500	880	37	27	518
4000	1 180	37	27	540

7. HYDRAULIC CONNECTIONS

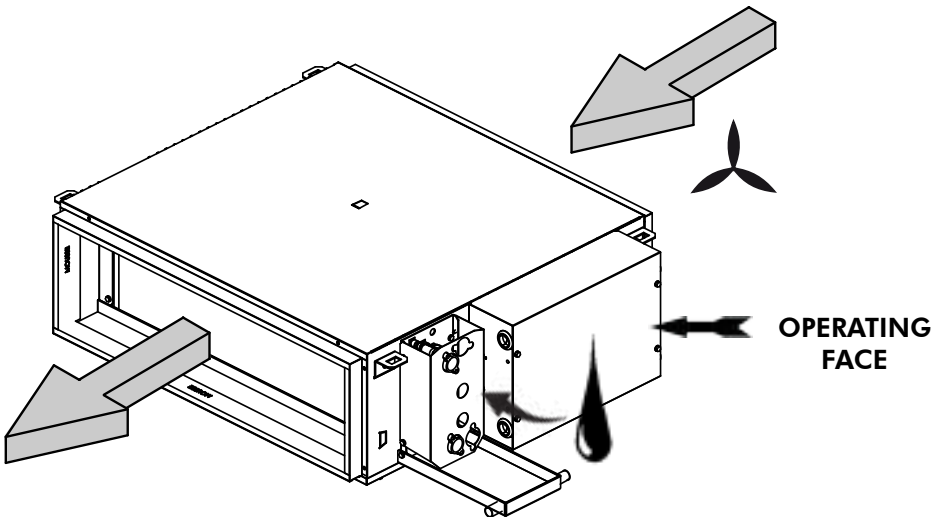
The fan-coil units may contain a small amount of oil incompatible with plastic polyethylene piping (PER/HTA/PVC). The coil should be rinsed out before use to avoid any problem.

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

7.1. OPERATING FACE

The service panel of the Left / Right versions is defined according to the location of the hydraulic unions when the unit is viewed by the operator from the "blowing face".

Note: In the example below, the operating face is on the right.



7.2. COIL WATER CONNECTIONS

The units are equipped, in their standard 2-pipe configuration, with a main chilled water coil with 2 rows (DUCTYS 1000), 3 rows (DUCTYS 1500-2000-2500) and 4 rows (DUCTYS 4000).

In the 4-pipe configuration, the unit is equipped , in the same block with 3 rows (DUCTYS 1000), 4 rows (DUCTYS 1500-2000-2500) and 5 rows (DUCTYS 4000), with chilled water coil and heated water coil (on an independent circuit).

The coil headers are equipped with air vent and drain plug. 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.The coil(s) MUST be drained of fluid in the event of the unit being kept out of service in buildings subjected to negative ambient temperatures with the possibility of the coil icing.

In certain cases the tubes of bottom are not drainable. However, the hydraulic connections on the lower part of the coil should be vented to the atmosphere by disconnecting all connectors, valves and pipes from the main hydraulic circuit.

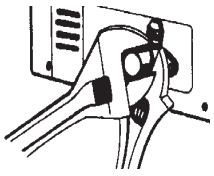
Flexible pipes are recommended for connecting the coils. Take care not to over-tighten the water connections. Over-tightening can lead to excessive strains on the materials in the event of major temperature variations.

All the water pipes must be insulated to avoid sweating and heat loss.

The supply water (2-pipe and 4-pipe coils) should pass through the bottom header.

To avoid damaging the coil, tighten the water pipe connectors on each header using a counter-wrench.

When installing the unit, take care not to push the coils headers towards the inside of the unit when tightening the connections.



For 4-pipe fan coil units with a hydraulic connection left side, the hot coil is located after the cold coil, in relation to the direction of the air.However, on which a straight hydraulic connection is chosen, the hot battery is located before the cold battery.

Valves are supplied mounted.

Unit size	Version		Coil connections
1000	**2 Pipes & 4 Pipes**		Female swivel coupling Ø1/2"
1500	**2 Pipes & 4 Pipes**		Female threaded type Ø1/2"
2000	**2 Pipes & 4 Pipes**		Female threaded type Ø1/2"
2500	**2 Pipes & 4 Pipes**		Female threaded type Ø1/2"
4000	**2 Pipes**		Female swivel coupling Ø3/4"
	4 Pipes	❄	Female swivel coupling Ø3/4"
		🔥	Female swivel coupling Ø1/2"

The use of regulation valves (supplied as an accessory or by the client) is mandatory to ensure that the appliance operates correctly.

The installation and operating conditions require the MANDATORY fitting of a valve ON the unit OR/AND upstream in the hydraulic circuit. This is to prevent chilled water from circulating in the appliance when the fan is not operational (condensation issue) or to prevent the simultaneous circulation of chilled water and hot water in a 4-pipes exchanger.

If the water pipes are exposed to temperatures below 0 °C, take the necessary precautions (draining, antifreeze, etc.) to avoid the coils freezing. Adding antifreeze to the circuit reduces the unit's performance (if necessary, please contact our sales network).

7.3. COIL WATER VOLUME

Unit size	Water volume (in liters)		
	2-pipe	4-pipe	
		❄	🔥
1000	0.64	0.62	0.19
1500	0.70	0.68	0.23
2000	0.80	0.77	0.27
2500	0.90	0.85	0.31
4000	1.50	1.80	0.45

7.4. CONDENSATE DRAIN CONNECTION

A condensate tray is supplied with a 5/8" exterior diameter copper drain hole.

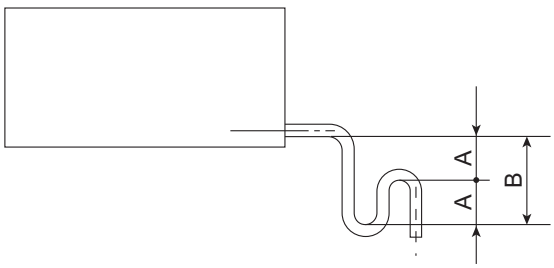
Ensure that the condensed water will drain properly from the tray, which must be connected to the main evacuation pipe.

The evacuation pipe must be installed with a downhill angle. Check that the evacuation pipe work has a siphon which must be made in accordance with the illustration below. Moreover, the evacuation pipe must be insulated to prevent condensation forming on the outside of the pipe.

Check that there is no uphill section in the pipe run which might prevent condensate evacuation.

All foreign bodies must be removed from the condensate tray.

Siphon for condensate evacuation



The height A must be equal to **2 times** the value of the negative pressure present in the condensate reception zone

Example :

negative pressure = 40 mm

height A = 80 mm, height B = 160 mm.

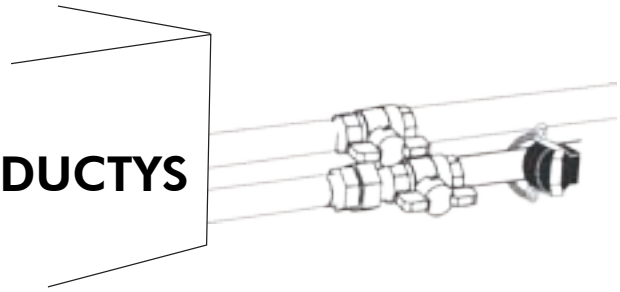
Check that the condensates drainage hose is connected and allows liquid to drain freely.

Check that condensates actually drain properly (installation with or without drainage pump) by pouring water into the condensates tray (pump electricity supply switched on).

7.5. INSTALLATION OF THERMOSTAT OR TEMPERATURE SENSOR (CHANGE OVER)

7.5.1. TRM-FA OR TRM-VP

The thermostat (change-over switch) supplied is to be mounted on the water supply pipe.

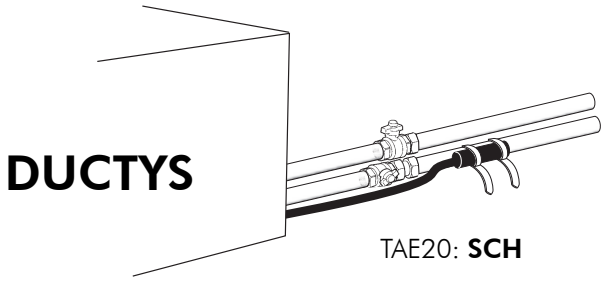


7.5.2. TAE20 OR AQUANET OR AQUASIMP

The temperature sensor (change over) supplied is to be fitted to the water inlet tube.

Before assembling the change over sensor, coat the tube with heat conducting paste to guarantee that the real temperature is recorded.

The M and B2 change over sensor inputs can be connected to the mains power supply. If it is necessary to extend the sensor wires, ensure that wires appropriate for this voltage are used.



TAE20: **SCH**
AQUANET: **WPT**
AQUASIMP: **WPT**

8. AERAULIC CONNECTIONS

Only the supply air is insulated.

The unit is fitted with a pre-cut inlet for fresh air intake:

➢ Ø100mm or Ø125mm

In no event should one or more of the apertures be blocked.

If one of these apertures were to be blocked, it would create a drop in unit available static pressure, and poor air irrigation on the coil surface, leading to a significant drop in unit performance and possible fan motor damage.

8.1. DUCT CONNECTION DIMENSIONS

SEE APPENDIX

9. ELECTRICAL CONNECTIONS

WARNING

BEFORE CARRYING OUT ANY WORK ON THE EQUIPMENT, MAKE SURE THAT THE ELECTRICAL POWER SUPPLY IS DISCONNECTED AND THAT THERE IS NO POSSIBILITY OF THE UNIT BEING STARTED INADVERTENTLY.

NON-COMPLIANCE WITH THE ABOVE INSTRUCTIONS CAN LEAD TO INJURY OR DEATH BY ELECTROCUTION.

9.1. WIRING DIAGRAM AND LEGEND

SEE APPENDIX

SE 4418	model DUCTYS 1000 + EC motor	230V 50Hz/60Hz +/- 10%
SE 4419	model DUCTYS 1000 + EC motor + EcoSpeed 3	230V 50Hz/60Hz +/- 10%
SE 4420	model DUCTYS 1000 + EC motor+ Aquanet	230V 50Hz/60Hz +/- 10%
SE 4269	model DUCTYS 1500-2000-2500-4000 + EC motor	230V 50Hz/60Hz +/- 10%
SE 4270	model DUCTYS 1500-2000-2500-4000 + EC motor + EcoSpeed 3	230V 50Hz/60Hz +/- 10%
SE 4271	model DUCTYS 1500-2000-2500-4000 + EC motor+ Aquanet	230V 50Hz/60Hz +/- 10%

9.2. POWER SUPPLY

All fan coil units are designed for operation under 230 volts, single phase, 50 or 60 cycles .

A voltage variation of ± 10 % with regard to nominal voltage 230 V is acceptable.

Note: The Model 70 is not available in 60 Hz.

IMPORTANT

Short circuit protection shall be provided. This protection shall comprise fuses or circuit breakers with high breaking capacity, mounted on the distribution board.

- Fuse available as an option
- Cable not supplied

9.3. ELECTRICAL CONNECTIONS

The electrical installation must be performed by a fully qualified electrician, and in accordance with local electrical standards and the wiring diagram corresponding to the unit model.

Any modification performed without our prior authorisation may result in the unit's warranty being declared null and void.

The power supply cable section must be sufficient to provide the appropriate voltage to the unit's power supply terminals, both at start-up and under full load operating conditions.

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.

Line and low voltage wiring must be done in accordance with electrical code whichever is applicable. Earthing of unit is imperative.

Manufacturer or its representative cannot be held responsible for accidents resulting from incorrect or non-existent earthing.

A device to disconnect all the power conductors with an approved minimum opening distance must be included in the mains power supply according to best installation practices.

To perform electrical wiring of the unit, please refer to the wiring diagram pasted on the unit casing.

9.4. REGULATION

As standard, the units are supplied without regulation equipment.

However, certain control devices (fan speed selector, remote thermostat, etc.) can be supplied according to request.

In all events, these regulation devices are only intended to control **a single unit**.

Do not connect several units to a single ventilation speed selector or regulation thermostat without using auxiliary relays.

Check that the current absorbed by the motors and the electrical heaters is compatible with the cut-out capacity of the control device contacts.

9.4.1. THERMOSTAT LOCATION

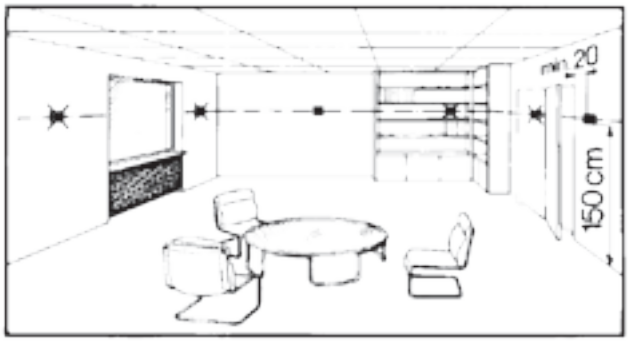
The unit must be installed and fitted in accordance with current safety standards by a qualified technician.

Fitting height: about 1.50 m above floor level.

Take care not to locate the thermostat in draughts created by doors and windows.

Also ensure that the thermostat is located in the room's normal thermal currents and that it is not located in shelving or covered by curtains.

Any source of parasitic heat negatively influences temperature regulation accuracy. Therefore, avoid the sun's rays or proximity to portable heating devices, electric lights, chimneys, televisions, etc...



9.5. ELECTRIC HEATING RESISTANCES

Factory mounted electrical heaters incorporate a self-resetting thermal cut-out and a non-self-resetting thermal cut-out which cut the power supply to the heaters in the event of an abnormal airflow reduction.

The wiring diagram affixed to the unit illustrates the connections to be made.

The electric heating resistances must never operate without ventilation.

10. COMMISSIONING

10.1. PRE-START CHECK LIST

10.1.1. ELECTRICAL CHECK

1. Electrical installation has been carried out according to unit wiring diagram and the Supply Authority Regulations.
2. Size fuses or circuit breaker has been installed at the main switchboard.
3. Supply voltages as specified on unit wiring diagram.
4. All cables are properly identified and tight connected at the unit.
5. the cables and wires are clear of or protected from pipework and sharp edges.

10.1.2. HYDRAULIC CHECKS

1. Check that the water inlet and outlet connections are correct.
2. Check that the hydraulic circuit is filled correctly and that 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.
3. Adjust the water flow in order to comply with the specifications.
4. Check that the water quality complies with the indicated standards.
5. Check that the condensates drainage hose is connected and allows liquid to drain freely.
   Check that condensates actually drain properly (installation with or without drainage pump) by pouring water into the condensates tray (pump electricity supply switched on).

10.1.3. VISUAL CHECK

1. Clearances around unit including outdoor air entry and discharge openings and service accesses.
2. Unit mounted as specified.
3. For loose or missing bolts or screws.

10.1.4. DUCTING

1. Connections flexible type, secure and detachable for service access.
2. Seams and joints airtight.
3. Check that the air filter is clean and correctly installed.
4. Check that the fan wheel is rotating free on it shaft.

11. OPERATION

The unit operates in different ways, depending of the control options that have been installed:

- AQUANET
- AQUASIMP
- TRM-FA
- TRM-VP
- TAE 20

SEE APPENDIX

11.1. AQUANET OR AQUASIMP

AQUANET

SEE SPECIFIC MANUAL

AQUASIMP

11.2. ROOM THERMOSTAT TRM-VP AND TRM-FA

11.2.1. USE

The room thermostat of the air conditioner regulates the room temperature. It is designed for closed, dry rooms such as flats, offices, etc.

Maximum acceptable relative humidity of the air : 95%. This value should not be exceeded.

Avoid condensation.

11.2.2. SWITCHES

Linear switch

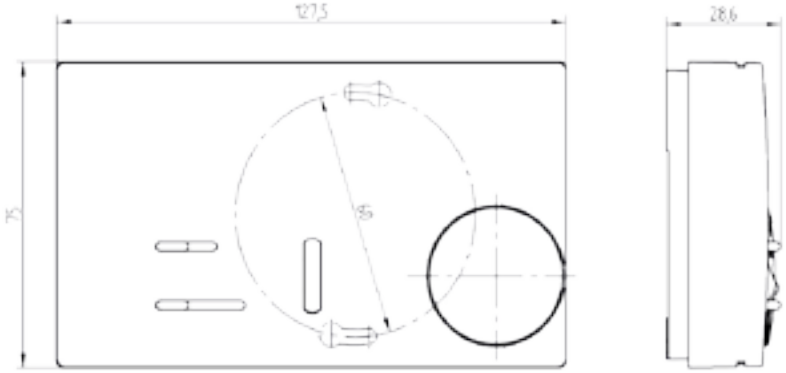
Switch 0 - I

- ON "I"
- OFF "0"

Linear switch

- COOLING
- HEATING

11.2.3. DIMENSIONS



11.2.4. ELECTRICAL CONNECTIONS

Connection of the thermostat **TRM-VP** and **TRM-FA**.

Connections should be made according to the diagram (SEE APPENDIX).

Max. cross-sectional area of wires : 2,5 mm^2

11.2.5. WALL MOUNTING

- ➢ Remove the thermostat control knob, the screw and the cover.
- ➢ On a flat surface, mount the control panel using plugs and screws.
- ➢ Install the cover, the screw and the thermostat control knob.

11.2.6. TECHNICAL CHARACTERISTICS

Operating voltage	230V 50Hz
Contact configuration	SPDT
Temperature range	5 to 30°C
Switching current at 230V AC	6A (cos φ=1) / 3A (cos φ =0.6)
Switching differential	approx. 0,5 K
Sensor system	bimetal
Switches	ON / OFF
	mode of operation
	fan speed

11.2.7. FINAL OPERATIONS

11.2.7.1. ADJUSTMENT OF THE TEMPERATURE RANGE

The room thermostat is set in the factory for a minimum temperature of +5°C and a max. temperature of +30°C.

Two rings are provided inside the knob for reducing the temperature range.

- ➢ Example: 12°C to 25°C.

11.2.7.2. ADJUSTMENT PROCEDURE

1. Setting the temperature range
   e.g. max. 25°C, min. 12°C.
2. Remove the control knob.
3. Use a pointed object to align the mark on the red ring (max. value) with the desired maximum temperature (25°C), turning the red index opposite the outside numbers counterclockwise.
4. Use a pointed object to align the mark on the blue ring (min. value) with the desired minimum temperature (12°C), turning the blue index opposite the inside numbers clockwise.
5. Install the control knob.

The temperature ranges can be graduated in:

- ➢ degrees Celsius °C
  from 5°C to 30°C
- ➢ number 1 to 6
  1=5°C
  2=10°C
  3=15°C
  4=20°C
  5=25°c
  6=30°C

11.3. TAE20 ROOM THERMOSTAT

11.3.1. FIELDS OF APPLICATION

- Regulating ambient temperature in rooms heated or cooled.
- Opening and closing the valve.
- Cutting in and out the electric heating.
- Controlling the three fan speed.

11.3.2. DESCRIPTION

The unit comprises two parts:

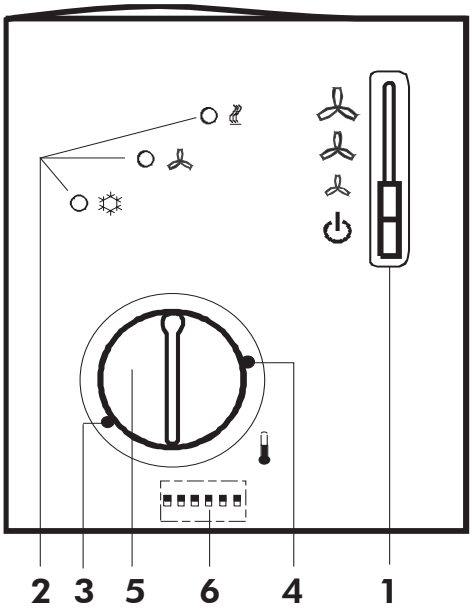
- A plastic case, housing the electronics, the controls and an internal ambience sensor.
- A mounting plate.

The case is hooked onto the fitted mounting plate, then click fastened.

The screw terminal connections are located on the mounting plate, with the DIP switches on the back of the case.

11.3.3. ADJUSTMENT AND CONTROL ELEMENTS

- Operating mode switch "ON-OFF" and manual fan speed selection).
- Electro-luminescent diodes for displaying the heating and cooling modes and the fan.
- Minimum temperature setting limiter (adjustable by increments of 1 K). Mechanical stop accessible by removing the button 5.
- Maximum temperature setting limiter (adjustable by increments of 1 K). Mechanical stop accessible by removing the button 5.
- Ambient temperature setting adjustment button.
- Set of DIP switches.



DIP switch ref. 6	Function N°	"ON" position	"OFF" position
1	Fan control	Fan control is temperature dependent in all modes	In normal mode, the fan control is independent of the temperature [1]
2	Mode changing via an external switch	Switching between normal mode and energy saving mode	Switching between normal mode and stand by [1]
3	Switch action direction for external mode switching	Switch activated when the switch is closed (N.O. "Normally open") [1]	Switching activated when the switch is open (N.C. "Normally close")
4	Stand by	Antifreeze control deactivated	Antifreeze control activated [1]
5	Differential	1 K in heating mode[1] 0,5 K in cooling mode	4 K in heating mode 2 K in cooling mode
6	Neutral zone in normal mode	2 K [1])	5 K
7	Temperature setting variance	2 K [1])	4 K
8	Electric heating	Activated in cooling mode[1])	Deactivated in cooling mode

[1] Factory setting

REFER TO SPECIAL TAE 20 ROOM THERMOSTAT MANUAL

11.4. OPERATING CHECK LIST

11.4.1. GENERAL

1. Before initial start up, be sure that the fan wheel is rotating free on it shaft.
2. Make sure that the filter is correctly positionned on its bracket.
3. Ensure that all hydraulic connections are tightened correctly.
4. Cheek for any unusual noises or vibration in the running components.
5. Check that the condensates drainage hose is connected and allows liquid to drain freely.
   Check that condensates actually drain properly (installation with or without drainage pump) by pouring water into the condensates tray (pump electricity supply switched on).

11.4.2. ELECTRICAL

➢ Ensure that all electrical connections are tightened correctly.

11.4.2.1. OPERATING VOLTAGE:

➢ Recheck voltage at unit supply terminals.

11.4.2.2. CONTROL

1. Operate system and thermostat switches.
2. Check unit is wired for correct control of unit fan, cooling and heating modes.

11.4.3. FINAL CHECK

1. All panels and fan guards are in place and secured.
2. Unit clean and free of remainder installation material.

12. FINAL TASKS

If needed, fix the cables and the pipes on the wall with clamping collars.

Operate the air conditioner in the presence of the user and explain all functions.

Show him how to remove, clean and place back the filters.

Take care

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

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

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

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

13. MAINTENANCE

The user is responsible for ensuring that the appliance is in a proper working condition and that technical installation as well as the regular maintenance operations are performed by properly trained technicians and in accordance with the instructions contained in this manual.

13.1. REGULAR MAINTENANCE

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.

Maintenance must be performed by appropriately experienced personnel only.

WARNING : Isolate unit from power supply before working on unit.

13.2. GENERAL INSPECTION

Carry out a visual inspection of the complete installation in service.

Check the general cleanness of the installation, and check if the condensate evacuations is not blocked, before the cooling season.

Check the condition of the condensate tray by pulling it out of the casing.

13.3. AIR FILTER

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

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

Filter changes are required at the regular intervals. The time period between changes will depend upon the specific operating conditions.

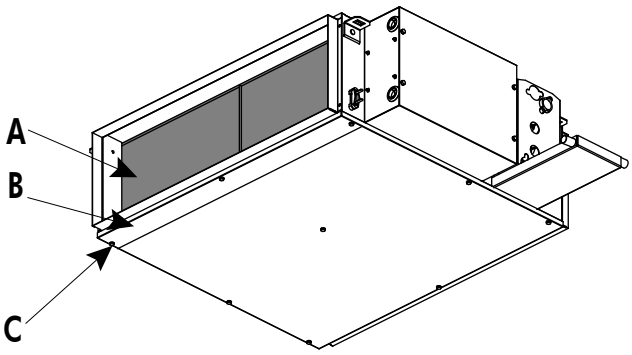
Some applications such as hotels where there is a lot of lints from carpeting will require more frequent filter changes.

If light cannot be seen through the filter, when held up to sunlight or a bright light, it should be washed or changed.

The fan coil unit shall have a filter installed in the return air side. When the filter is not fitted inside the unit, the installor shall install its own filter in the return grill or duct.

To remove the air filter, unscrew the 9 fixing screws (**C**) to release the access panel (**B**) to reach the filter(**A**).

Watch out, the air filter could possibly fall during opening of the access panel.



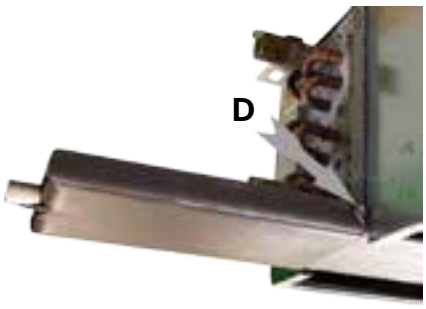
A : Filter.

B : Filter access panel.

C : Filter access panel screws.

13.4. CONDENSATE TRAY

The condensate tray must be checked regularly to ensure that the evacuation pipe is not blocked. If required, it can be cleaned and washed with water.



To remove the condensate tray :

1. Remove the filter access panel (**B**).
2. Unscrew and remove the bottom panel (**screws C**).
3. Unscrew the screw **D**

Watch out, the condensate drain pan could possibly fall during removing of the bottom panel.

13.5. COILS

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.

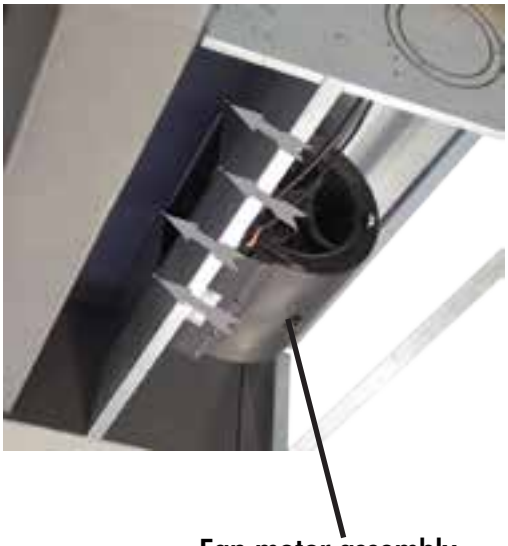
13.6. FAN MOTOR ASSEMBLY

The fan motor assembly does not require any particular maintenance. The motors are equipped with sliding bearing. Adding oil is not necessary. However, each time regular maintenance is performed, the fan should be inspected to check that it turns freely without friction.

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 :

- ➢ To withdraw the lower central panel.
- ➢ Disconnect the fan motor assembly power supply starting from the electric box.
- ➢ Unscrew the fan motor assembly retaining screws.



Fan motor assembly

13.7. ELECTRICAL SECTION

Check that the main power supply cable is not damaged or altered in such a way as to affect the insulation.

The contact surfaces of relays and contactors should be inspected regularly by an electrician and replaced as judged necessary. On these occasions the control box should be blown out with compressed air to remove any accumulation of dust or other contaminants.

Check the earth grounding connection.

13.8. WATER PIPES

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

BEFORE CARRYING OUT ANY OPERATION ON THE EQUIPMENT, CHECK THAT THE ELECTRICAL POWER SUPPLY IS SWITCHED OFF AND THAT IT CANNOT BE SWITCHED ON INADVERTENTLY.

IT IS RECOMMENDED THAT THE DISCONNECT SWITCH BE PADLOCKED

13.9. SERVICING CHECKLIST

13.9.3.2.1. CASING

1. Clean the outer panels.
2. Remove the panels.
3. Check that the insulation is not damaged. Repair as required.

13.9.3.2.2. CONDENSATE DRAIN PAN

1. Check that the drainage orifices, conduits and siphon are not blocked.
2. Eliminate all accumulated dirt.
3. Check that no traces of rust are present.

13.9.3.2.3. COILS

1. Clean the fin surfaces as required.
2. Clean or replace the filters.
3. Check the condition of the fan and the fan motor.

13.9.3.2.4. ELECTRICAL EQUIPMENT

1. Check nominal current draw and the condition of the fuses.
2. Check the tightness of the screw terminals.
3. Perform a visual check of the condition of the contacts.
4. Check the general tightness of all cable connections.

Replace the panels and add any missing screws.

14. IN CASE OF WARRANTY - MATERIAL RETURN PROCEDURE

Material must not be returned without permission of our After Sales Department.

To return the material, contact your nearest sales office and ask for a "return form". The return form shall be sent with the returned material and shall contain all necessary information concerning the problem encountered.

The return of the part is not an order for replacement. Therefore, a purchase order must be entered through your nearest distributor or regional sales office. The order should include part name, part number, model number and serial number of the unit involved.

Following our personal inspection of the returned part, and if it is determined that the failure is due to faulty material or workmanship, and in warranty, credit will be issued on customer's purchase order. All parts shall be returned to our factory, transportation charges prepaid.

15. ORDERING SERVICE AND SPARE PARTS ORDER

The part number, the order confirmation and the unit serial number indicated on the name plate must be provided whenever service works or spare parts are ordered.

For any spare part order, indicate the date of unit installation and date of failure. Use the part number provided by our service spare parts, if it not available, provide full description of the part required.

APPENDIX
ANNEXE
ANLAGE
ALLEGATO
ANEXO

APPENDIX

ANNEXE

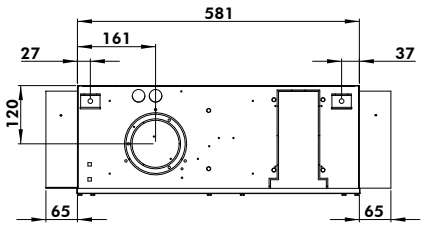
ANLAGE

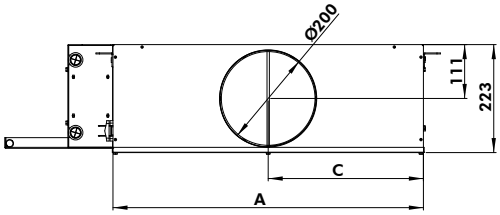
ALLEGATO

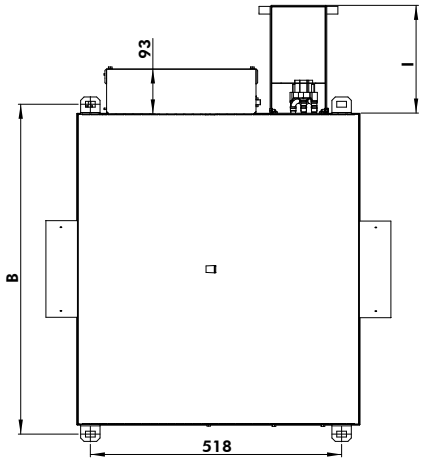
ANEXO

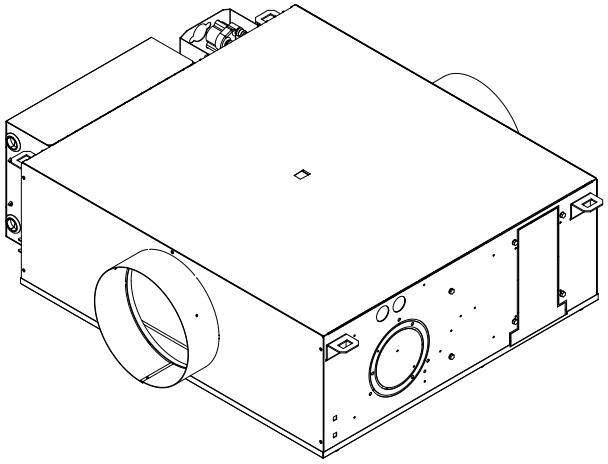
DIMENSIONS
DIMENSIONS
ABMESSUNGEN
DIMENSIONI
DIMENSIONES

1 X Ø200



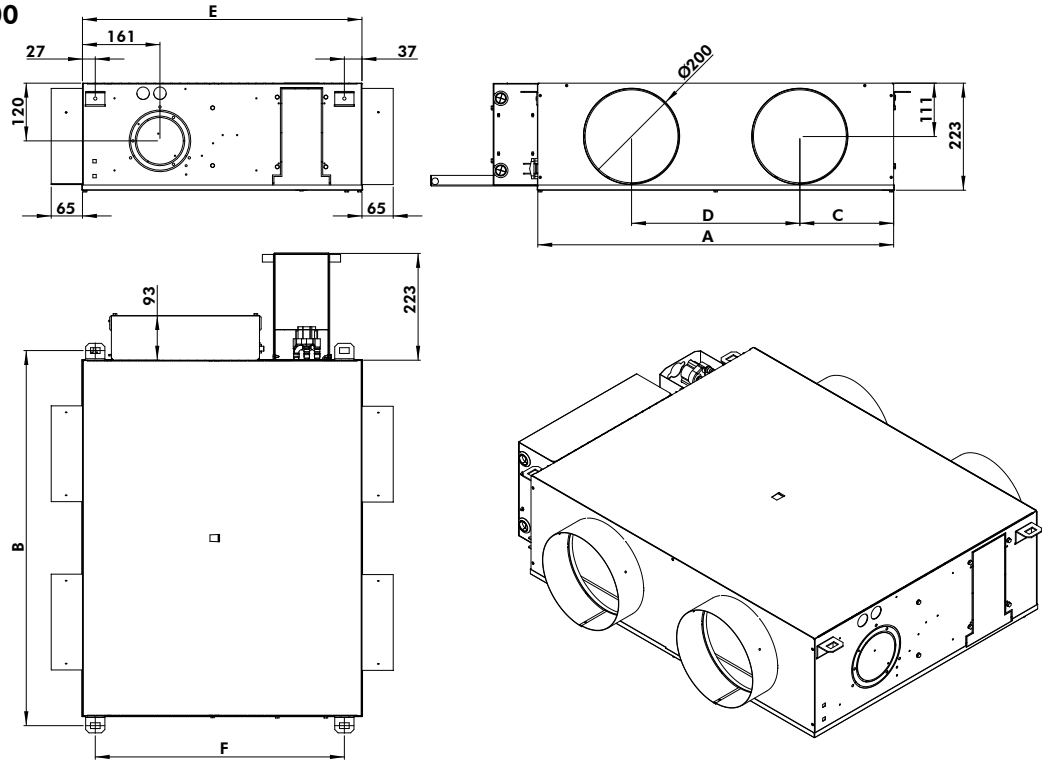






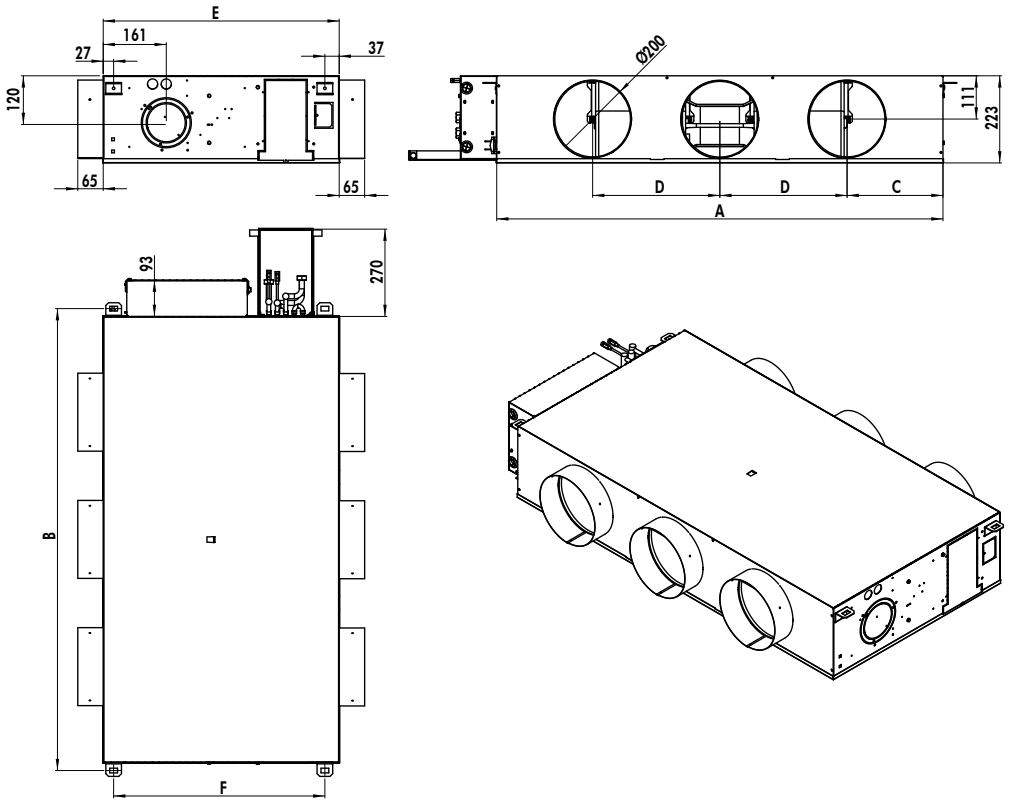
		A	B	C	C
DT 1000	mm	540	580	256	270
DT 1500	mm	640	680	223	320
DT 2000	mm	740	780	223	370

2 X Ø200



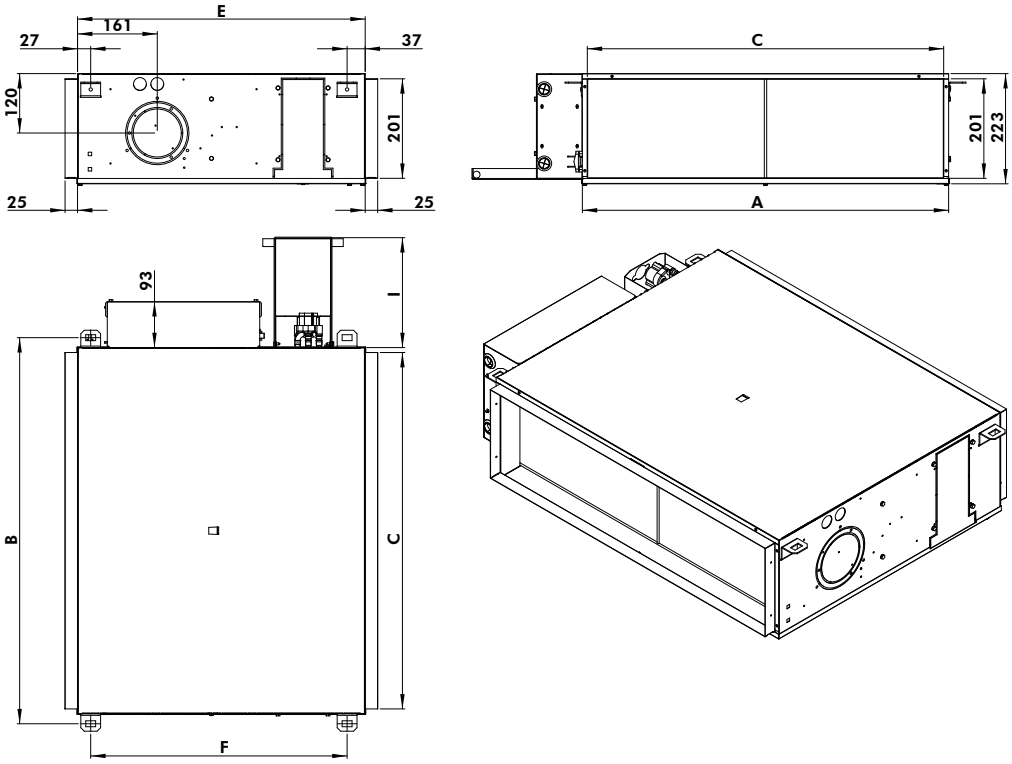
		A	B	C	D	E	F
DT 1500	mm	640	680	170	300	581	518
DT 2000	mm	740	780	195	350	581	518
DT 2500	mm	840	880	210	420	581	518

3 X Ø200



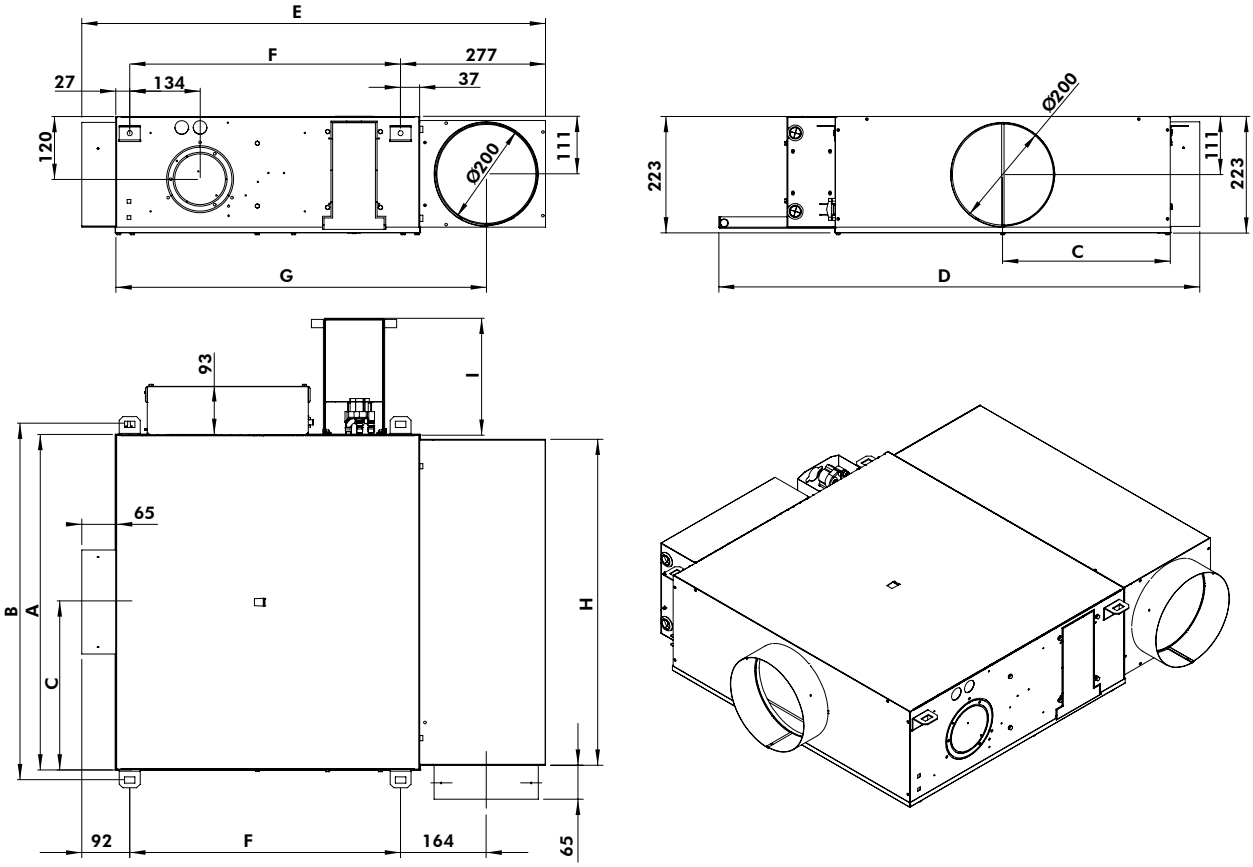
		A	B	C	D	E	F
DT 4000	mm	1 140	1 180	245	325	603	540

RECTANGULAR



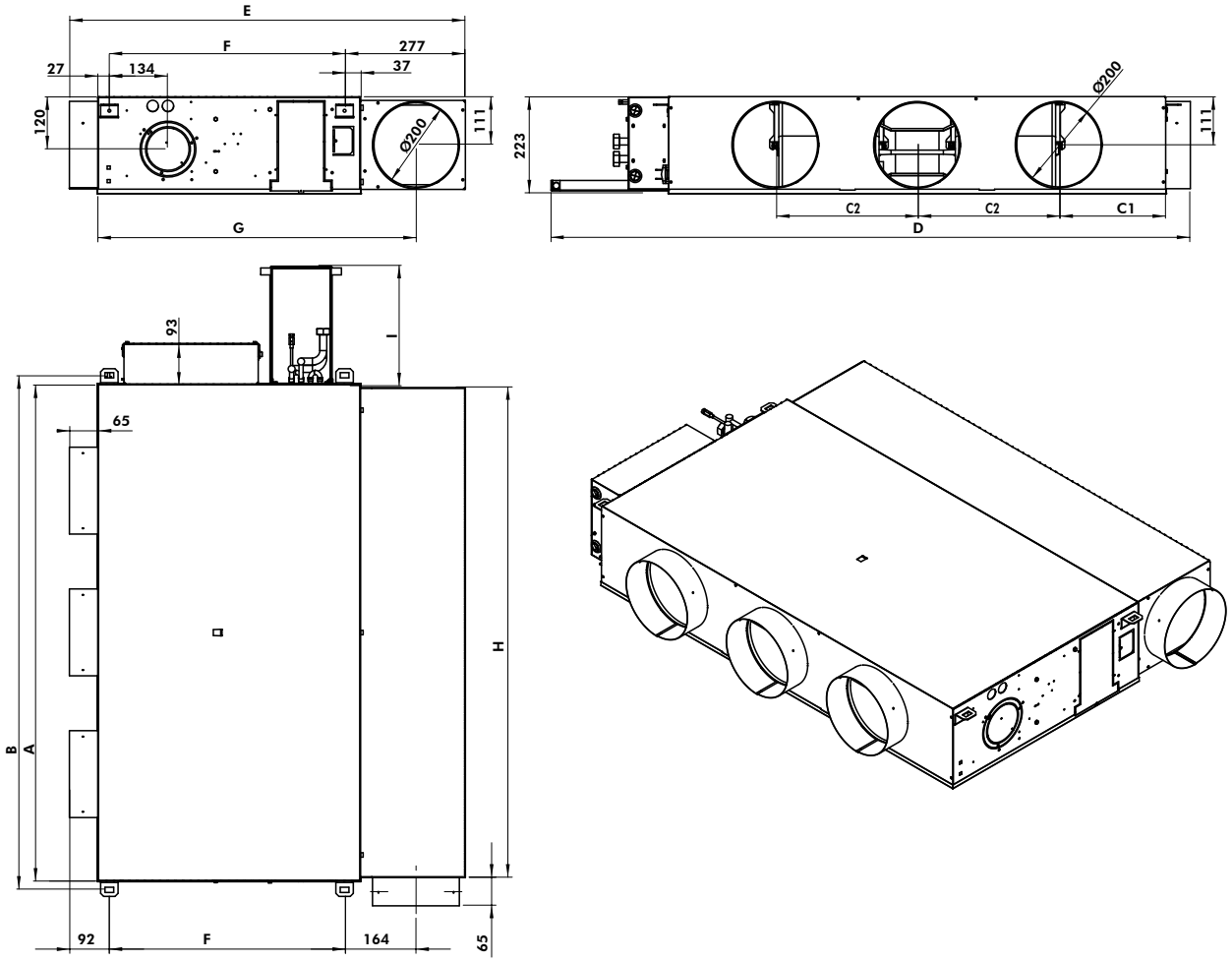
		A	B	C	E	F	I
DT 1000	mm	540	580	520	581	518	256
DT 1500	mm	640	680	620	581	518	223
DT 2000	mm	740	780	720	581	518	223
DT 2500	mm	840	880	820	581	518	223
DT 4000	mm	1 140	1 180	1 120	603	540	270

J - 1 X Ø200



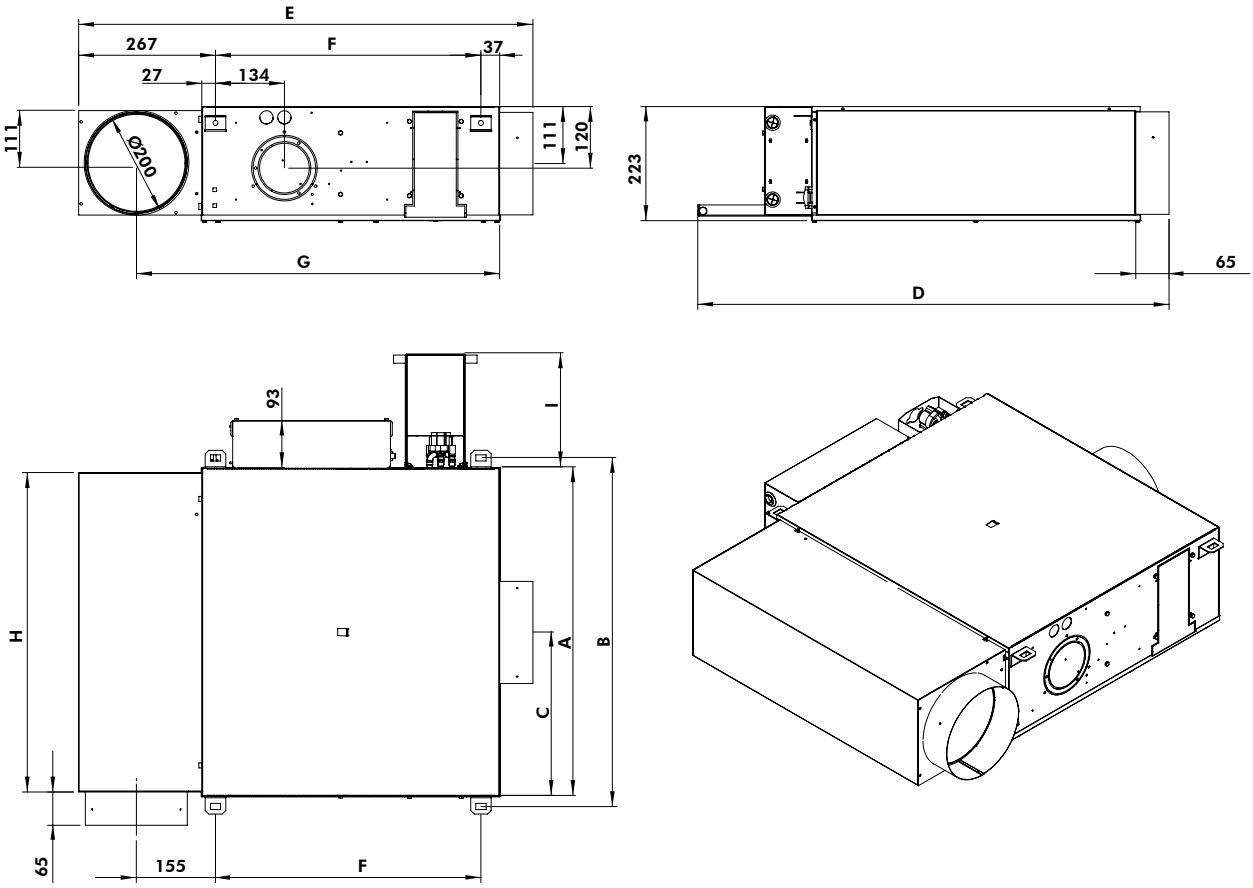
		A	B	C	D	E	F	G	H	I
DT 1000	mm	540	580	270	820	887	518	709	523	256
DT 1500	mm	640	680	320	920	887	518	709	623	223
DT 2000	mm	740	780	370	1 020	887	518	709	723	223
DT 2500	mm	840	880	420	1 120	887	518	709	823	223

J - 3 X Ø200



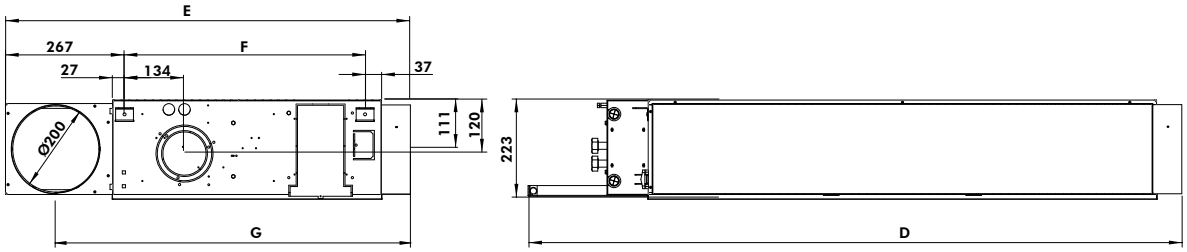
		A	B	C1	C2	D	E	F	G	H	I
DT 4000	mm	1 140	1 180	245	325	1 420	909	540	731	1 123	270

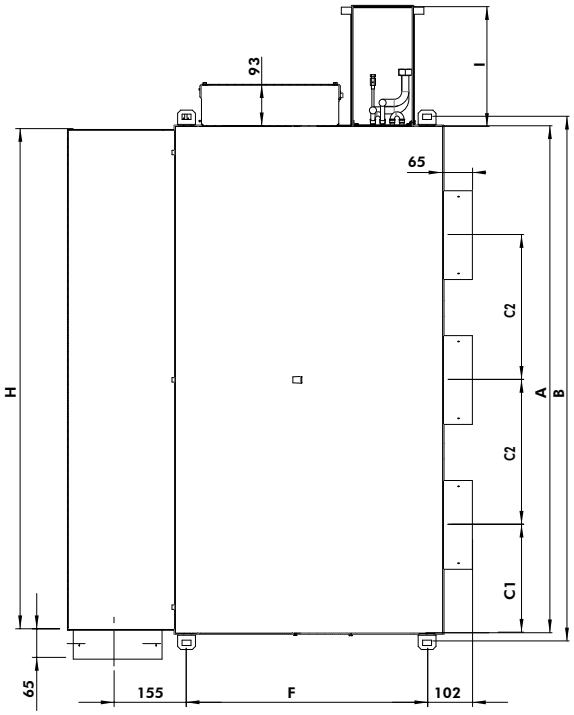
L - 1 X Ø200

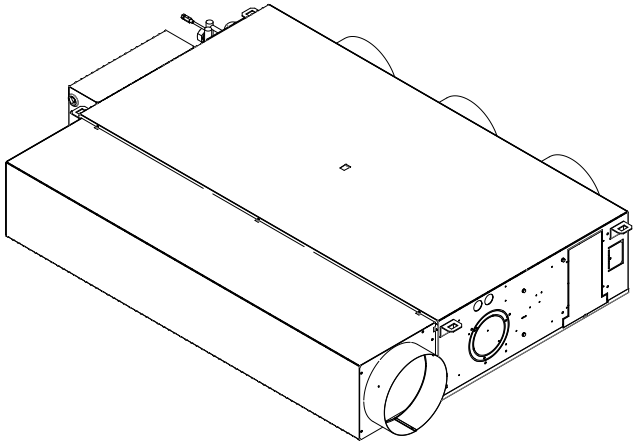


		A	B	C	D	E	F	G	H	I
DT 1000	mm	540	580	270	820	887	518	709	523	256
DT 1500	mm	640	680	320	920	887	518	709	623	223
DT 2000	mm	740	780	370	1 020	887	518	709	723	223
DT 2500	mm	840	880	420	1 120	887	518	709	823	223

L - 3 X Ø200

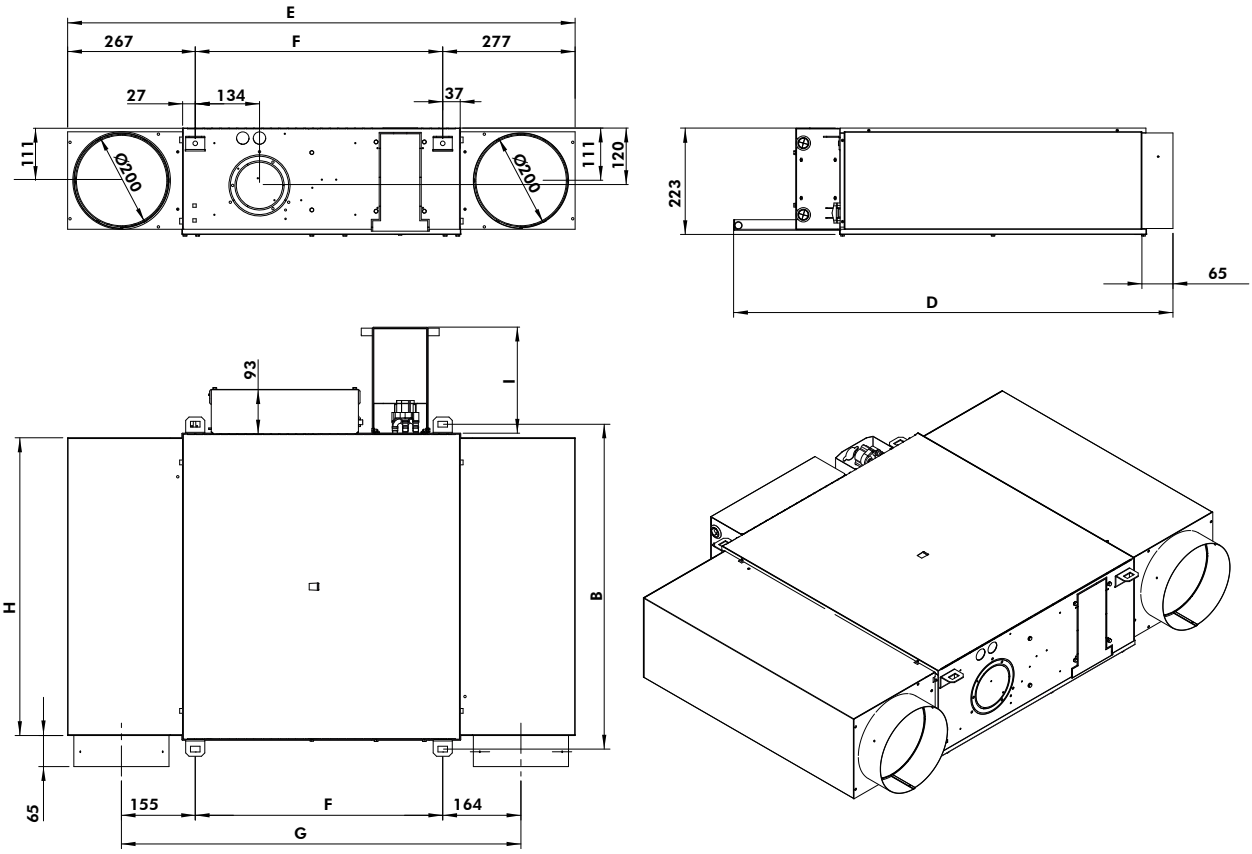






		A	B	C1	C2	D	E	F	G	H	I
DT 4000	mm	1 140	1 180	245	325	1 420	909	540	731	1 123	270

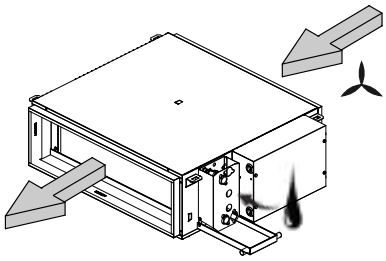
U - 1 X Ø200

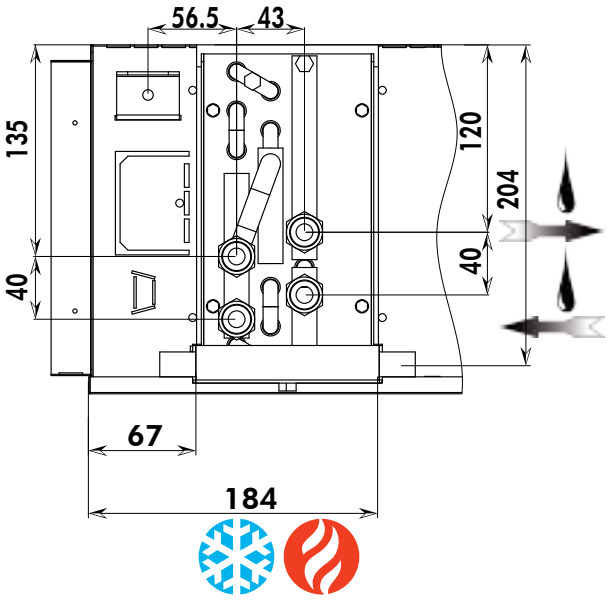


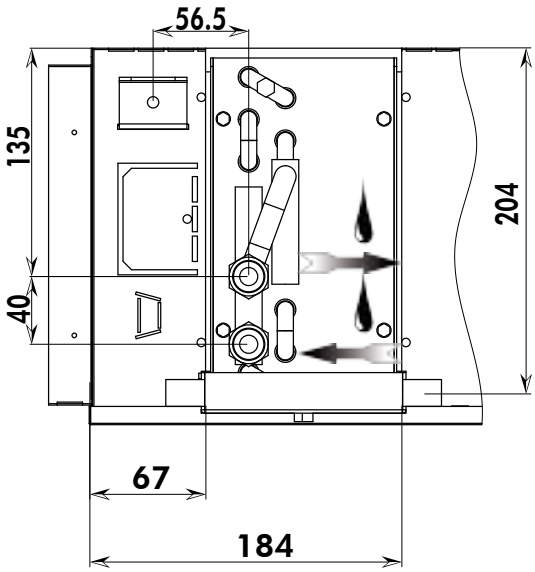
		B	D	E	F	G	H	I
DT 1000	mm	580	820	1 062	518	836	523	256
DT 1500	mm	680	920	1 062	518	836	623	223
DT 2000	mm	780	1 020	1 062	518	836	723	223
DT 2500	mm	880	1 120	1 062	518	836	823	223
DT 4000	mm	1 180	1 420	1 084	540	859	1 123	270

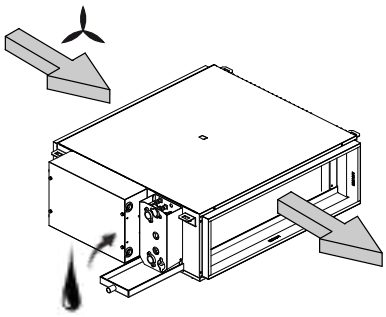
HYDRAULIC CONNECTIONS
RACCORDEMENT HYDRAULIQUE
HYDRAULIKANSCHLÜSSE
COLLEGAMENTI IDRAULICI
CONEXIONES HIDRÁULICAS

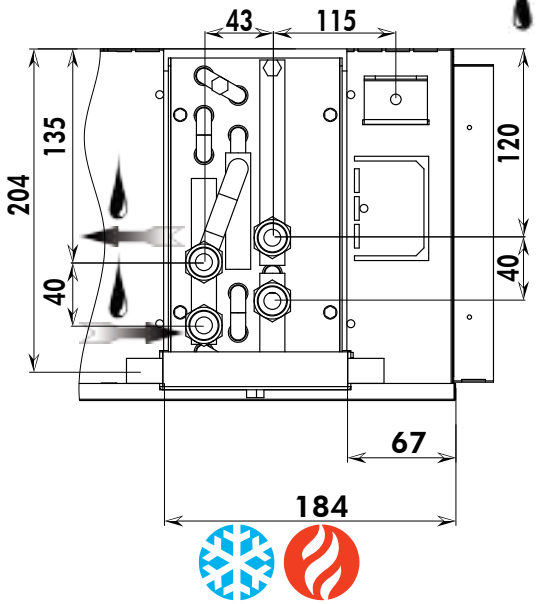
DT 1000

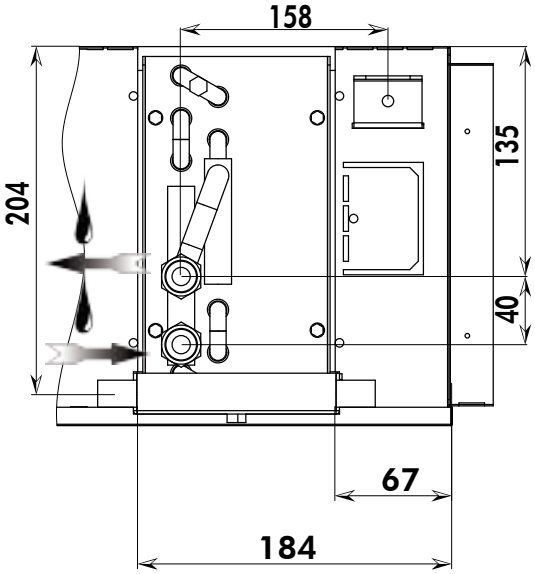




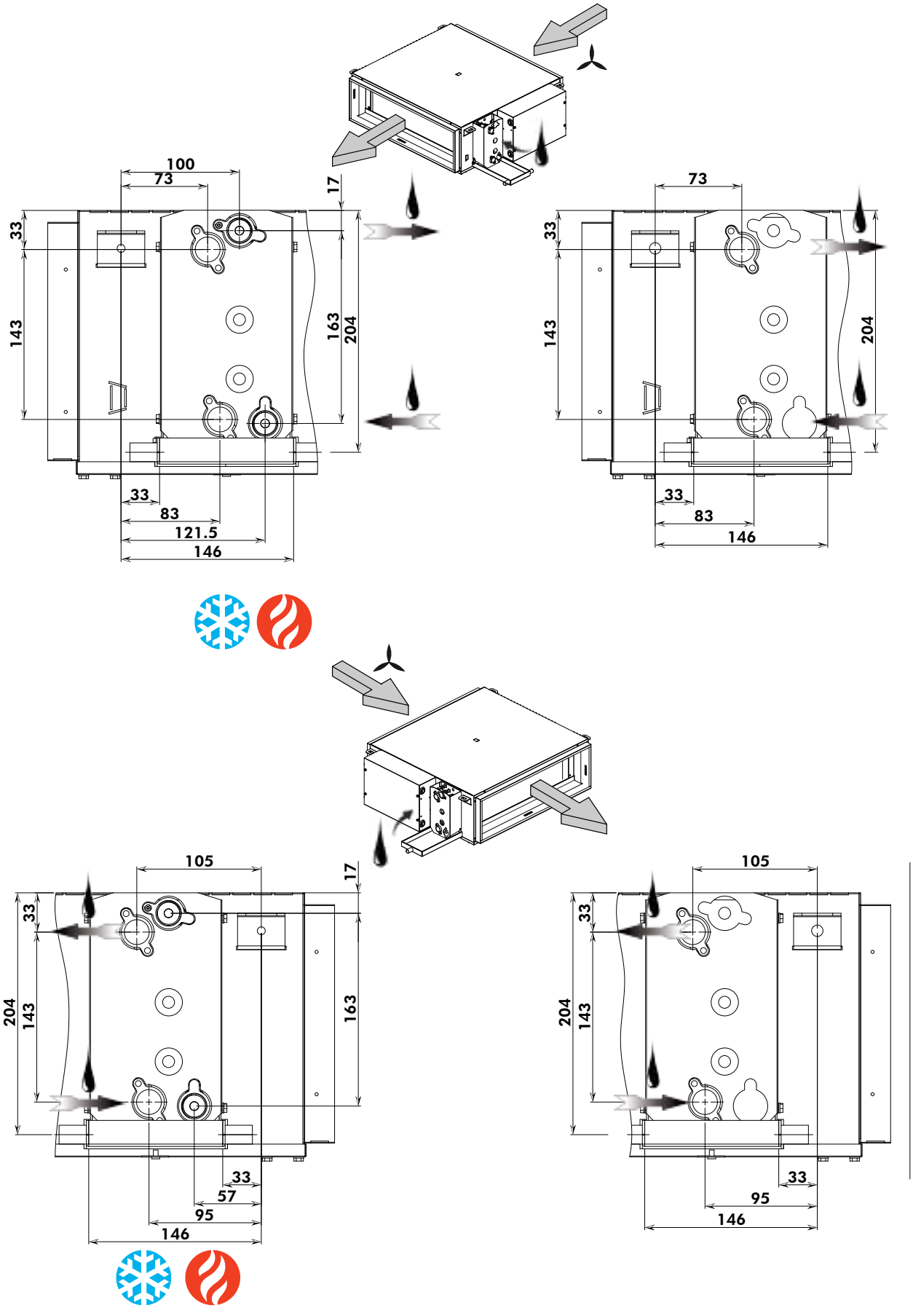




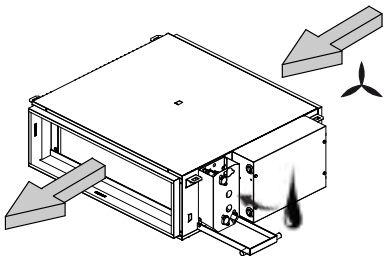


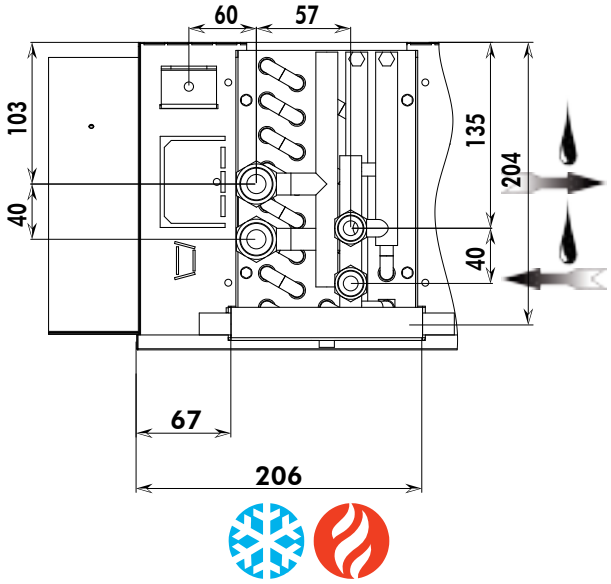


DT 1500 - 2000 - 2500



DT 4000

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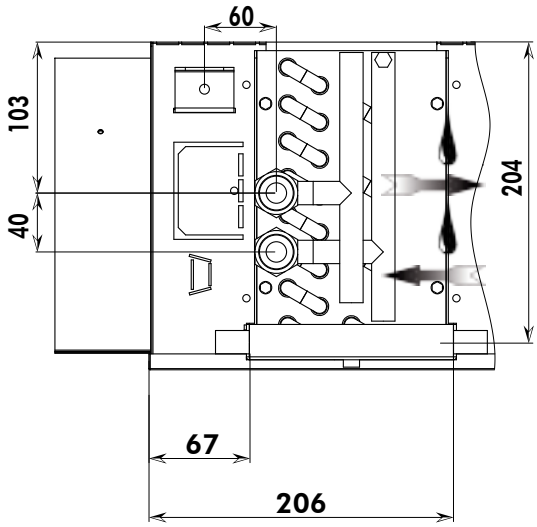
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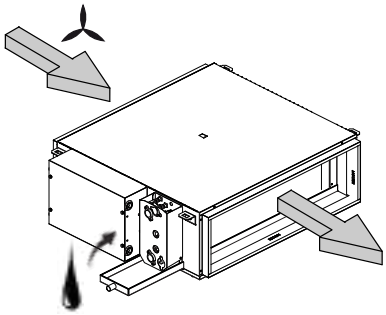

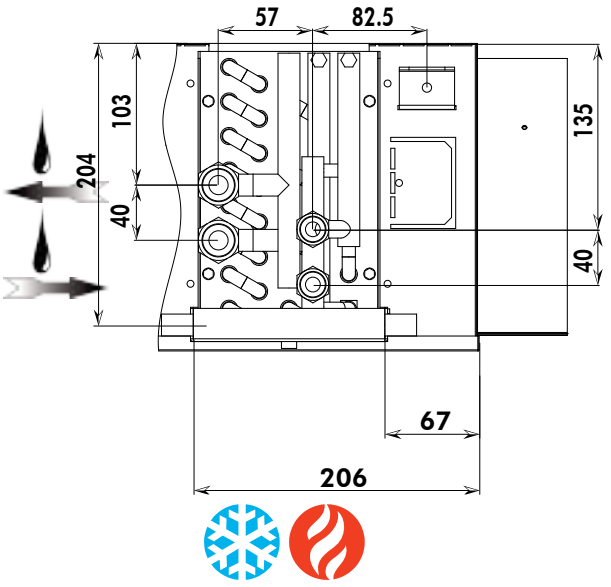
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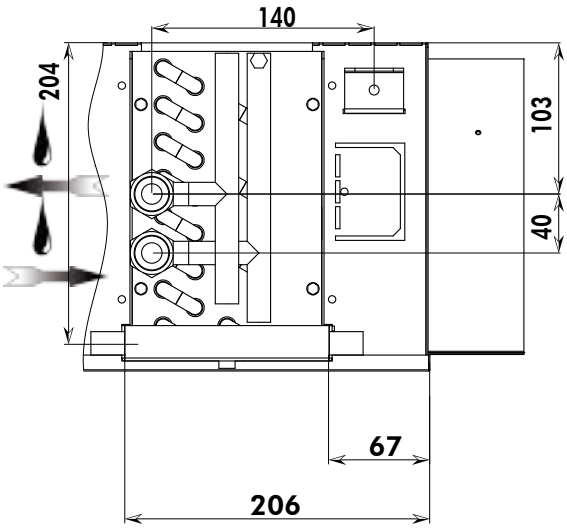

140
204
103
40
67
206

PRINCIPAL WIRING DIAGRAM

SCHEMAS ELECTRIQUES PRINCIPAUX

STROMLAUFPLANS WICHTIG

SCHEMAS ELETRICI PRINCIPALI

ESQUEMAS ELÉCTRICOS PRINCIPALES

TAKE CARE!

These wiring diagrams are correct at the time of publication. Manufacturing changes can lead to modifications. Always refer to the diagram supplied with the product.

ATTENTION

Ces schémas sont corrects au moment de la publication. Les variantes en fabrication peuvent entraîner des modifications. Reportez-vous toujours au schéma livré avec le produit.

ACHTUNG!

Diese Stromlaufplans sind zum Zeitpunkt der Veröffentlichung gültig. In Herstellung befindliche Varianten können Änderungen mit sich bringen. In jedem Fall den mit dem Produkt gelieferten Stromlaufplan hinzuziehen.

ATTENZIONE !

Questi schemi sono corretti al momento della pubblicazione. Le varianti apportate nel corso della fabbricazione possono comportare modifiche. Far sempre riferimento allo schema fornito con il prodotto.

ATENCIÓN !

Esto esquemas son correctos en el momento de la publicación. Pero las variantes en la fabricación pueden ser motivo de modificaciones. Remítase siempre al esquema entregado con el producto.

POWER SUPPLY MUST BE SWITCHED OFF BEFORE STARTING TO WORK IN THE ELECTRIC CONTROL BOXES!

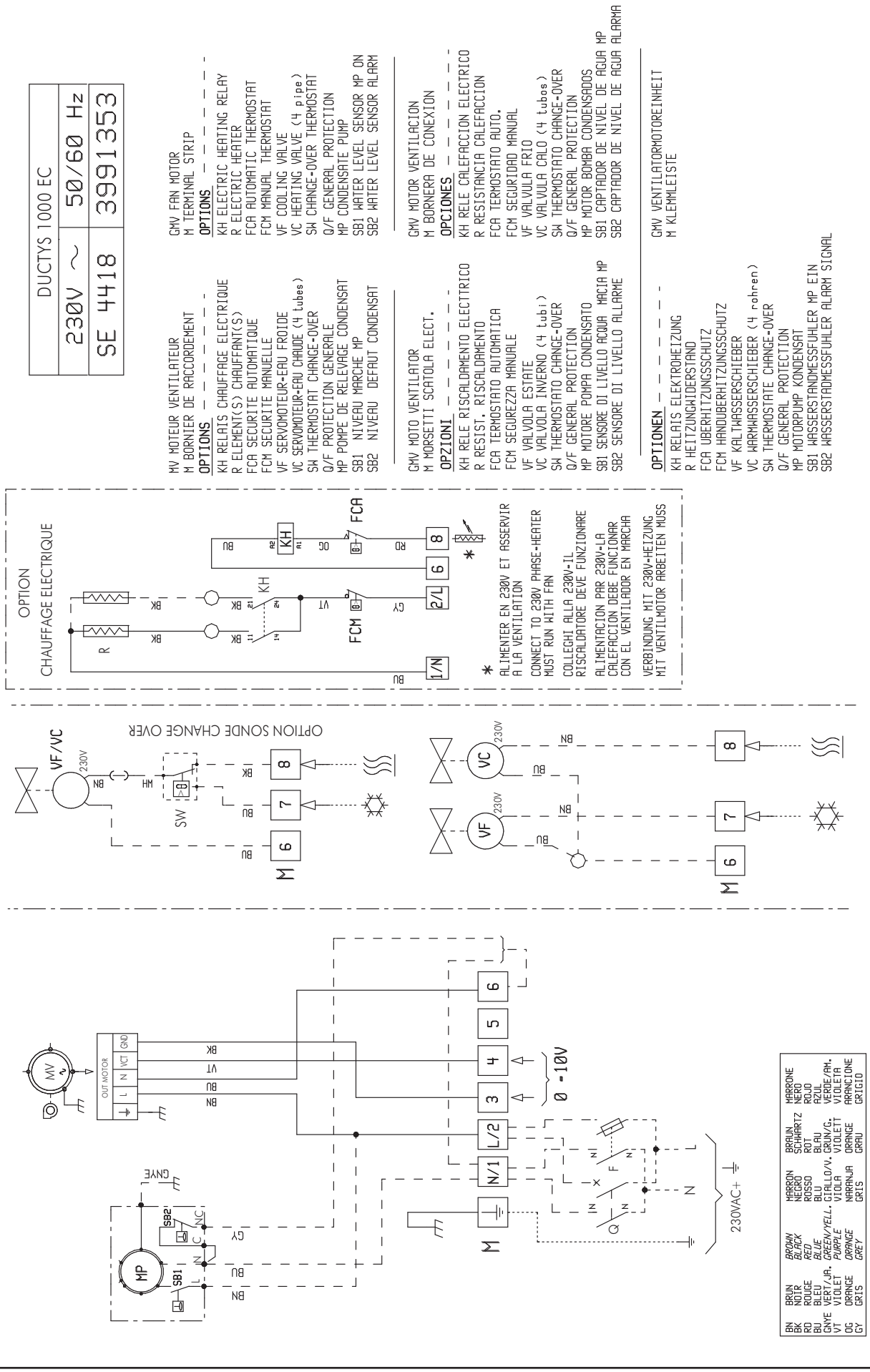
MISE HORS TENSION OBLIGATOIRE AVANT TOUTE INTERVENTION DANS LES BOITIERS ELECTRIQUES.

VOR JEDEM EINGRIFF AN DEN ANSCHLUßKÄSTEN UNBEDINGT DAS GERÄT ABSCHALTEN!

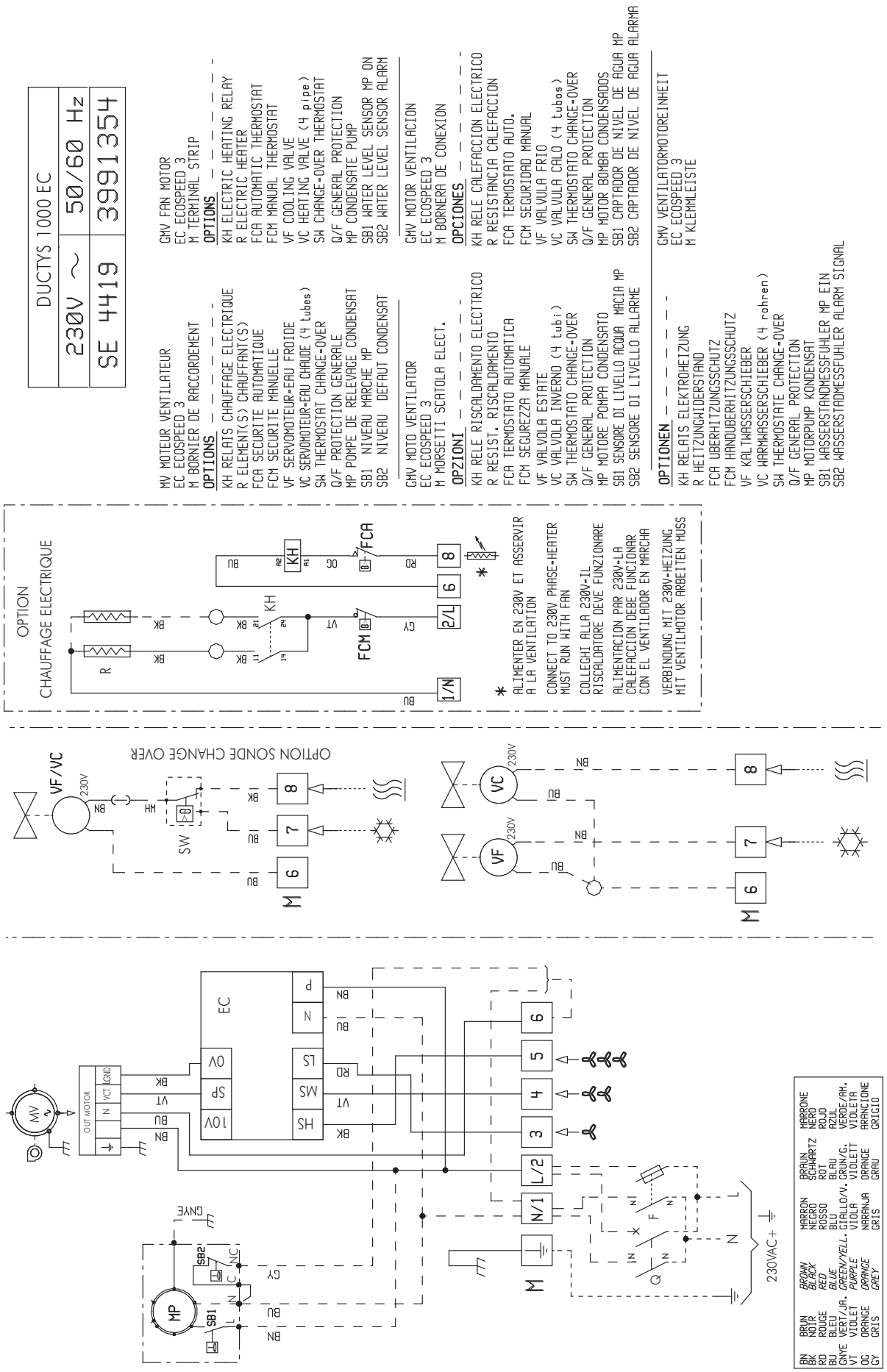
PRIMA DI OGNI INTERVENTO SULLE CASSETTE ELETTRICHE ESCLUDERE TASSATIVAMENTE L'ALIMENTAZIONE !

PUESTA FUERA DE TNESIÓN OBLIGATORIA ANTES DE CUALQUIER INTERVENCIÓN EN LAS CAJAS ELÉCTRICAS!

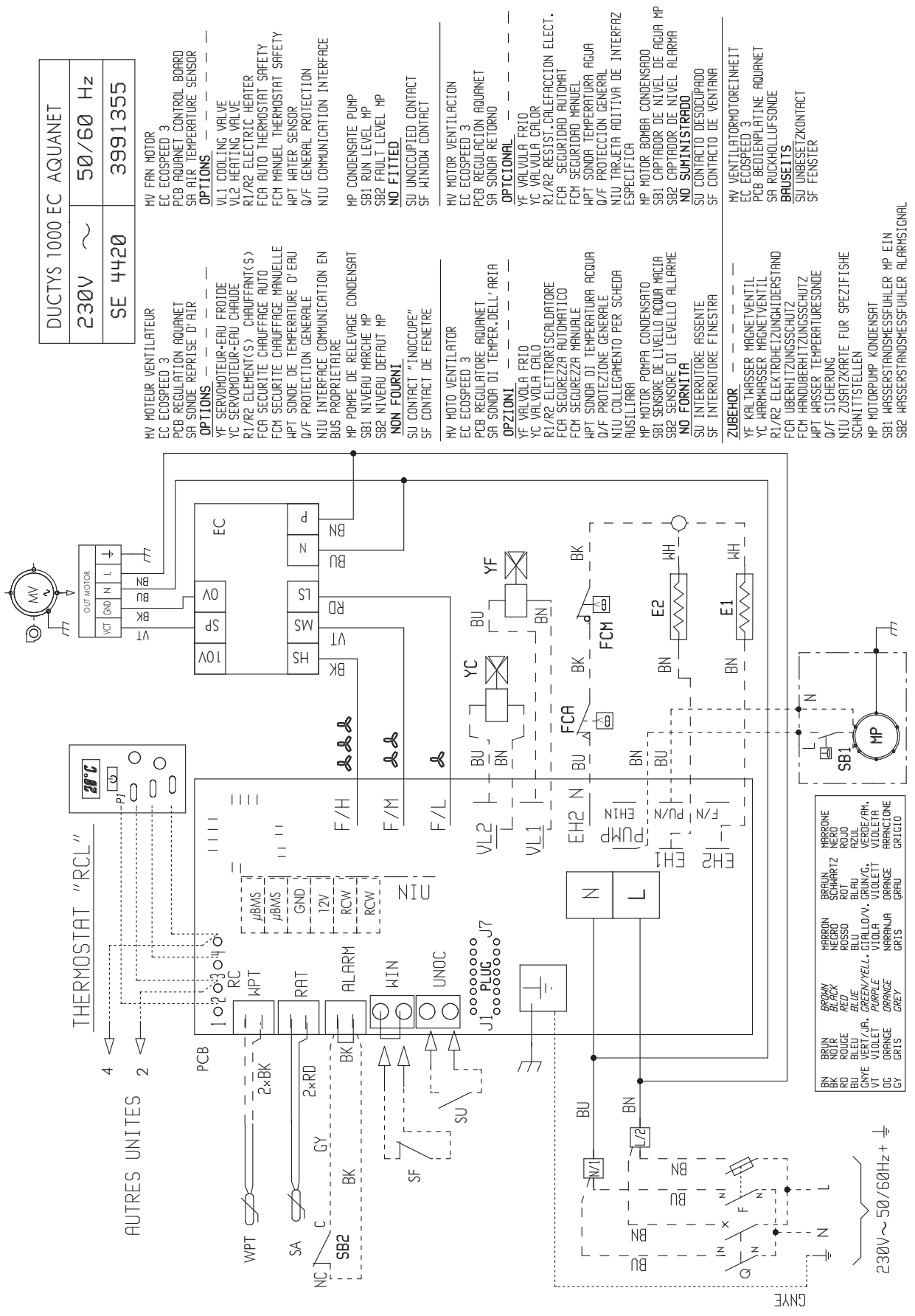
DUCTYS 1000 + EC MOTOR



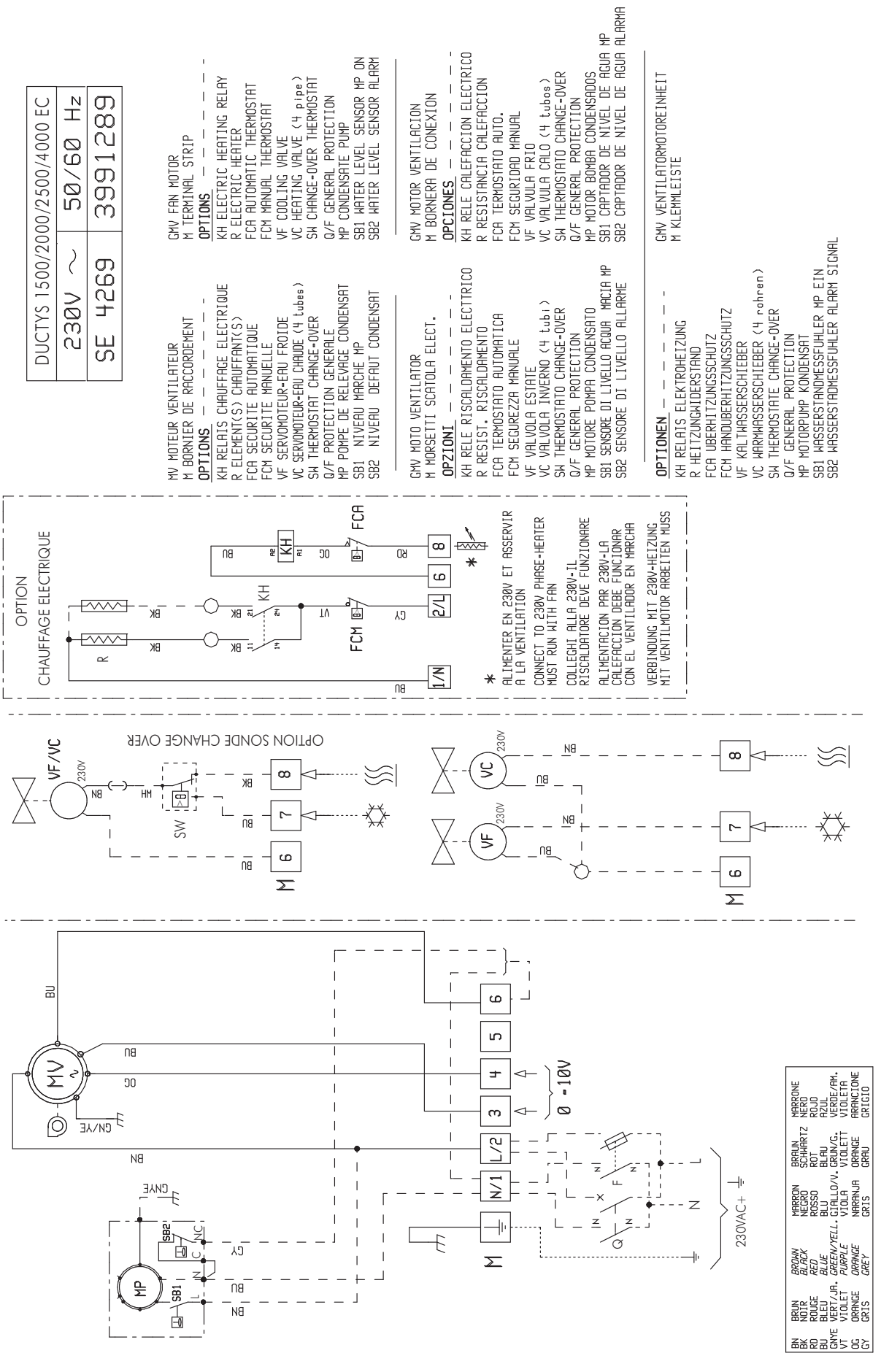
DUCTYS 1000 + EC MOTOR + ECOSPEED 3



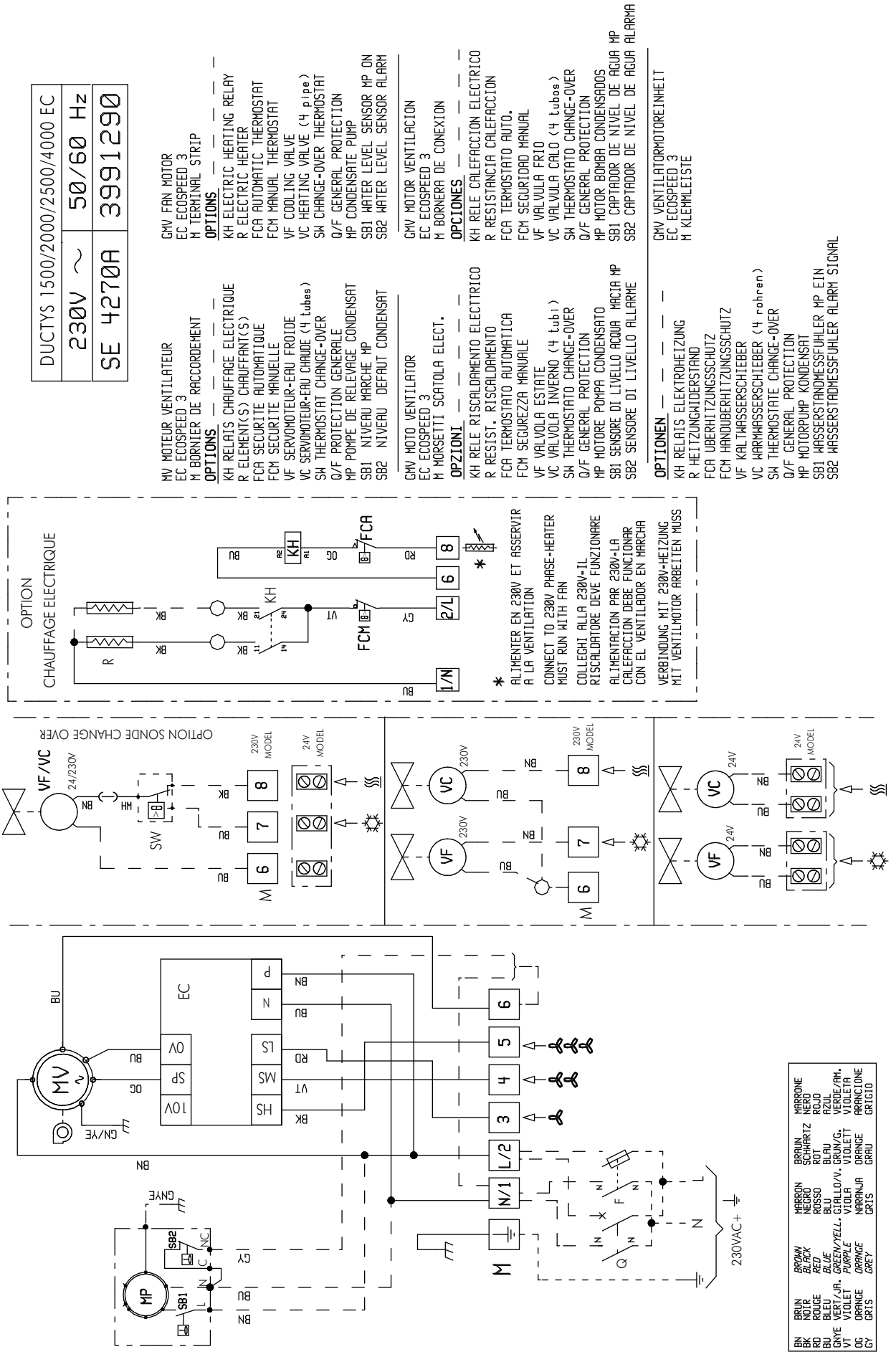
DUCTYS 1000 + EC MOTOR + AQUANET



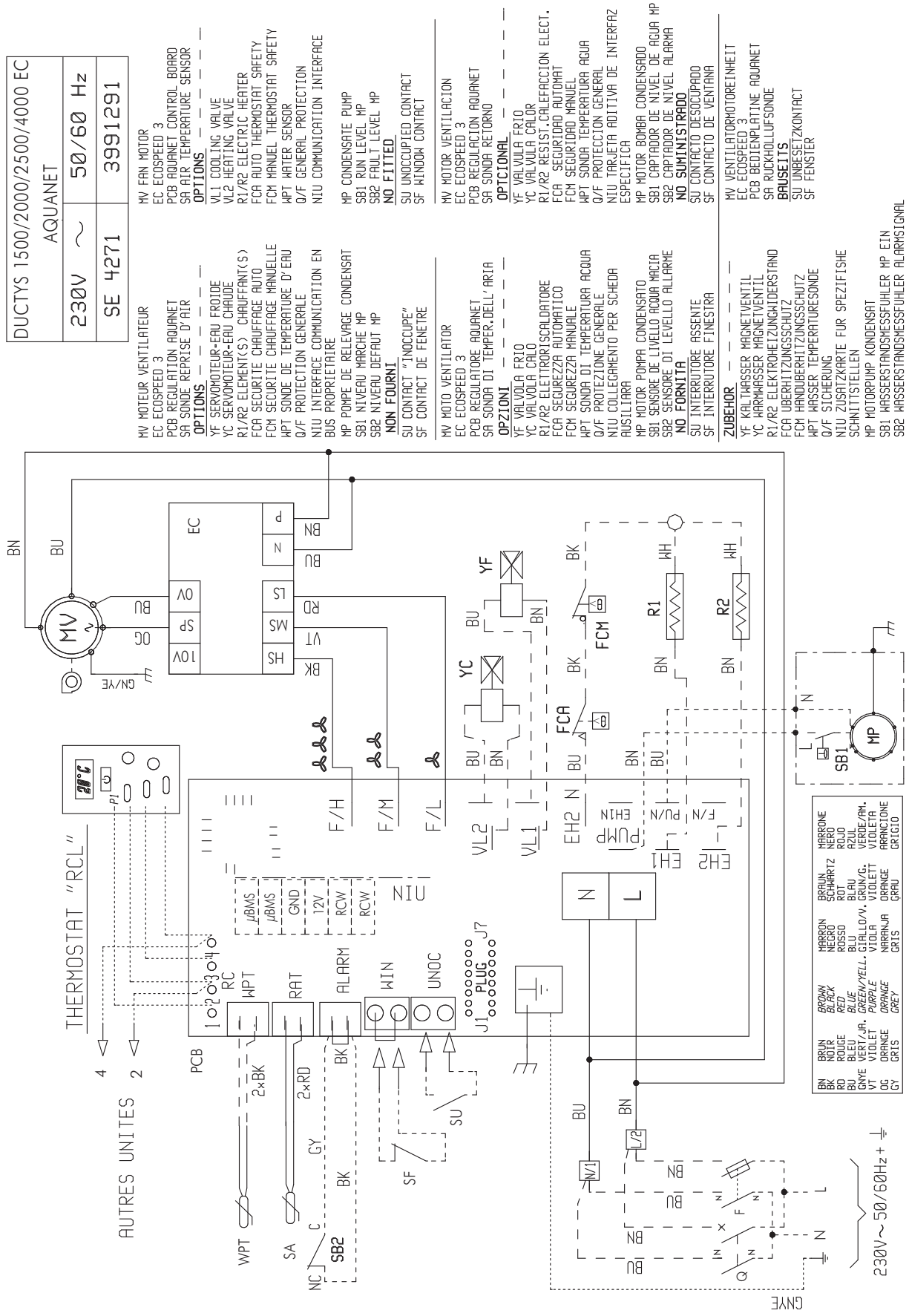
DUCTYS 1500/2000/2500/4000 + EC MOTOR



DUCTYS 1500/2000/2500/4000 + EC MOTOR + ECOSPEED 3



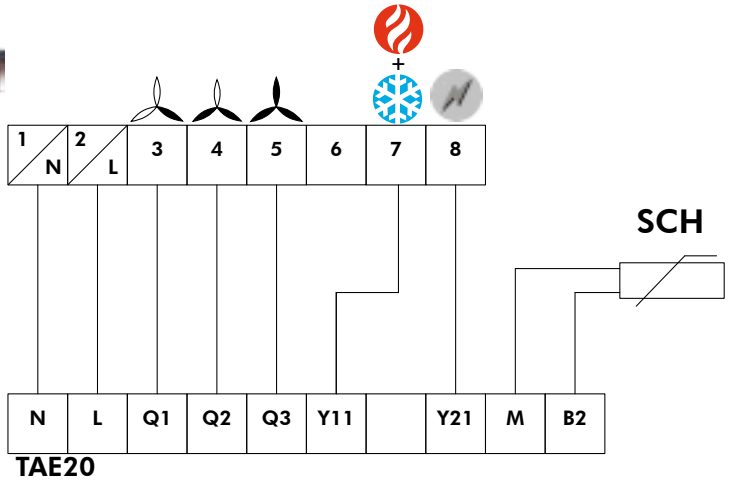
DUCTYS 1500/2000/2500/4000 + EC MOTOR + AQUANET



	2T	4T	❄	🔥	LOW SPEED	MEDIUM SPEED	HIGH SPEED
GB	2-PIPE COILS	4-PIPE COILS	COOLING	HEATING	LOW SPEED	MEDIUM SPEED	HIGH SPEED
F	BATTERIES 2 TUBES	BATTERIES 4 TUBES	FROID	CHAUD	PETITE VITESSE	VITESSE MOYENNE	GRANDE VITESSE
D	BATTERIEN 2 ROHREN	BATTERIEN 4 ROHREN	KÜHLUNG	HEIZUNG	KLEINE GESCHWINDIGKEIT	MITTLERE GESCHWINDIGKEIT	HOHE GESCHWINDIGKEIT
I	BATTERIE 2 TUBI	BATTERIE 4 TUBI	FREDDO	RISCALDO	BASSA VELOCITÀ	VELOCITÀ MEDIA	ALTA VELOCITÀ
E	BATERÍAS 2 TUBOS	BATERÍAS 4 TUBOS	FRIO	CALOR	VELOCIDAD BAJA	VELOCIDAD MEDIA	VELOCIDAD ALTA

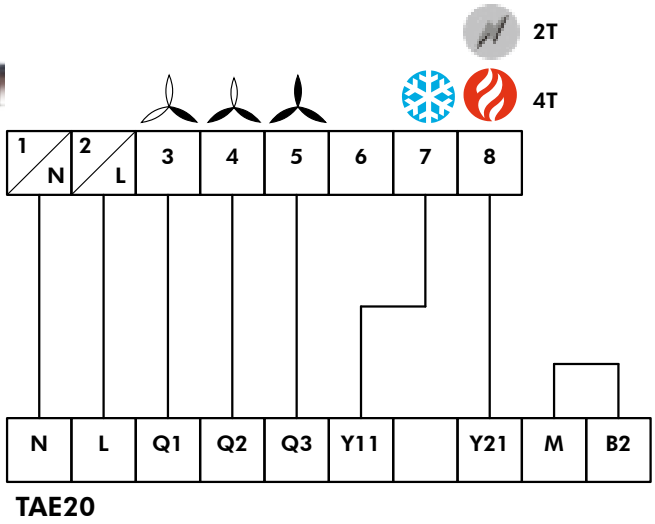
			SCH	SW
GB	ELECTRIC HEATING	CONTROL VALVE	CHANGE OVER (TAE 20)	CHANGE OVER (TRM-FA TRM-VP)
F	CHAUFFAGE ELECTRIQUE	VANNE DE REGULATION	CHANGE OVER (TAE 20)	CHANGE OVER (TRM-FA TRM-VP)
D	ELEKTROHEIZUNG	REGELVENTIL	CHANGE OVER (TAE 20)	CHANGE OVER (TRM-FA TRM-VP)
I	RISCALDAMENTO ELETRICO	VALVOLA DI REGOLAZIONE	CHANGE OVER (TAE 20)	CHANGE OVER (TRM-FA TRM-VP)
E	CALEFACCION ELECTRICA	VÁLVULA REGULADORA	CHANGE OVER (TAE 20)	CHANGE OVER (TRM-FA TRM-VP)

2T + (❄ + 🔥) + + SCH

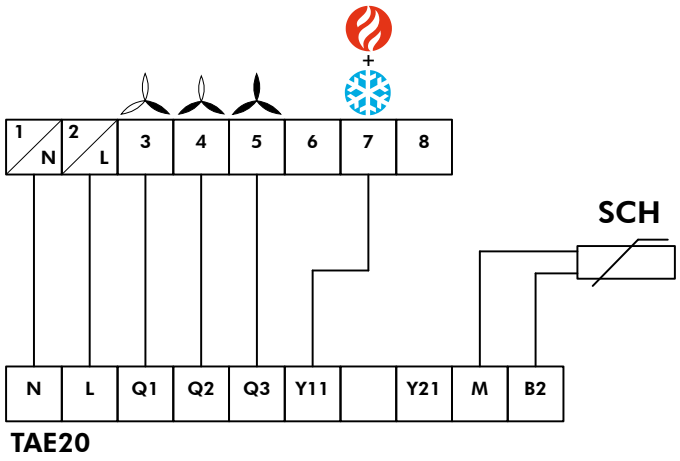


2T + (❄) +

4T + (❄ + 🔥)

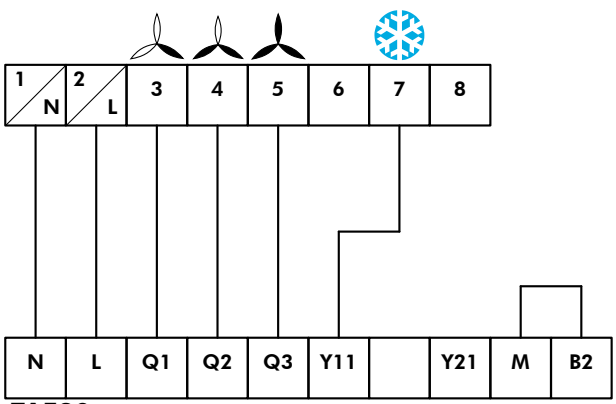


2T+ (❄+🔥) + SCH



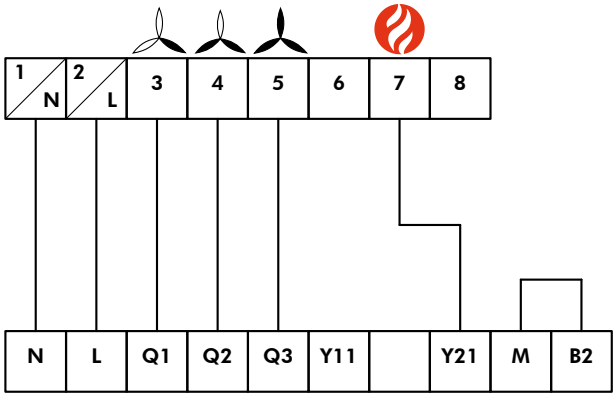
TAE20

2T+ (❄)



TAE20

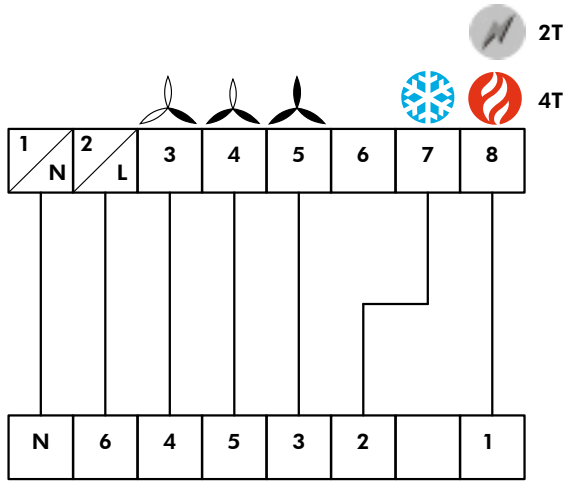
2T+ (🔥)



TAE20

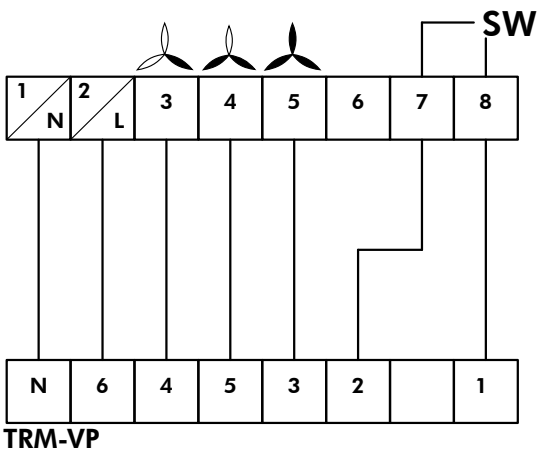
2T+ (❄) +

4T+ (❄+🔥)



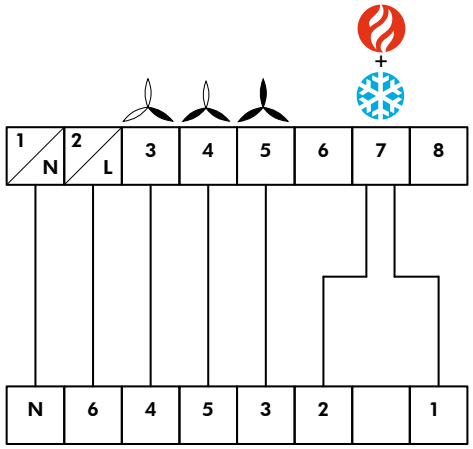
TRM-VP

2T + (❄ + 🔥) + SW



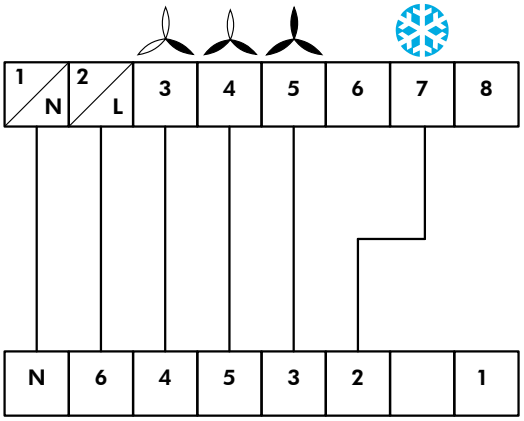
TRM-VP

2T + (❄ + 🔥)



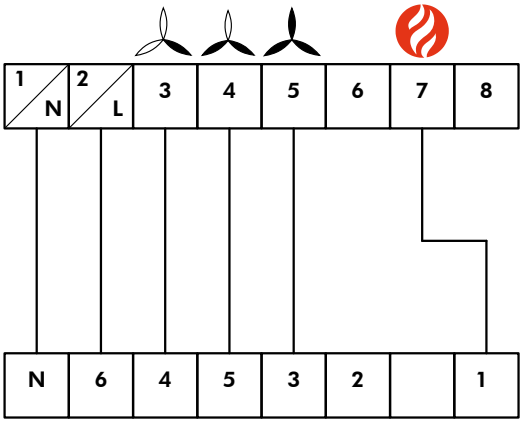
TRM-VP

2T + (❄)



TRM-VP

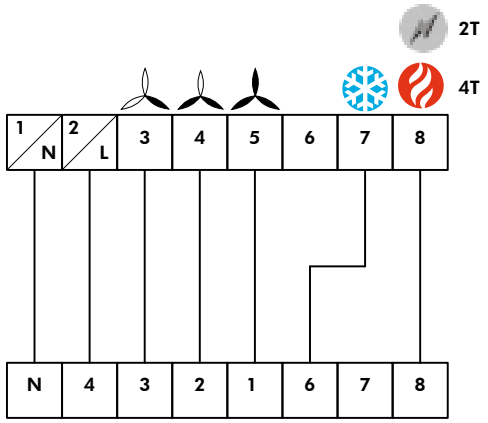
2T + (🔥)



TRM-VP

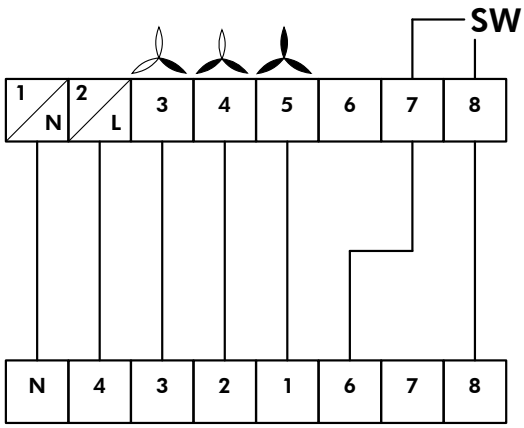
2T+(❄)+

4T+(❄+🔥)



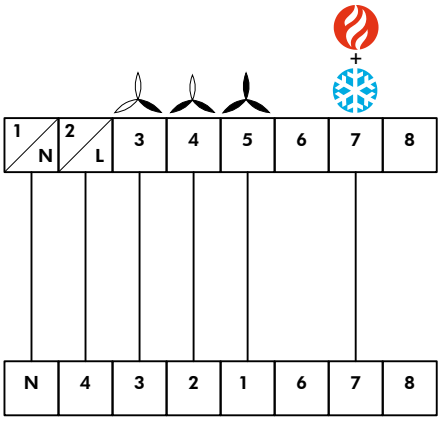
TRM-FA

2T+(❄+🔥)+SW



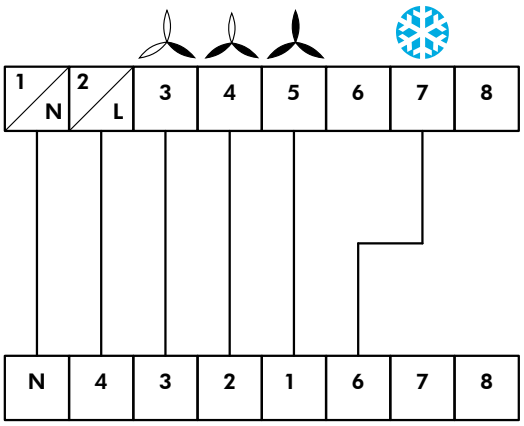
TRM-FA

2T+(❄+🔥)



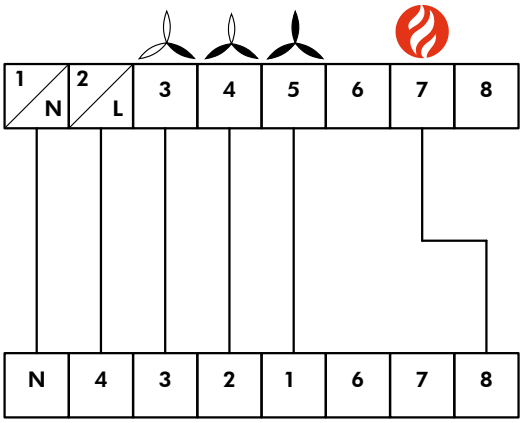
TRM-FA

2T+(❄)



TRM-FA

2T + (S) (🔥)



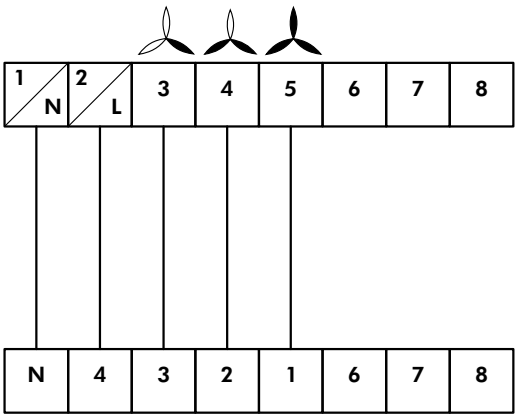
TRM-FA

~~(S)~~

2T + ❄ + 🔥

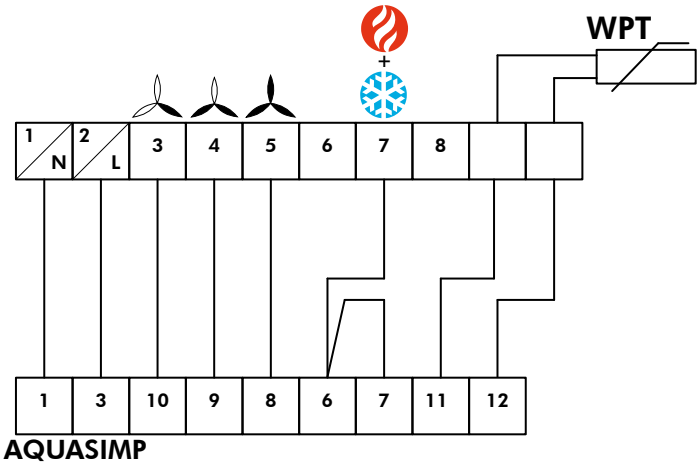
2T + ❄

2T + 🔥



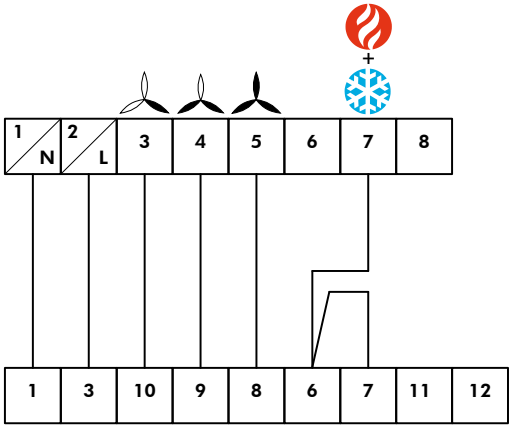
TRM-FA

2T + (S) (❄ + 🔥) + SCH



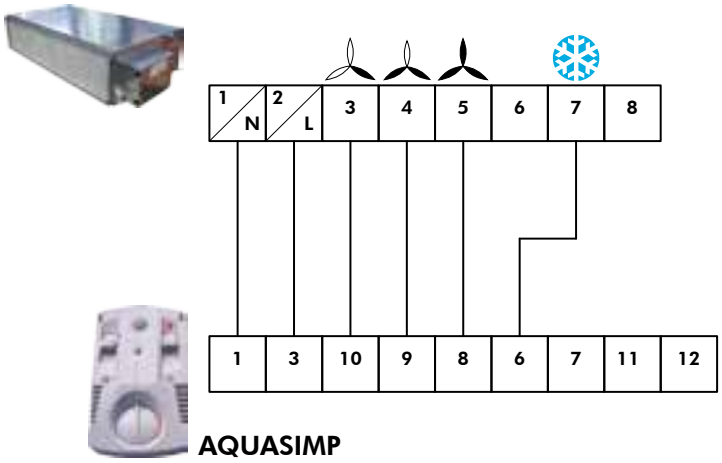
AQUASIMP

2T + (S) (❄ + 🔥)

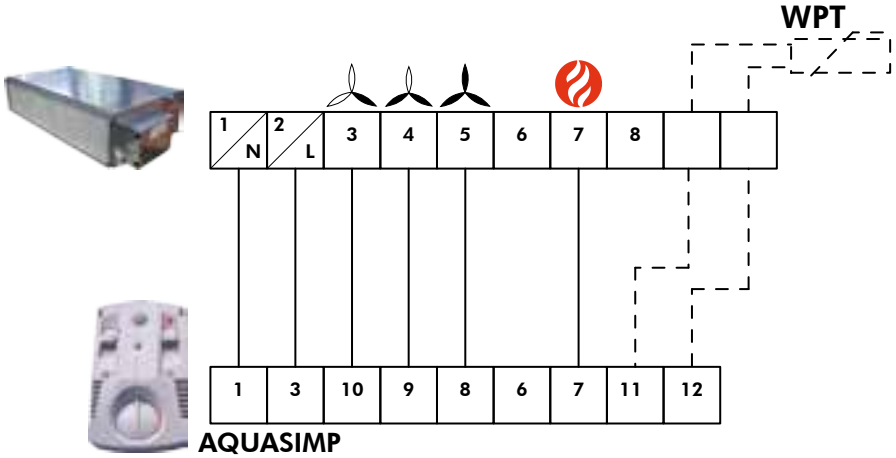


AQUASIMP

2T+S(❄)



2T+S(🔥)

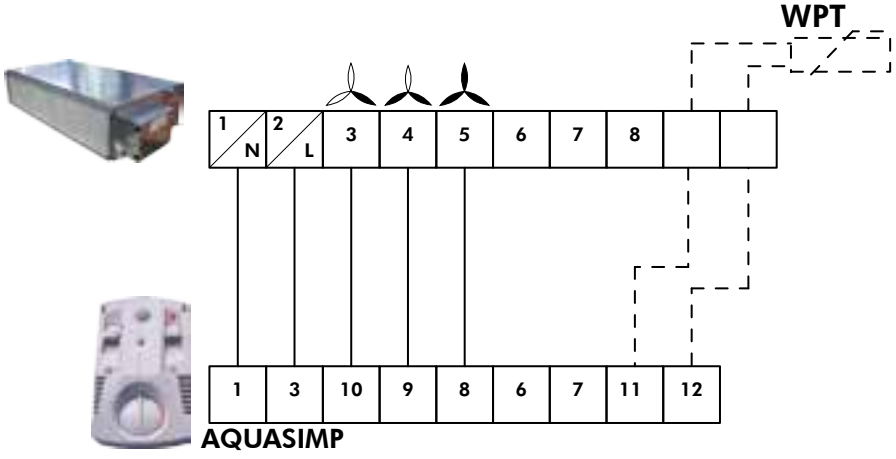


~~S~~

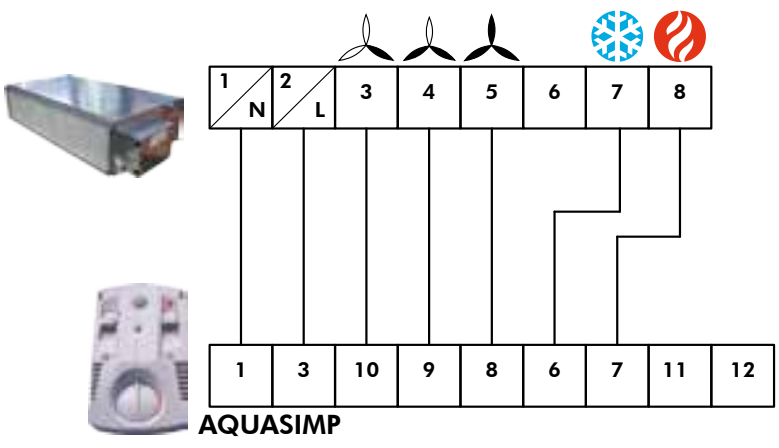
2T+❄+🔥

2T+❄

2T+🔥



4T+S(❄+🔥)



EC Compliance declaration

Under our own responsibility, we declare that the product designated in this manual comply with the provisions of the EEC directives listed hereafter and with the national legislation into which these directives have been transposed.

Déclaration CE de conformité

Nous déclarons sous notre responsabilité que les produits désignés dans la présente notice sont conformes aux dispositions des directives CEE énoncées ci- après et aux législations nationales les transposant.

EG-Konformitätserklärung

Wir erklarën in eigener Verantwortung, das die in der vorliegenden Beschreibung angegebenen Produkte den Bestimungen der nachstehend erwähnten EG-Richtlinien und den nationalen Gesetzesvorschriffen entsprechen, in denen diese Richtinien umgesetz sind.

Dichiarazione CE di conformità

Dichiariamo, assurmendone la responsasabilità, che i prodotti descritti nel presente manuale sono conformi alle disposizioni delle direttive CEE di cui sott e alle lagislazionni nazionali che li recepiscono

Declaración CE de conformidad

Declaramos, bajo nuestra responsabilidad, que los productos designados en este manual son conformes a las disposiciones de las directivas CEE enunuciadas a continuacion, asi como a las legislaciones nacionales que las contemplan.

DUCTYS 1000 - 1500 - 2000 - 2500 - 4000

MACHINERY DIRECTIVE 2006 / 42 / EEC
LOW VOLTAGE DIRECTIVE (DBT) 2006 / 95 / EEC
ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 2004 / 108 / EEC

DIRECTIVE MACHINES 2006 / 42 / C.E.E.
DIRECTIVE BASSE TENSION (DBT) 2006 / 95 / C.E.E.
DIRECTIVE COMPATIBILITE ELECTROMAGNETIQUE 2004 / 108 / C.E.E

RICHTLINIE MASCHINEN 2006 / 42 / EG
RICHTLINIE NIERDERSPANNUNG (DBT) 2006 / 95 / EG
RICHTLINIE ELEKTROMAGNETISHE VERTRÄGLICHKEIT 2004 / 108 / EG

DIRETTIVA MACHINE 2006 / 42 / CEE
DIRETTIVA BASSA TENSIONE (DBT) 2006 / 95 / CEE
DIRETTIVA COMPATIBILITA ELETTROMAGNATICA 2004 / 108 / CEE

DIRECTIVA MAQUIAS 2006 / 42 / CEE
DIRECTIVA BAJA TENSION (DBT) 2006 / 95 / CEE
DIRECTIVA COMPATIBILIDAD ELECTROMAGNETICA 2004 / 108 / CEE

And that the following paragraphs of the harmonised standards have been applied.
Et que les paragraphes suivants les normes harmonisées ont été appliqués.
Und dass die folgenden Paragraphen der vereinheitlichten Normen Angewandt wurden.
E che sono stati applicati i seguenti paragraphi delle norme armonnizzate.
Y que se han aplicado los siguientes apartados de las normas armonizadas.

EN 60 335-1
EN 50 014-2

EN 60 335-2-40
EN 61 000-3-2

EN 55 014-1
EN 61 000-3-3

A Tillières sur Avre
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Le: 08/09/2014
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Systemair AC SAS

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3990689

CE

As part of our ongoing product improvement programme, our products are subject to change without prior notice. Non contractual photos.

Dans un souci d'amélioration constante, nos produits peuvent être modifiés sans préavis. Photos non contractuelles.

In dem Bemühen um ständige Verbesserung können unsere Erzeugnisse ohne vorherige Ankündigung geändert werden. Fotos nicht vertraglich bindend.

A causa della politica di continua miglioria posta in atto dal costruttore, questi prodotti sono soggetti a modifiche senza alcun obbligo di preavviso. Le foto pubblicate non danno luogo ad alcun vincolo contrattuale.

Con objeto de mejorar constantemente, nuestros productos pueden ser modificados sin previo aviso. Fotos no contractuales.