

Aqu@Scop HT V2

12-6 / 18-9

Air-water Heat Pump



12.0 → 17.9kW



INSTALLATION INSTRUCTION

NOTICE D'INSTALLATION

INSTALLATIONSHANDBUCH

ISTRUZIONI INSTALLAZIONE

INSTRUCCIONES DE INSTALACIÓN

English

Français

Deutsch

Italiano

Español

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

1. GENERAL RECOMMENDATIONS

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.

This appliance has not been designed for use by persons (including children) with reduced physical, sensorial or mental faculties or by persons without any experience or knowledge of heating systems, unless they act under the safety and supervision of a responsible person or have received prior training concerning the use of the appliance.

Children should be supervised to ensure that they do not play with the appliance.

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.

1.3. EQUIPEMENT SAFETY DATA

Safety Data	R407C
Toxicity	Low
In contact with skin	Liquid splashes or sprays may cause freeze burns. Unlikely to be hazardous by skin absorption. However, R407C may be slightly irritant and, if liquid, it has a strong degreasing effect. Flush contaminated skin areas with running water. If it comes into contact with fabrics, the liquid refrigerant will cause them to freeze and adhere to the skin. Carefully remove the contaminated clothing since it might adhere to the skin and cause freeze burns. Contact a doctor if the affected skin areas are reddened or irritated.
In contact with eyes	Vapours have no effect. Liquid splashes or sprays may cause freeze burns. In these cases rinse your eyes with running water or with a solution for eye lavages for at least 10 minutes. Immediately contact a doctor.
Ingestion	Very unlikely to occur. If this should be the case, it may cause freeze burns. Never induce vomiting. Keep the patient awake. Make him rinse his mouth with running water and make him drink about 1/4 of a litre. Immediately contact a doctor.
Inhalation	R407C: High concentration levels of its vapours in the air can produce an anaesthetic effect, including the loss of consciousness. Particularly severe exposures may cause heart arrhythmia and sometimes prove to be also fatal. At high concentrations there is a danger of asphyxia due to a reduced oxygen content in the atmosphere. In these cases take the patient to the open air, in a cool place and keep him at rest. Administer oxygen, if required. Apply artificial respiration if breathing has ceased or if it has become irregular. In case of heart failure immediately apply cardiac massage. Immediately contact a doctor.
Further Medical Advice	A symptomatic and supportive therapy is generally suitable. A heart sensitisation has been observed in some cases, as a result of exposures to particularly high concentrations. In the presence of catecholamines (such as for example adrenaline) in the blood flow, it has increased the irregularity of the cardiac rhythm and then caused the heart failure.
Long-term exposure	R407C: A lifetime study which has been conducted on the effects inhalation may have on rats at 50,000 ppm has shown the onset of benign tumours of the testicle. These remarks suggest that there is no danger for human beings if they are exposed to concentrations below the occupational limits or equal to them.
Occupational exposure limits	R407C: Recommended limits: 1,000 ppm v/v 8 hours TWA.
Stability	R407C: Not specified.
Conditions to avoid	Use in the presence of exposed flames, red heat surfaces and high humidity levels.
Hazardous reactions	Possibility of violent reactions with sodium, potassium, barium and other alkaline substances. Incompatible materials: magnesium and all the alloys containing over 2% of magnesium.
Hazardous decomposition products	R407 C: Halogen acids deriving from thermal decomposition and hydrolysis.
General precautions	Avoid the inhalation of high concentrations of vapours. The concentration in the atmosphere shall be kept at the minimum value and anyway below the occupational limits. Since vapours are heavier than air and they tend to stagnate and to build up in closed areas, any opening for ventilation shall be made at the lowest level.
Breathing protection	In case of doubt about the actual concentration, wear breathing apparatus. It should be self-contained and approved by the bodies for safety protection.
Storage Preservation	Refrigerant containers shall be stored in a cool place, away from fire risk, direct sunlight and all heat sources, such as radiators. The maximum temperature shall never exceed 45°C in the storage place.
Protection clothes	Wear boots, safety gloves and glasses or masks for facial protection.
Behaviour in case of leaks or escapes	Never forget to wear protection clothes and breathing apparatus. Isolate the source of the leakage, provided that this operation may be performed in safety conditions. Any small quantity of refrigerant which may have escaped in its liquid state may evaporate provided that the room is well ventilated. In case of a large leakage, ventilate the room immediately. Stop the leakage with sand, earth or any suitable absorbing material. Prevent the liquid refrigerant from flowing into drains, sewers, foundations or absorbing wells since its vapours may create an asphyxiating atmosphere.
Disposal	The best procedure involves recovery and recycle. If this is not possible, the refrigerant shall be given to a plant which is well equipped to destroy and neutralise any acid and toxic by-product which may derive from its disposal.
Combustibility features	R407C: Non flammable in the atmosphere.
Containers	If they are exposed to the fire, they shall be constantly cooled down by water sprays. Containers may explode if they are overheated.
Behaviour in case of fire	In case of fire wear protection clothes and self-contained breathing apparatus.

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 units are delivered fully assembled and tested.

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. CONTENTS OF PACKAGE

1 HEAT Pump Aqu@Scop HT

- 1 Documentation pouch
- 1 Water filter kit
- 1 stop cock
- 4 Anti-vibration pads

5. PRODUCT PRESENTATION

This range of air/water **Aqu@Scop HT** (High Temperature) appliances offers the special feature of producing hot water at 65° C at outdoor temperatures between 0° C and -20° C, while guaranteeing a high COP.

Between 0°C and +42°C, the temperature of the hot water produced varies between 65°C and 55°C for the Heating mode and is maintained at 60°C for the Domestic Hot Water (DHW) mode.

Consequently, this **Aqu@Scop HT** system is ideally suited to replace a traditional hot water boiler in producing DHW without alterations to the rest of the system.

This technology uses two-stage compressors connected to a patented refrigeration circuit.

This technology ensures remarkably accurate "capacity supplied/heating needs" matching due to its ability to run each compressor independently. Depending on the demand for heating capacity and the operating temperature of heat emitters (i.e. radiators, etc.) the **Aqu@Scop HT** regulator selects either the small or large compressor to operate on its own or in a two-stage mode.

6. ACCESSORIES

- Set of stop cocks with pressure tap
 - Set of 2 flexible pipes (length 1m)
 - Hydraulic connection kit
 - Sludge pot (decanting filter)
 - Domestic hot water tank (300l)
 - Domestic hot water plate exchanger kits for:
 - ✓ Wall-mounted electric tank (DHW outflow via the bottom)
 - ✓ Floor-mounted electric tank (DHW outflow via the top)
 - Directional valve to be linked to the:
 - ✓ Domestic Hot Water function.
 - ✓ Boiler substitution function
 - ✓ Swimming pool function (with temperature probe kit)
 - 140 litre buffer tank
 - Anti-vibration pads (Anti-vibration mountings)
 - 6kW in-line electric heater
 - Dual zone Under-floor / Radiator heating kit (modulating valve + electric control box + temperature probe)
 - Dual zone management kit for existing valve (electric control box + temperature probe)
 - Wired programmable ambience terminal
 - Wireless programmable ambience terminal
- } Accessory recommended for an optimal functioning**

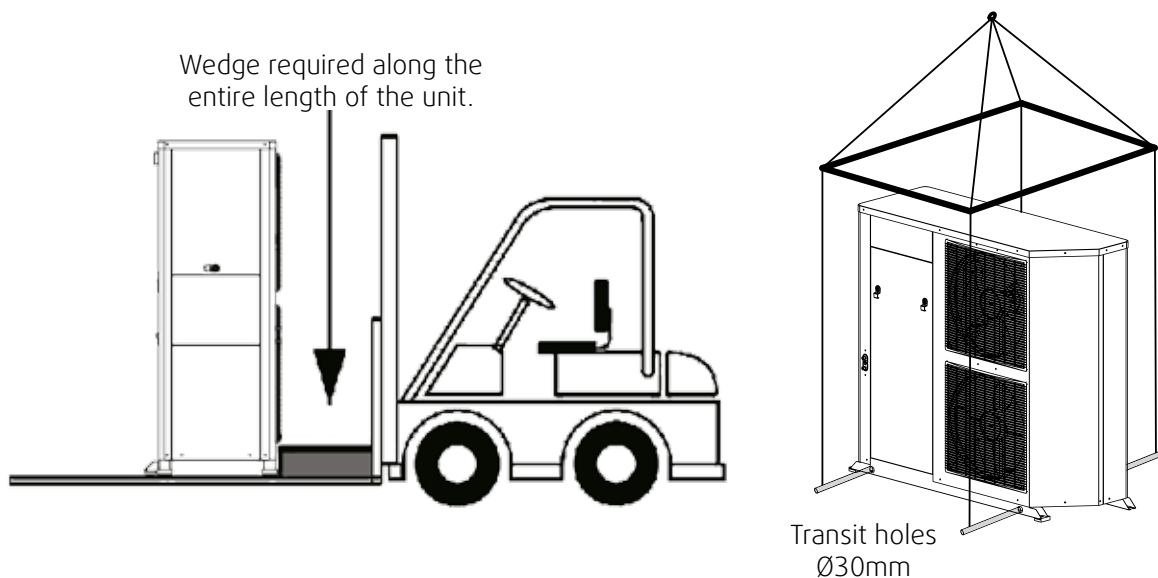
7. DIMENSIONS

SEE APPENDIX

8. HANDLING

Take care to avoid any rough handling or impacts when unloading and moving the appliance. Only push or pull the appliance by its base. Place a safety wedge between the unit base and the fork lift truck to avoid damaging the unit's structure and casing.

The handles present on the appliance's panels are intended for the removal/refitting of the latter and must not be used for handling the complete appliance (too heavy to be supported by the panels).



8.1. NET WEIGHT

12-6	14-7	18-9
184	209	213



9. TECHNICAL SPECIFICATIONS

9.1. PHYSICAL CHARACTERISTICS

	12-6	14-7	18-9
REFRIGERANT			
Type	R407C		
Factory charge	g SEE NAME PLATE		
HYDRAULIC LINKS			
Inlet water	gas	1" Female / Rotating nut	
Outlet water	gas	1" Female / Rotating nut	
WATER FLOW			
Nominal	l/h	1030 / 1230	1480
Minimum	l/h	880 / 1050	1260
Maximum	l/h	1170 / 1390	1670
FANS			
Fans (x2)	206W - 700tr/mn - 6000m ³ /h		
ACOUSTIC PRESSURE			
Acoustic pressure – outdoor unit	dB(A)	65	65

This equipment contains fluorinated gas with greenhouse gas effects covered by the Kyoto agreement.

9.2. ELECTRICAL CHARACTERISTICS

	12-6	14-7	18-9
SUPPLY VOLTAGE			
	400V / 3 Ph / 50Hz		
Start-up current draw with limiter	A	< 60	
Maximum current			
Only Aqu@Scop HT	A	12.2	13.2
Aqu@Scop HT + accessories	A	15.5	16.5
SUPPLY VOLTAGE			
	230V / 1 Ph / 50Hz		
Start-up current draw with limiter	A	< 45	
Maximum current			
Only Aqu@Scop HT	A	25.7	27.2
Aqu@Scop HT + accessories	A	29	30.5

9.3. OPTIONS COMPATIBILITY



The card μ PC allows to install one or two options at most. The various possible configurations are the following ones:

- > Domestic hot water plate exchanger kits (SE4287)
- > Dual zone kit (SE4288)
- > Boilier relief (SE4289 or SE4290)
- > Electric heater kit (SE4291 or SE4292)
- > Domestic hot water tank (SE4290 or SE4291 or SE4293)
- > Dual zone kit + boilier relief (SE4289)
- > Dual zone kit + electric heater kit (SE4292)
- > Dual zone kit + Domestic hot water tank (SE4293)
- > Domestic hot water tank + boilier relief (SE4290)
- > Domestic hot water tank + electric heater kit (SE4291)

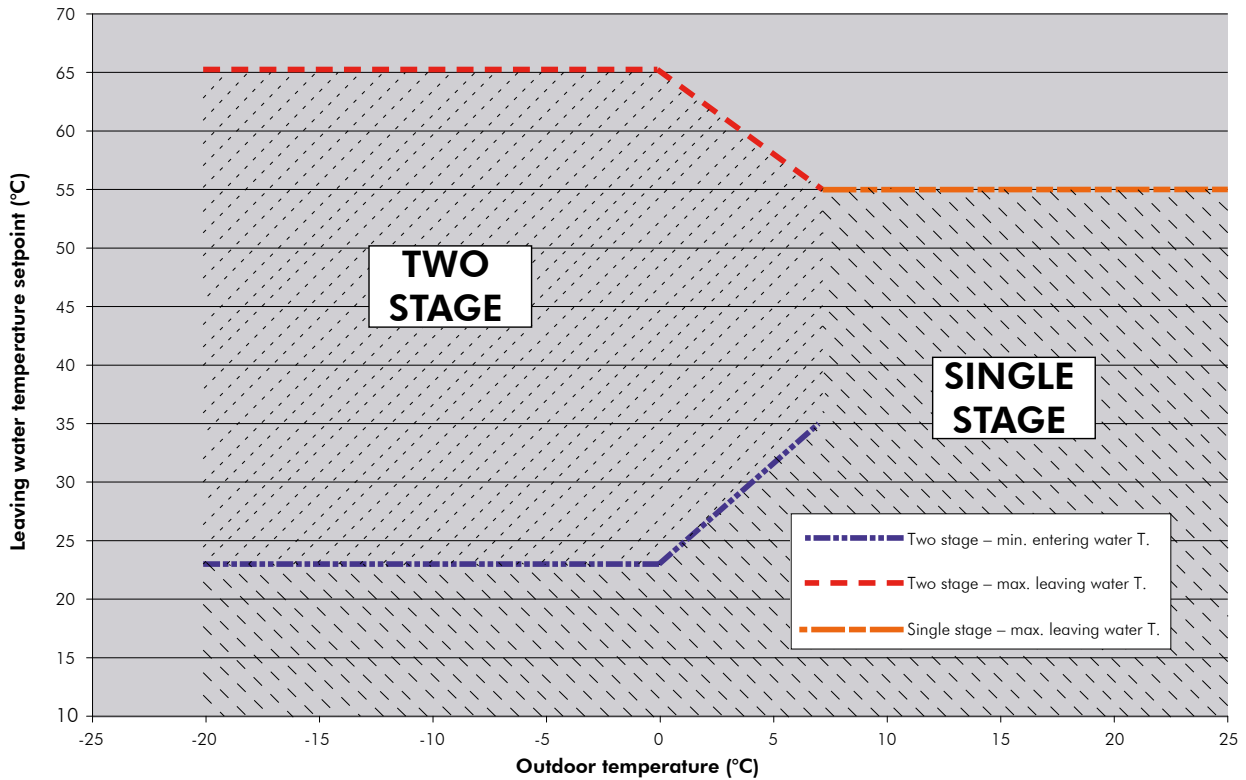
9.4. OPERATING LIMITS

Aqu@Scop HT appliances are equipped with a 2-stage output system with a ratio of 1:2.

When heating needs are low and when the required outlet water temperature is below 55° C, only the first stage is used at reduced capacity until the temperature balance point is reached. In other cases, the Aqu@Scop HT operates at full capacity to supply heating needs until the chosen balance point is reached.

The outlet water temperature is automatically adjusted to the water rule (heating curve) up to a maximum temperature of 65° C.

SINGLE /TWO STAGE OPERATING LIMITATIONS



9.5. THERMODYNAMIC DOMESTIC HOT WATER PRODUCTION

9.5.1. PERFORMANCE

		12-6			
Configuration		C2 Compressor		C1+C2 Compressor	
Outdoor temp.	°C	40	7	0	-10
PAC max. outlet temp.	°C	60	60	65	65
Average capacity	kW	9	5.5	10.6	9.3
DHW temperature	°C	56	58	58	58
Time [min] Initial temperature: 15°C	min	97	163	85	98
Time [min] Initial temperature: 35°C	min	49	87	45	53

		14-7			
Configuration		C2 Compressor		C1+C2 Compressor	
Outdoor temp.	°C	40	7	0	-10
PAC max. outlet temp.	°C	60	60	65	65
Average capacity	kW	11	7.1	13.6	12
DHW temperature	°C	54	57	56	57
Time [min] Initial temperature: 15°C	min	72	124	63	73
Time [min] Initial temperature: 35°C	min	35	65	32	38

		18-9			
Configuration		C2 Compressor		C1+C2 Compressor	
Outdoor temp.	°C	40	7	0	-10
PAC max. outlet temp.	°C	60	60	65	65
Average capacity	kW	13.3	8.3	16	14.1
DHW temperature	°C	53	56	55	56
Time [min] Initial temperature: 15°C	min	60	103	52	61
Time [min] Initial temperature: 35°C	min	28	53	26	31

Tank capacity: 300l

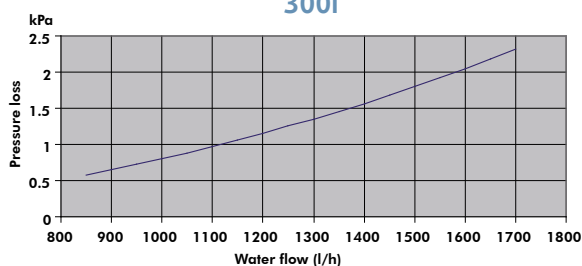


The above performance figures are stated for a system with the Domestic Hot Water tank accessory.

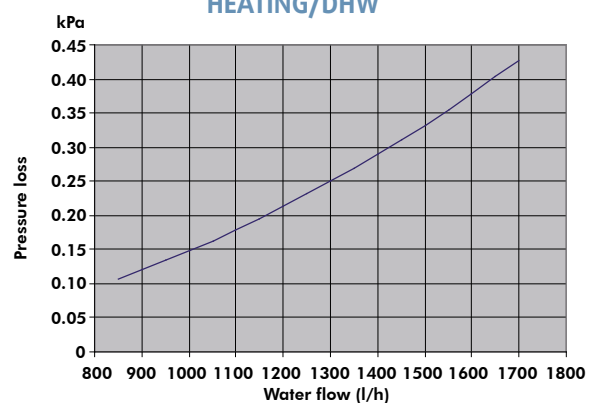
The tank is equipped with a 2.5kW back-up heating element for single or three phase connection. The performances obtained and stated in the above table are without back-up heating. For higher domestic hot water temperatures or for Legionnaires disease protection treatment, the use of the back-up electric heating resistances is required.

9.5.2. PRESSURE LOSS

DHW TANK
300l



3-WAY-VALVE
HEATING/DHW



10. REFRIGERATION AND HYDRAULIC DIAGRAM

SEE APPENDIX

11. 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.

11.1. SITING THE INSTALLATION

The outdoor unit must be installed outdoors with sufficient surrounding clearance to enable unobstructed air circulation through the appliance and access for maintenance work.

11.1.1. PREVAILING WIND

In the case of the unit being sited in areas exposed to high winds, you must avoid the wind hitting the fan blowing surface areas directly to avoid any risk of recycling cooled air. Exchanger fan operation can be disrupted by strong winds, which can cause de-icing problems and fan malfunctions.



Unit operation depends on air temperature. Any recycling of air extracted by the fan lowers the air intake temperature across the exchanger fins and alters the standard operating conditions.

The arrows show the direction of air circulation through the appliance. (Refer to the § **ATTACHEMENT TO THE GROUND**, page 11).

11.1.2. CONDENSATE WATER MANAGEMENT

Depending on temperature and outdoor air humidity conditions, water vapour contained in the air can condense on the finned heat exchanger and even form ice under low outdoor temperature conditions (around $< 5^{\circ}\text{C}$). This condensate water and defrosted water runs off via outlets provided under the exchanger. To aid water run-off and avoid frozen water remaining in the appliance in winter, we recommend that it is mounted at a height of around 10cm off the ground by installing the ant-vibration mounting kit. In this way, condensate and defrosted water can run off freely and be absorbed into the ground or channelled to a basin built under the appliance in order to protect the environment.

In areas where outdoor temperatures fall below 1°C , the system can be equipped with a condensate anti-freeze protection system (e.g. a heated pipe sheath, Not supplied).

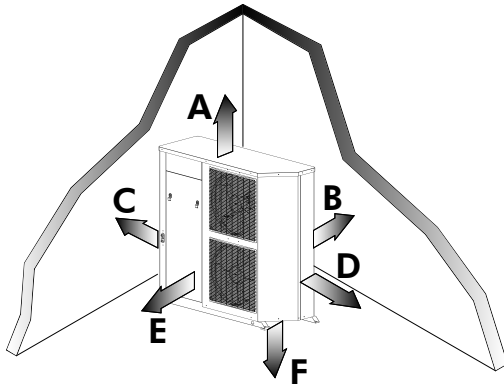
11.1.3. HOW TO REDUCE NOISE POLLUTION

In order to contain noise levels, we equip our appliances with quiet fans and encase the technical compartment in sound-proofed panels. However, noise levels can be reduced even further by following a few installation precautions:

- Do not install the appliance near a bedroom window. Avoid locating the appliance in a corner (increased reverberated noise).
 - Install the rubber pads supplied or anti-vibration pads (available as an option) under the appliance.
 - Do not join the concrete slab supporting the appliance to the structure of the dwelling (structure-borne noise transmission).
-

11.2. CLEARANCE

When choosing the location for the appliance, take care to leave sufficient free clearance on all sides to ensure easy access for maintenance work. The minimum free clearance dimensions indicated must be observed to ensure both proper system operation and allow access for maintenance and cleaning.



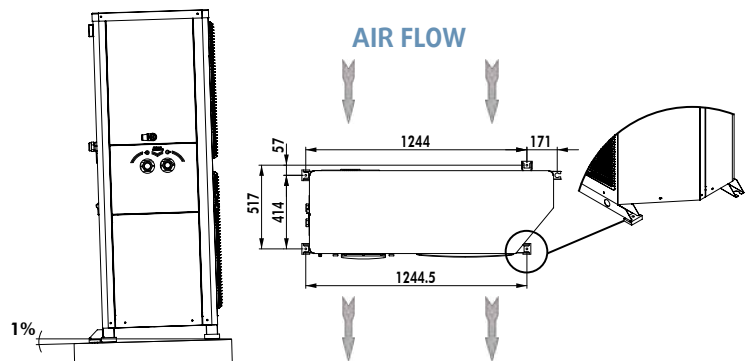
REF.	DIMENSION
A	800mm
B	500mm
C	500mm
D	400mm
E	800mm
F	100mm

11.3. ATTACHEMENT TO THE GROUND

The appliance must be sited on a level and solid floor and preferably on a masonry surface.

Unit mounting measurements are shown on the drawing opposite. A slope of 1 cm/m should be created to assist rainwater drainage.

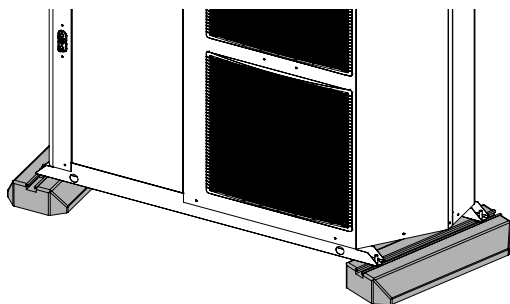
Vibration dampers must be fitted during installation to overcome any risks of vibration being transmitted due to direct contact with a rigid support surface.



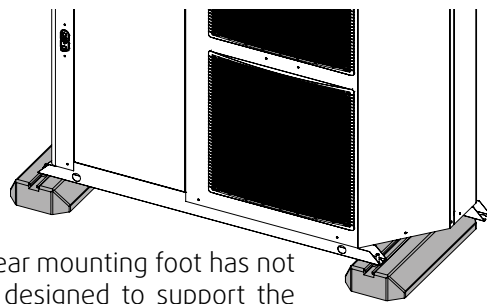
THE UNIT MUST NEVER BE INSTALLED ON A WALL BRACKET.

11.3.1. MOUNTING WITH ANTI-VIBRATION SUPPORTS

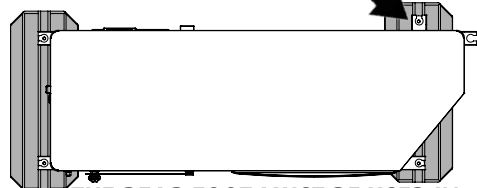
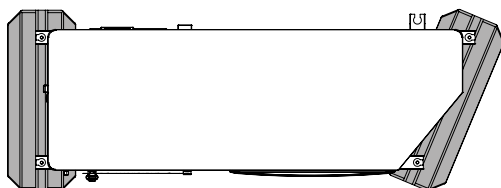
ANGLED FEET



PARALLEL FEET



The rear mounting foot has not been designed to support the weight of the unit on its own.



THE REAR FOOT MUST BE USED IN ACCORDANCE WITH THE ASSEMBLY ILLUSTRATED BELOW.

12. HYDRAULIC LINKS

When choosing and installing water pipes, you must consult and observe all current local standards, regulations and instructions.

12.1. GENERAL RECOMMENDATIONS

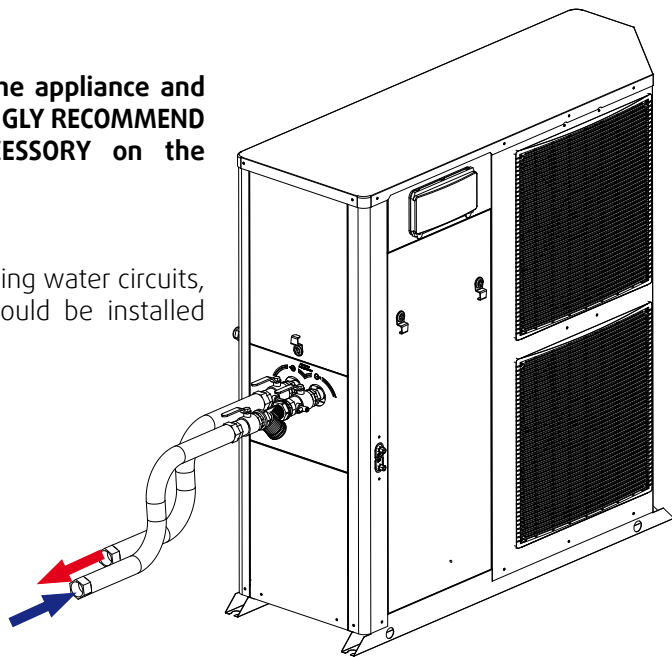
You must design the pipe network with the minimum number of bends and keep the number of changes in height to the strict minimum. This will reduce installation costs and ensure optimum system performance. The pipe network must include:

- A vibration elimination system (e.g.: link hoses available as an accessory) on all pipes connected to the appliance in order to reduce vibrations and noise transmitted to the building fabric.
- Stop cocks to isolate the hydraulic circuit during maintenance.
- Manual or automatic bleed valves at the highest point on the water circuit.
- A suitable system for maintaining water pressure in the circuit (expansion tank).
- The installation of thermometers and pressure gauges on the heat exchanger inlet and outlet to facilitate day-to-day controls and system maintenance.

12.1.1. ANTI-CLOGGING PROTECTION

To avoid any risk of foreign bodies entering the appliance and to guarantee operating performance, WE STRONGLY RECOMMEND THAT YOU INSTALL THE WATER FILTER ACCESSORY on the Aqu@Scop HT inlet pipe.

When installing **Aqu@Scop HT** appliances in existing water circuits, a sludge trap and a removable mesh filter should be installed upstream of the appliance.



12.1.2. MINIMUM HEATED WATER VOLUME REQUIREMENTS – BUFFER TANK.

To ensure that the system operates correctly you must use suitably sized and properly routed pipes for the hydraulic links between the Heat pump and the mains network.

The volume of water contained in the installation must be sufficient to avoid any possibility of the compressor "short cycling", and to guarantee adequate compressor running times in order to provide optimum service life and to ensure that de-icing cycles are performed properly. To ensure the **Aqu@Scop HT** functions efficiently, available installation water volume must be:



200l < available water volume < 250l

When water circulation through heat emitters can be interrupted (thermostatic radiator valves closed) or the heating supply halted, you must ensure that:

- The heat pump maintains its nominal water flow,
- The heat pump operates in a loop with a minimum available volume of 200 litres.

The use of a 3-speed circulation pump enables water flow through the appliance to be adapted to pressure losses in the system. (Pump supplied set on Max position).

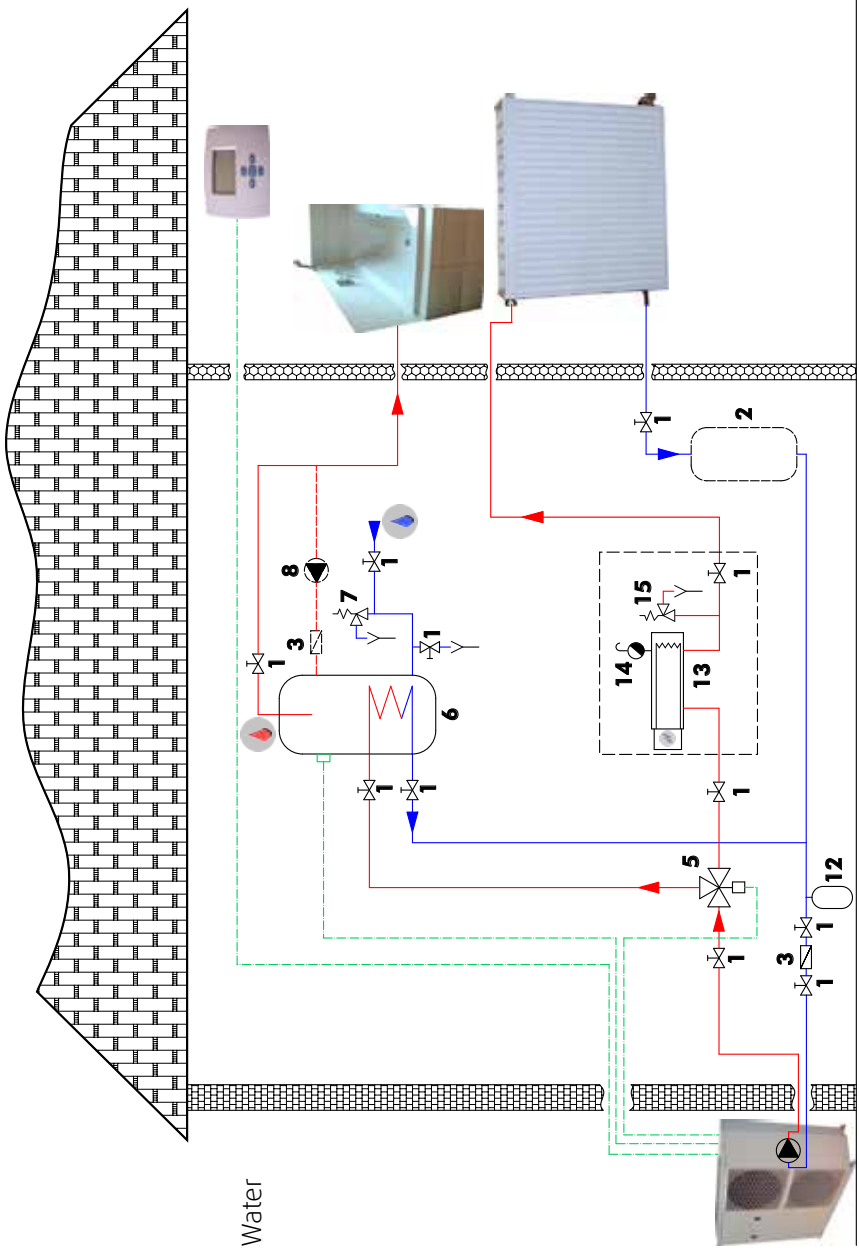
12.2. STANDARD CIRCUITS

12.2.1. AQU@SCOP HT ONLY

Layout 1: Application without room by room regulation

This layout is recommended when the **Aqu@Scop HT** water flow is continuous and close to the nominal value (**no thermostatic valves**).

The buffer tank (2) provides extra circulating water volume to maintain the minimum volume.

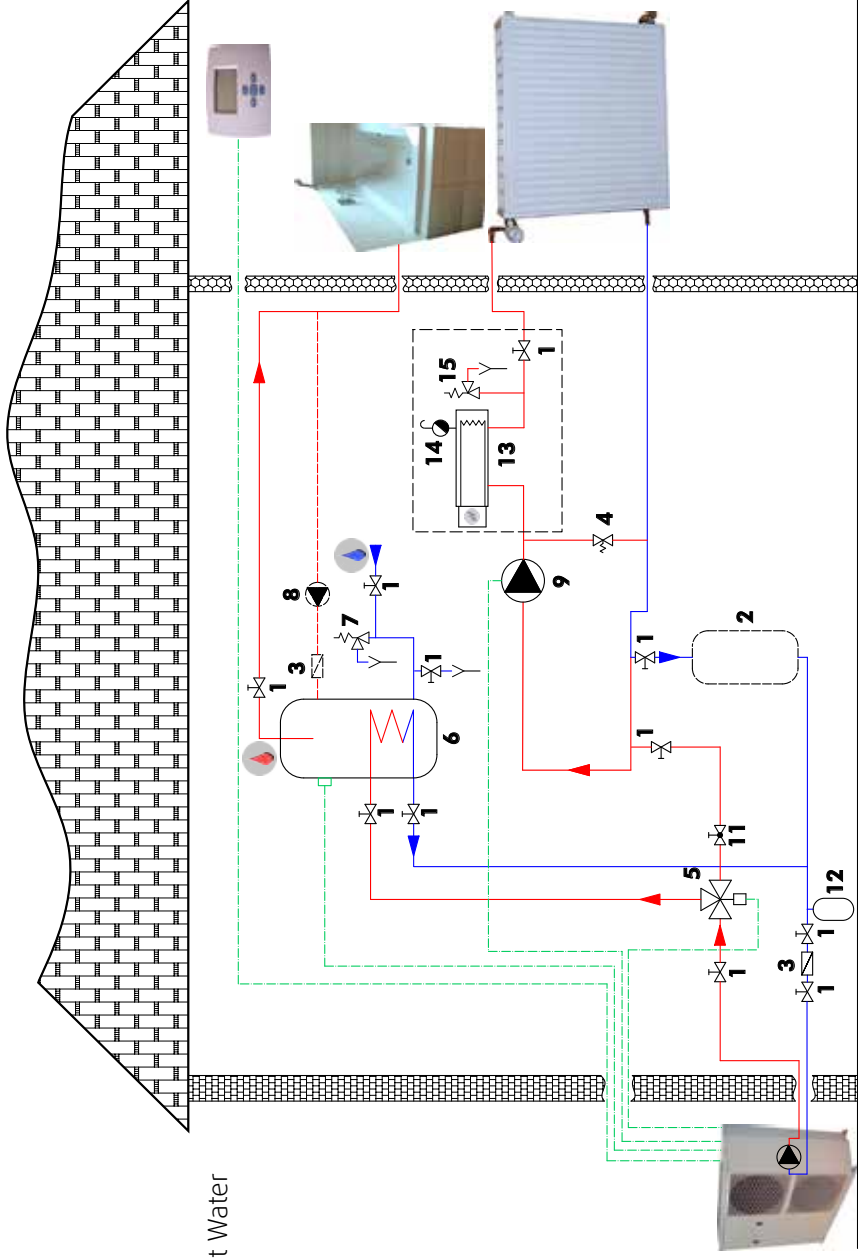


- 1. Stop cocks
- 2. Buffer tank (optional)
- 3. Filter or sludge trap
- 4. Relief valve
- 5. 3-way valve - Domestic Hot Water
- 6. Domestic Hot Water tank
- 7. Safety devices
- 8. Recycling circulation pump (optional)
- 12. Expansion tank
- 13. In-line heater
- 14. Bleed
- 15. Safety valve

Layout 2: Application with room by room regulation

This layout is recommended for heating installations with wide operating water flow variations (radiator thermostatic valves present in the system). We strongly recommend including the buffer tank (2) as it guarantees that the heating loop capacity is higher than the minimum volume when the maximum number of thermostatic valves are closed.

The flow regulating valve (11) is used to balance the flow in heating mode and domestic hot water production mode to always ensure optimum **Aqu@Scop HT** operation.



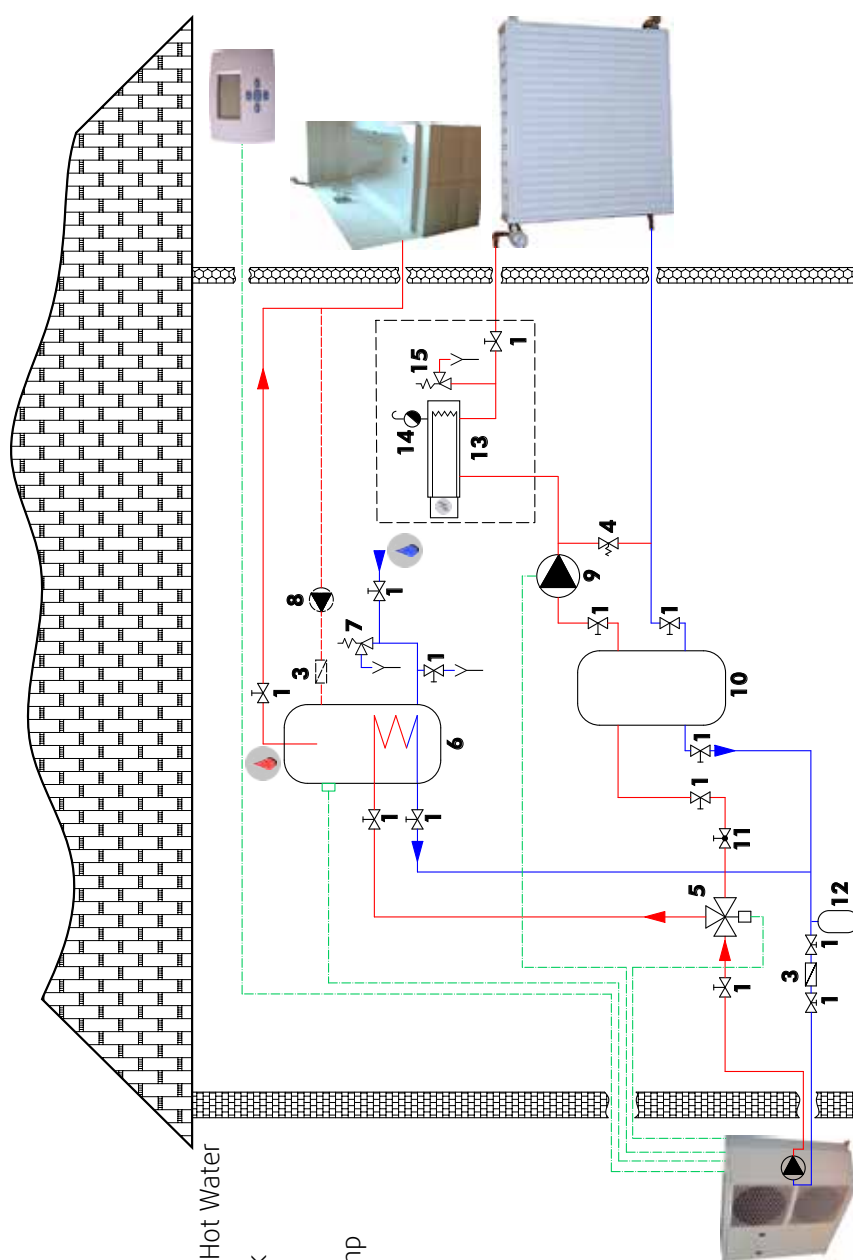
- 1. Stop cocks
- 2. Buffer tank (optional)
- 3. Filter or sludge trap
- 4. Relief valve
- 5. 3-way valve - Domestic Hot Water
- 6. Domestic Hot Water tank
- 7. Safety devices
- 8. Recycling circulation pump (optional)
- 9. Circulation pump
- 11. Flow regulating valve
- 12. Expansion tank
- 13. In-line heater
- 14. Bleed
- 15. Safety valve

Layout 3: Application with room by room regulation

This layout is also recommended for heating installations with wide operating water flow variations (radiator thermostatic valves present in the system). Minimum system volume is guaranteed by a mixing tank (10). Take care when calculating the volume of water in the installation and only take account of 50% of the mixing tank's volume.

Example: For a useful volume of 100 litres the actual mixing tank volume will be 200 litres.

The flow regulating valve (11) is used to balance the flow in heating mode and domestic hot water production mode to always ensure optimum **Aqu@Scop HT** operation.

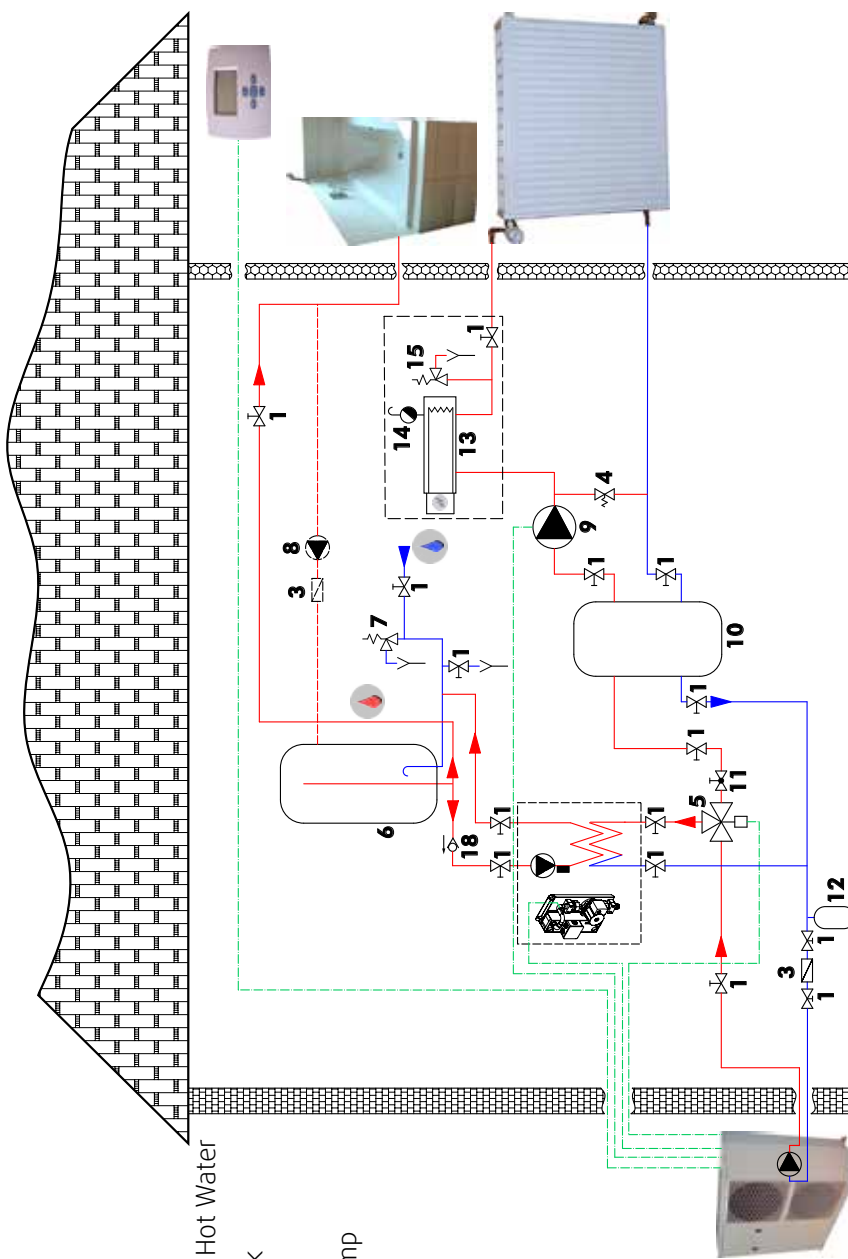


- 1. Stop cocks
- 3. Filter or sludge trap
- 4. Relief valve
- 5. 3-way valve – Domestic Hot Water
- 6. Domestic Hot Water tank
- 7. Safety devices
- 8. Recycling circulation pump (optional)
- 9. Circulation pump
- 10. Mixing tank
- 11. Flow regulating valve
- 12. Expansion tank
- 13. In-line heater
- 14. Bleed
- 15. Safety valve

Layout 4: Domestic Hot Water (DHW) production by way of the plate exchanger kit for fitment on the existing DHW tank

Example for a wall-mounted tank (DHW outflow via the bottom)

A different kit is required for a floor-mounted tank (DHW outflow via the top). Please refer to the corresponding documentation.



1. Stop cocks
3. Filter or sludge trap
4. Relief valve
5. 3-way valve – Domestic Hot Water
6. Domestic Hot Water tank
7. Safety devices
8. Recycling circulation pump (optional)
9. Circulation pump
10. Mixing tank
11. Flow regulating valve
12. Expansion tank
13. In-line heater
14. Bleed
15. Safety valve
18. Non-return valve

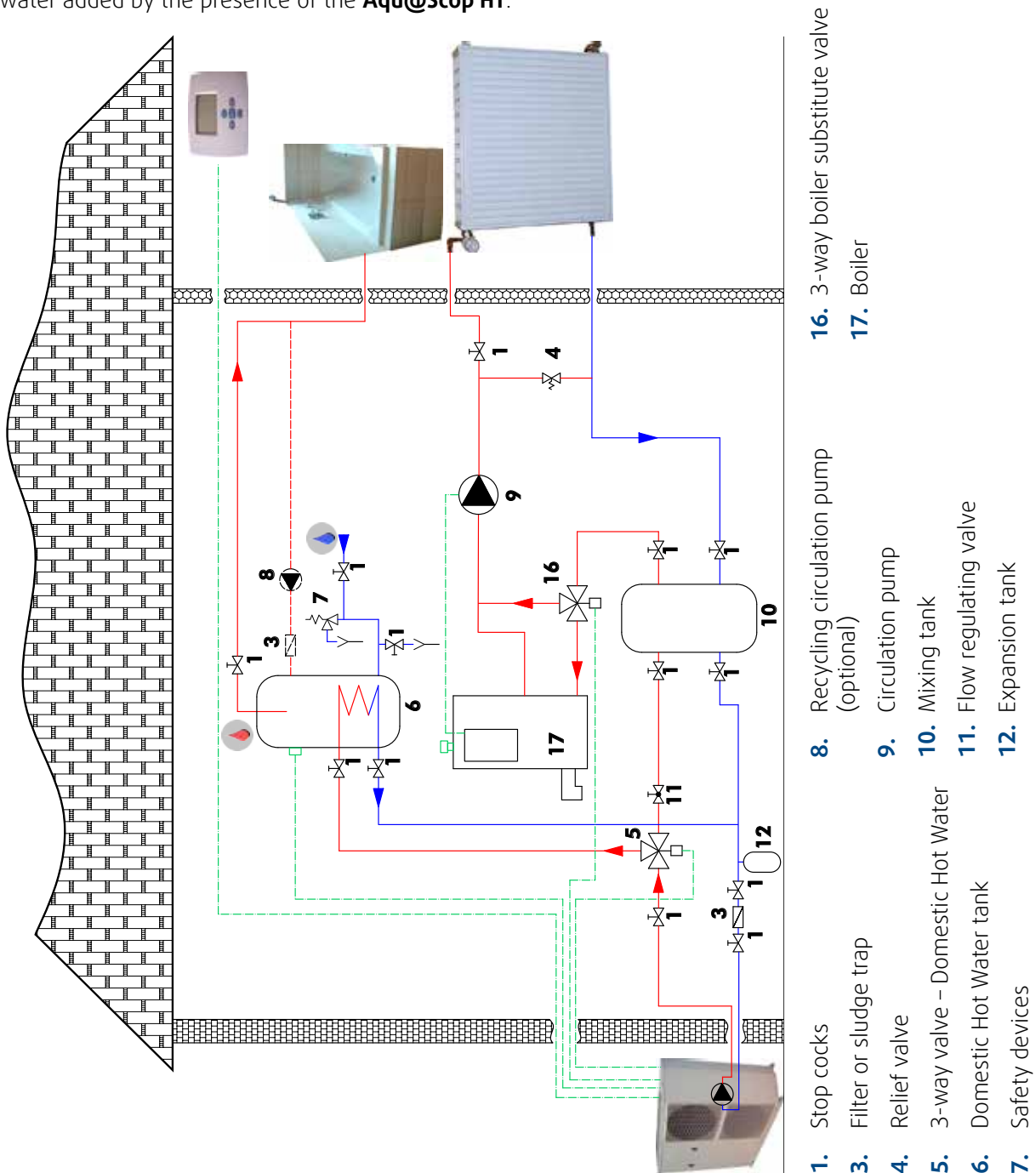
12.2.2. AQU@SCOP HT AS A BOILER SUBSTITUTE

We recommend the fitting of a zone valve to avoid heat losses via the boiler when the **Aqu@Scop HT** is working on its own.

All system devices should be of a suitable size to limit pressure losses.

Water flow within the heating circuit is normally driven by the circulation pump already present in the installation (recommended solution) or by the **Aqu@Scop HT's** circulation pump. In this case, you must ensure that the circulation pump generates sufficient water pressure.

There is no need to replace the existing buffer tank on the circuit to take account of the small volume of water added by the presence of the **Aqu@Scop HT**.



IMPORTANT: the hydraulic kit available as an option enables you to prepare the circuit for connection to the **Aqu@Scop HT** in accordance with our recommendations. The hydraulic kit is available with or without zone valves.

DO NOT FIT A BOILER SUBSTITUTE VALVE

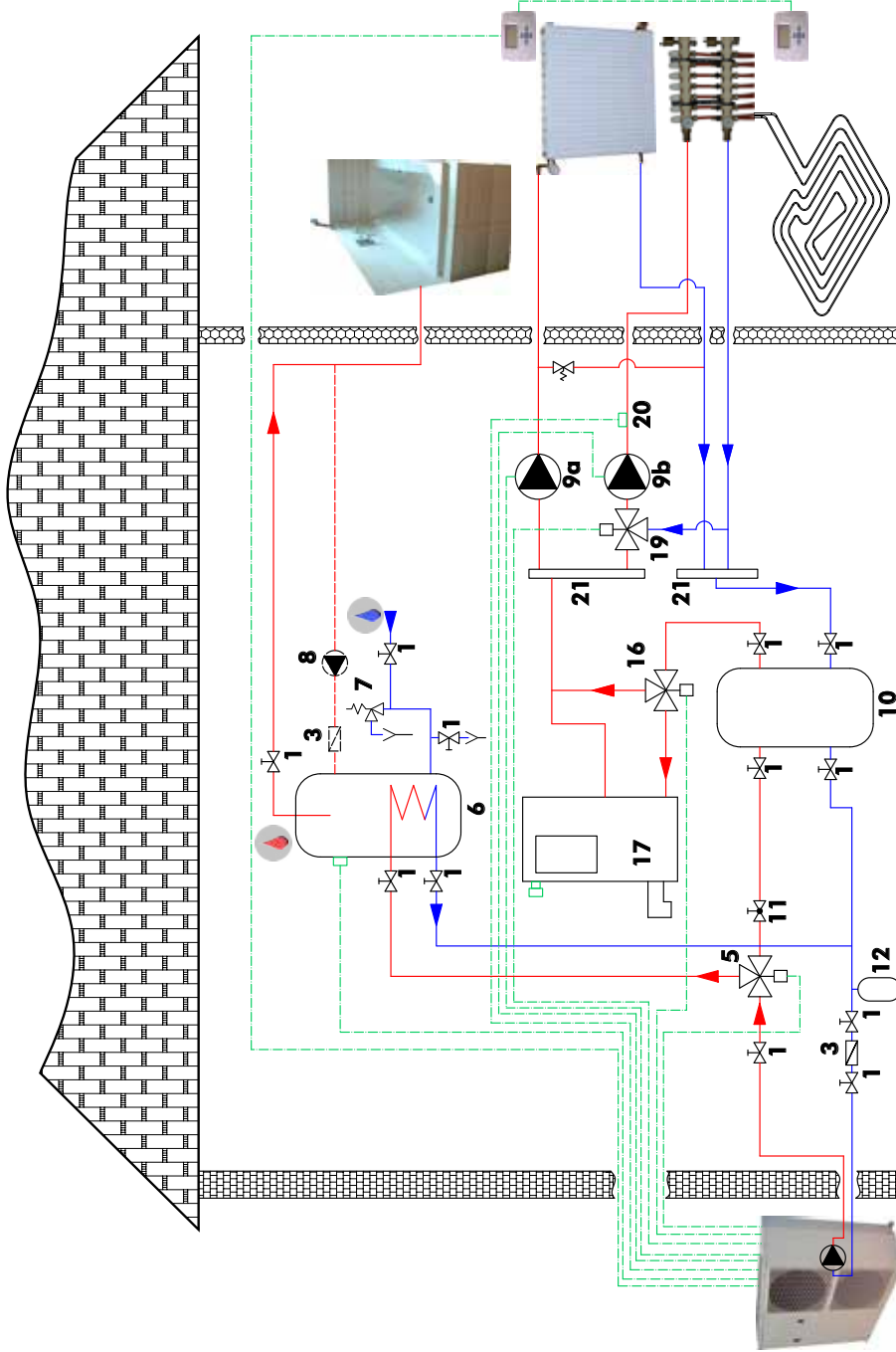


- WALL-MOUNTED GAS-FIRED BOILER with domestic hot water production and a single circulation pump used for both heating and domestic hot water.
- BOILER with a circulation pump.

12.2.3. AQU@SCOP HT – DUAL ZONE INSTALLATION (UNDER-FLOOR HEATING + RADIATORS)

The **Aqu@Scop HT** manages a radiator zone (high temperature, zone 2) and an under-floor heating zone (low temperature, zone 1) by way of an under-floor temperature outlet probe, a modulating 3-way valve (230V 3 phase motor) and a water circulation pump for each zone.

Each zone can be controlled by a dedicated ambience terminal, which then enables the **Aqu@Scop HT** to manage 2 independent water laws. When the radiators zone is not in operation, the **Aqu@Scop HT** switches over automatically to the under-floor heating water law, and thereby optimises the seasonal COP for the entire installation.



- 1. Stop cocks
- 3. Filter or sludge trap
- 4. Relief valve
- 5. 3-way valve – Domestic Hot Water
- 6. Domestic Hot Water tank
- 7. Safety devices
- 8. Recycling circulation pump (optional)
- 9. Circulation pump (a: radiator / b: under-floor heating)
- 10. Mixing tank
- 11. Flow regulating valve
- 12. Expansion tank
- 16. 3-way boiler substitute valve
- 17. Boiler
- 19. Low temperature zone (under-floor heating) 3-way modulating valve
- 20. Under-floor heating outlet temperature probe (DZWT)
- 21. Collector

12.3. WATER QUALITY

The water must be analyzed; the hydraulic network system installed must include all elements necessary for water treatment: filters, additives, intermediate exchangers, drain valves, vents, check valves, etc., according to the results of the analysis.



The Aqu@Scop HT must not run on a network with open loops, likely to cause incidents related to oxygenation, or with non treated table water.

Using improperly treated or non treated water in the **Aqu@Scop HT** may cause scaling, erosion, corrosion or algae or sludge deposits in the exchangers. Refer to a specialist skilled in water treatment to determine any treatment to apply. The manufacturer will not be held liable for damages caused when non treated or improperly treated water, demineralized water, salty water or sea water are used.

Apply the following guidelines :

- No NH₄⁺ ammonium ions in the water, highly detrimental to copper. <10mg/l
- Cl⁻ chloride ions are detrimental to copper with a risk of puncture by picking corrosion. <10mg/l.
- SO₄²⁻ sulphate ions may cause perforating corrosion. < 30mg/l.
- No fluoride ions (<0.1 mg/l)
- No Fe²⁺ and Fe³⁺ ions, particularly in case of dissolved oxygen. Fe < 5mg/l with dissolved oxygen < 5mg/l. The presence of these ions with dissolved oxygen indicates corrosion of steel parts, likely to generate corrosion of copper parts under Fe deposits, particularly in the case of multitubular exchangers.
- Dissolved silica: silica is an acid element of water and may also cause corrosion. Content < 1mg/l.
- Water hardness: TH > 2.8K. Values between 10 and 25 may be recommended. This facilitates scaling deposits likely to limit copper corrosion. Excess TH values may lead to clogging the pipes.
- TAC < 100
- Dissolved oxygen: Prevent any sudden change in the water's oxygenation conditions. Also, avoid deoxygenating water by sparging inert gas as well as overoxygenating it by pure oxygen sparging. Disturbing oxygenation conditions destabilizes copper hydroxides and particle salting-out.
- Electrical Resistivity - Conductivity: The higher the resistivity, the slower the corrosion. Values above 3000 ohm/cm are preferred. A neutral environment favours maximum resistivity. For electrical conductivity, values around 200-600 S/cm can be recommended.
- pH: neutral pH at 20°C (7 < pH < 8)



If the water circuit is to be drained for a time exceeding one month, the circuit must be fully charged with nitrogen to prevent any risk of corrosion by differential venting.



The manufacturer is not liable for recommendations in terms of water treatment (call a specialized company).

However, this matter has a critical nature, and particular care must be given to ensure that the type of treatment applied is effective.

The liability of the manufacturer or its representative will not be sought when non treated water or non compliant quality water is used.

12.4. CONNECTION TO THE CENTRAL HEATING LOOP

You must check water tightness and the cleanliness of the installation before connecting the **Aqu@Scop HT**.

For the **Aqu@Scop HT**'s WATER INLET and OUTLET connections, you must install manual stop cocks with the same diameter as the main pipe work. This will enable maintenance work to be carried out on the **Aqu@Scop HT** without having to bleed the entire system.

A link valve with pressure tap kit is available.

The **Aqu@Scop HT** must be protected by a water filter. When connecting this device to the **Aqu@Scop HT**, take care to keep the water filter sieve pointing downwards. A sludge trap should be fitted in the event of high sludge build-ups.



AN EXPANSION TANK ADAPTED TO THE VOLUME OF WATER IN THE INSTALLATION MUST BE INSTALLED.

It is important to ensure that the mains water supply pressure is sufficient to fill the installation.

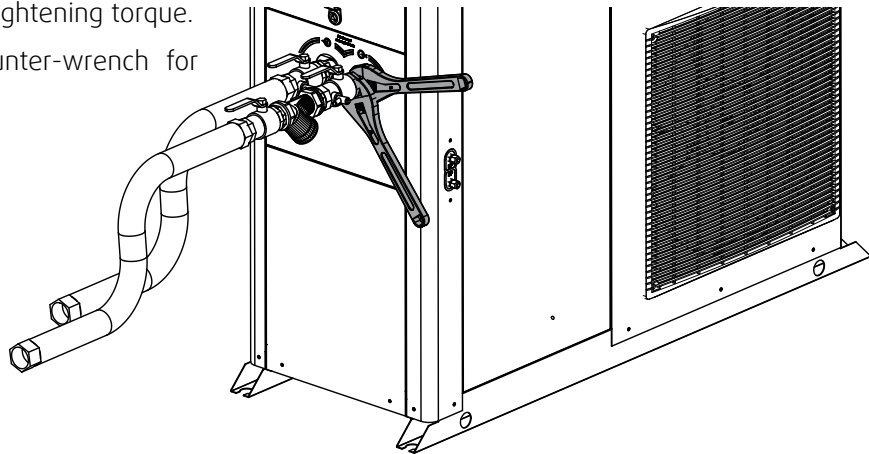


THE MANUFACTURER'S WARRANTY IS VOID IF THE FILTER SUPPLIED WITH THE AQU@SCOP HT IS NOT INSTALLED TO PROTECT THE APPLIANCE

WARNING!

Take care not to damage the hydraulic pipe links by applying too much tightening pressure. Use a second wrench to compensate for the tightening torque.

You should always use a counter-wrench for tightening valves.



12.5. HEAT INSULATION

To guarantee proper energy efficiency and compliance with current standards, water pipes passing through uninhabited zones should be properly lagged to retain heat.

To achieve correct insulation with conductivity of 0.04 W/mK, lag the pipes with insulating material with a radial thickness between 25mm and 30 mm.

12.6. FILLING THE SYSTEM WITH WATER

Once the installation is complete and after having clean and rinsed out the circuit network, you must fill the water circuit in accordance with current professional standards until you obtain the service pressure which will be:

0.5 bar < P. service < 2.5 bars.

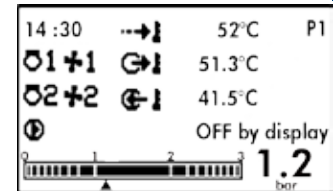
The **Aqu@Scop HT** is equipped with an electronic water pressure sensor. This can be viewed on the main P1 screen on the display, as well as on the Maintenance screens.

The water supply should come either from the mains network or from the Heat Pump or from any other point on the installation.

Check that the automatic bleed valve operates correctly.

You must completely bleed the circuit of all air to ensure efficient operation.

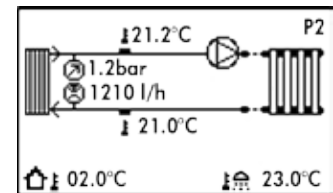
Close the inlet water valve once the hydraulic circuit is filled correctly.



12.7. ELECTRONIC FLOW METER

The condenser water circuit is equipped with a vortex effect electronic flow meter. This device provides real-time readings of the installation's water flow and reassurance that this flow is adequate before starting the unit.

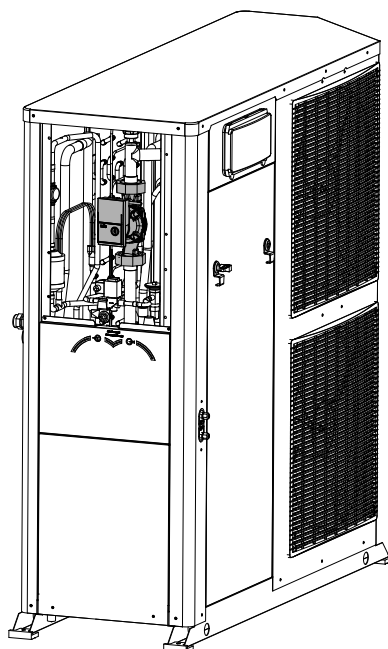
The appliance is also equipped with a group of safety devices including a valve set at 3 bars, and a manual relief valve.



12.8. WATER FLOW REGULATION

Water flow can be viewed on screen P2 as well as on the Maintenance screens.

Use the water circulation pump speed selector to adjust the flow in the installation at the recommended nominal value (Refer to the § **PHYSICAL CHARACTERISTICS**, page 7). Pressure drop of the installation must be situated in the circulator operating range.



13. WIRING DIAGRAM AND LEGEND

13.1. WIRING DIAGRAM

SEE APPENDIX

13.2. LEGEND


N 802

SE 4213	Aqu@Scop HT 12-6	Power	1-Phase	230V +/-10% 50Hz
SE 4214	Aqu@Scop HT 12-6	Control	1-Phase	230V +/-10% 50Hz
SE 4215	Aqu@Scop HT 14-7	Power	1-Phase	230V +/-10% 50Hz
SE 4216	Aqu@Scop HT 14-7	Control	1-Phase	230V +/-10% 50Hz
SE 4217	Aqu@Scop HT 12-6/14-7	Power	3-Phases	3N~400V +/-10% 50Hz
SE 4218	Aqu@Scop HT 12-6/14-7	Control	3-Phases	3N~400V +/-10% 50Hz
SE 4219	Aqu@Scop HT 18-9	Power	3-Phases	3N~400V +/-10% 50Hz
SE 4220	Aqu@Scop HT 18-9	Control	3-Phases	3N~400V +/-10% 50Hz


13.2.1. POWER SUPPLY

Terminal connections:

230V +/-10% 50Hz

- > L : phase
- > N : neutral
- >  : ground

3N~400V +/-10% 50Hz

- > L1 (L1) : phase
- > L2 (L2) : phase
- > L3 (L3) : phase
- > N (N) : neutral
- >  : ground

This supply comes from a CIRCUIT BREAKER or a FUSE HOLDER equipped with aM type fuses supplied by the installer. Fuse sizes are indicated on the chart on the following page.

The appliance's electrical installation and wiring must comply with the country's current standards.

13.2.2. WIRING DIAGRAM KEY DESCRIPTIONS

FT1/2 : M1/2 compressors thermo-magnetic relay (three phase models)

FF1/2 : M1/2 compressors protection fuse carrier (single phase models)

KM1/2 : M1/2 compressors power contactor or relay

M1/2 : Compressors

CM1/2 : M1/2 compressors capacitors (single phase models)

AS1/2 : "Soft START" starter

R1/2 : Sump resistance

OF1/2 : Air exchanger fan motor

KOF1 : OF1 fan motor relay

FOF1/2 : OF1/2 motors internal safety

COF1/2 : OF1/2 motors capacitors

CF : OF1/2 fan motor variator

RAG : anti-freeze resistance

TAG : anti-freeze thermostat

FFC : Control circuit protection fuse carrier

KA1 : Phase sequence and cut-out control module (three phase models)
μPC : Controller
FT1/2 : Thermo-magnetic relays ancillary contacts for M1/2 compressors
HP : Automatic reset high pressure switch
EEV : Electronic pressure relief valve
IHP : Intermediate high pressure switch
DHP : De-icing high pressure switch
RV : 4-way cycle changeover valves
ISV : Injection valve
DRV : De-icing valve
ESV : Oil equalization valve
EP : Pressure transducer (evaporation pressure)
OCT : De-icing temperature probe (evaporator inlet)
OAT : Outdoor temperature probe
CDT : High discharge temperature
CST : Evaporation temperature probe
FFT : T1 transformer protection fuse (24V secondary circuit)
T1 : Ambience terminal 230/24V power supply transformer
WFL : Flow meter (water flow measurement)
WPR : Water pressure sensor
WP : Water pump
KWP : WP water pump relay
EWT : Inlet water temperature probe
LWT : Outlet water temperature probe

13.2.2.1. OPTIONS

DZ WP/2 : Dual zone water pumps
DZ MV : Dual zone mixer valve
AEH1 : Backup electric heating (Stage 1)
AEH2 : Backup electric heating (Stage 2)
BOILER : Hot water boiler (ON dry switch)
DHW WP : Domestic Hot Water circulation pump (kit with plate exchanger)
DHW V : Domestic Hot Water 3-way valve
DHW EH : Domestic Hot Water tank electric heating resistance
BR V : Substitute Boiler 3-way valve
DZWT : Dual zone water temperature probe (Under-floor heating outlet)
DHWT : Domestic hot water temperature probe
SPWT : Swimming pool water temperature probe
ON/OFF : Remote ON/OFF switch (Summer/Winter parameter settings)
LS : Off-peak hours electricity contact (DHW)
EMH : Backup heating switch (electric heater and boiler substitution)

13.2.3. CONTACTOR FUSE RATINGS, NOMINAL CURRENTS SETTINGS (CLASS AC3/AC1)

Supply voltages		3N~400V +/-10% 50Hz		
		12-6	14-7	18-9
Only Aqu@Scop HT General protection fuse rating (not supplied) aM type (1)		16A	16A	20A
Fuse ratings				
FFC	aM type	6A	6A	6A
FFT	T type	1.6A	1.6A	1.6A
Thermo-magnetic cut-out switch				
FT1	Plage	9 - 14A	9 - 14A	9 - 14A
	Réglage	10A	11A	13A
FT2	Plage	4 - 6.3A	4 - 6.3A	4 - 6.3A
	Réglage	4.2A	5.1A	5.6A
Contactors				
KM1		12A	12A	/
KM2		9A	9A	9A

Supply voltages		230V +/-10% 50Hz	
		12-6	14-7
Only Aqu@Scop HT General protection fuse rating (not supplied) aM type (1)		32A	32A
Fuse ratings			
FF1	aM type	25A	25A
FF2	aM type	12A	16A
FFC	aM type	6A	6A
FFT	T type	1.6A	1.6A
Contactors			
KM2		12A	/

(1) These values are provided for information purposes only and must be checked and adjusted in relation to currently applicable standards. They vary depending on the type of installation and the choice of conductors.

14. 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.

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.

The use of under-sized power supply cables can lead to major losses of around 100W to 200W.

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

1. Power supply cable length.
2. Maximum unit starting current draw – the cables shall supply the appropriate voltage to the unit terminals for starting.
3. Power supply cables' installation mode.
4. Cables' capacity to transport the total system current draw.

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

If the planned installation includes an ambience terminal, the latter must be connected with shielded cable which must not run through the same conduits as the power supply cables, as the possible voltage generated could cause a unit operating fault.

14.1. PHASE SEQUENCE AND CUT-OUT CONTROLLER

VERY IMPORTANT:

3N~400V-50HZ

The outdoor unit is equipped as standard with a phase sequence and cut-out controller located in the electrical box.

THE LED'S INDICATE THE FOLLOWING CONDITIONS:

Green LED = 1

Yellow LED =1

Power ON

The compressor rotation direction is correct.

Green LED = 1

Yellow LED =0

Phase inversion or phase absent (L1)

The compressor and the fans do not start.

Green LED = 0

Yellow LED =0

Phase absent (L2 or L3)

The compressor and the fans do not start.

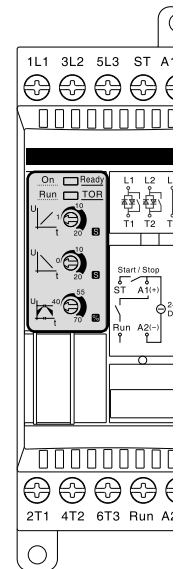
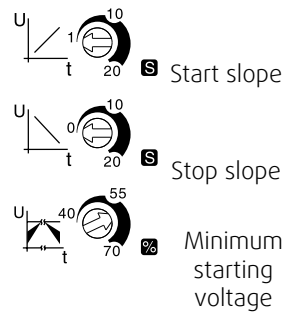
14.2. PROGRESSIVE START-UP

3N~400V-50HZ

The **Aqu@Scop HT 18-9** is equipped with a progressive starter (soft start) for the C1 compressor. The starter is situated in the electrical box of the outdoor unit and marked "**AS1**".

It is important to check the following settings:

- Start slope 1s
- Stop slope 0s
- Minimum starting voltage 60%



230V +/-10% 50Hz

IMPORTANT :

The compressors are equipped with a soft starter. The starter is situated in the electrical box of the outdoor unit and marked "**AS1/2**".

THE LED'S INDICATE THE FOLLOWING CONDITIONS:

Green diode	Red diode	Meaning	Recommended action	Comments
On	Off	No fault		
Off	Off	No supply voltage present at starter terminals.	Check the power supply to the PAC. Check the condition of the 230V protection fuse. Replace the fuse if it has melted.	
Flashing	Off	Insufficient supply voltage (compressor stopped).	Measure the compressor starter supply voltage at rest. Cut the power supply to the PAC and check whether or not the fault reappears. Refer to the following cause in the event of repeated failure.	
		Defective starter power supply component.	Cut the power supply to the PAC. If the fault persists, replace the starter.	
On	Flashing twice ■ ■	Insufficient compressor starting voltage (<190V).	Check the mains supply voltage <u>at rest</u> . Contact the electricity supplier if < 207V. With the compressor running, check the mains supply voltage and the starter output voltage. In the event of major voltage drop, check the diameter of the PAC power supply cable. As a last resort, contact the electricity supplier.	The alarm resets itself automatically after 5 min. If the fault re-occurs during the next start-up procedure, the compressor seizes and the power supply has to be disconnected to reset it.
On	Flashing 3 times ■ ■ ■	Excessive compressor starting current.	Force the compressor to start several times and check whether it is a one-off or recurring fault. If the fault persists, when the compressor is running, check for normal current draw. In the event of excessively-high current draw, replace the compressor.	The alarm resets itself automatically after 5 min. If the fault re-occurs during the next start-up procedure, the compressor seizes and the power supply has to be disconnected to reset it.
			Starter fault. Replace the starter.	
On	Flashing 4 times ■ ■ ■ ■	Starter internal condenser	Replace the starter.	
On	Flashing 5 times ■ ■ ■ ■ ■	Incomplete or defective compressor starting sequence	Force the compressor to start several times and check whether it is a one-off or recurring fault. In the event of a persistent fault, check the compressor power supply cable.	The alarm resets itself automatically after 5 min. If the fault re-occurs during the next start-up procedure, the compressor seizes and the power supply has to be disconnected to reset it.

14.3. CONNECTIONS

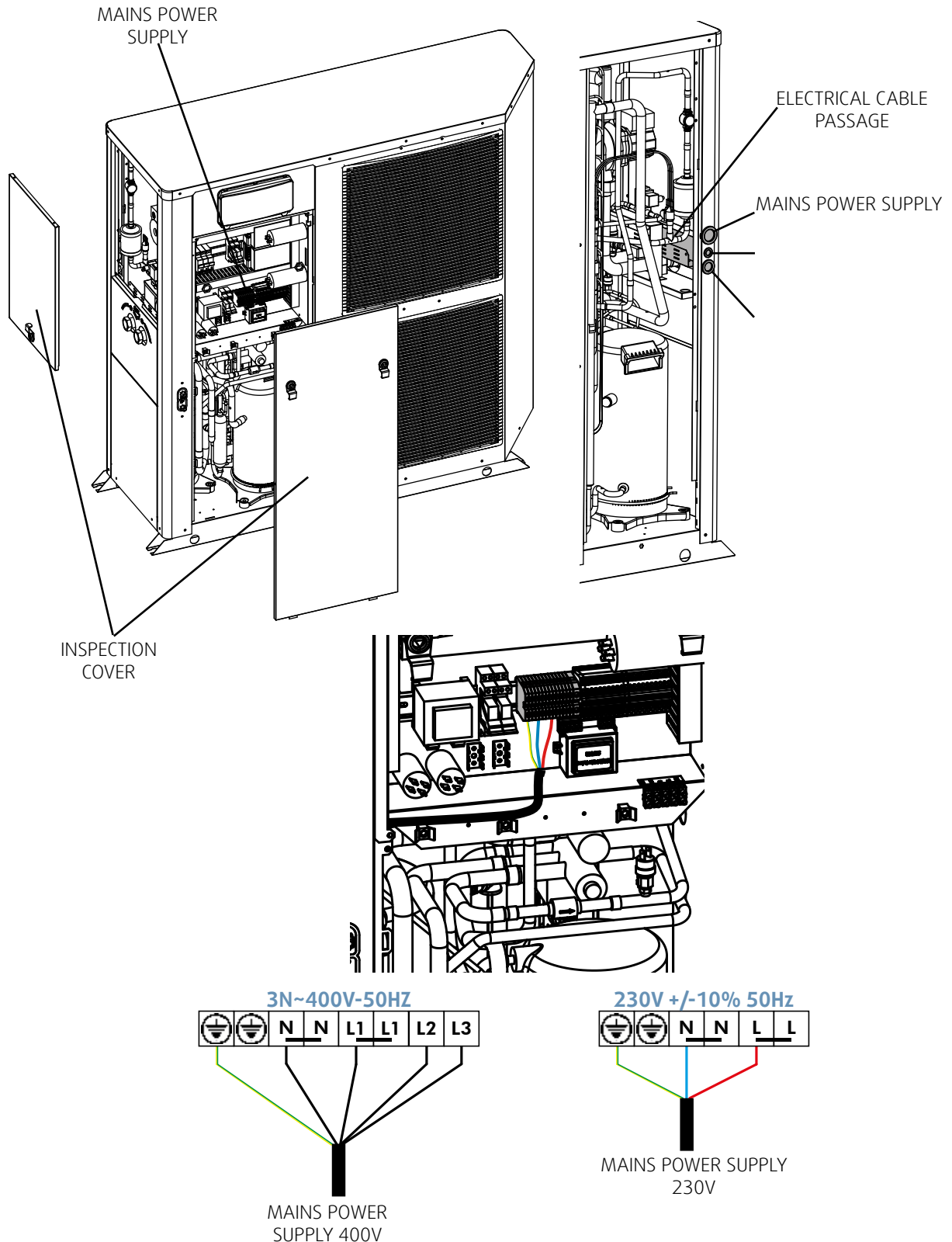
Remove the inspection cover to gain access to the electrical connection box.

Pass the power supply cable through the cable passage provided on the appliance.

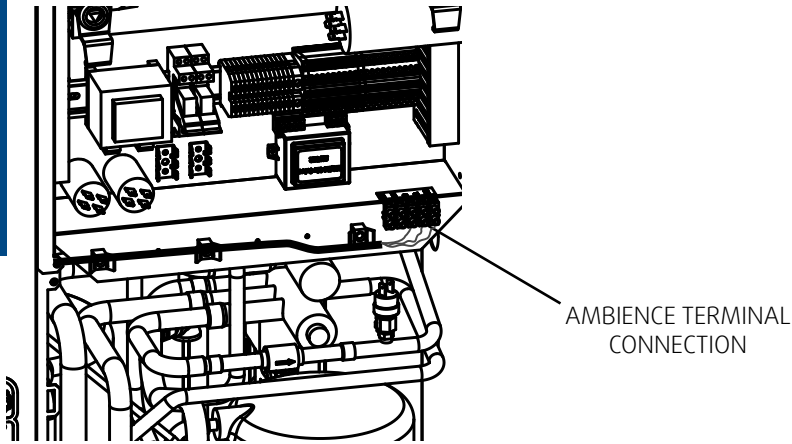
Install end fittings suitable for the cable section to ensure a good contact. Make the connections as shown.

14.3.1. MAINS POWER SUPPLY

A circuit breaker or fuse holder (not supplied) must be installed on the main power supply of the unit in accordance with the circuit diagram; for the ratings, refer to the electrical specifications.



14.3.2. AMBIENCE TERMINAL



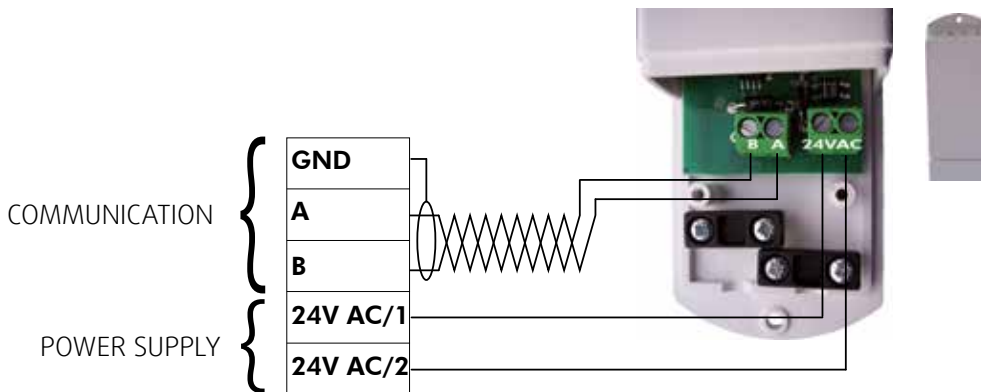
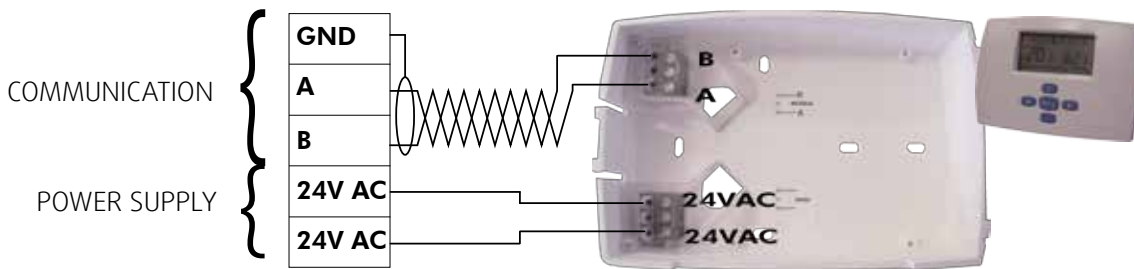
2 separate cables for power supply (24V) and communication (A-B-GND).

Power supply 24V:

Single pair cable: 1 mm²

Communication:

Shielded twisted single pair cable with screen 0.33 mm² to 0.5mm² (AWG 20/22)



15. DOMESTIC HOT WATER

15.1. CONNECTION TO THE CENTRAL HEATING LOOP

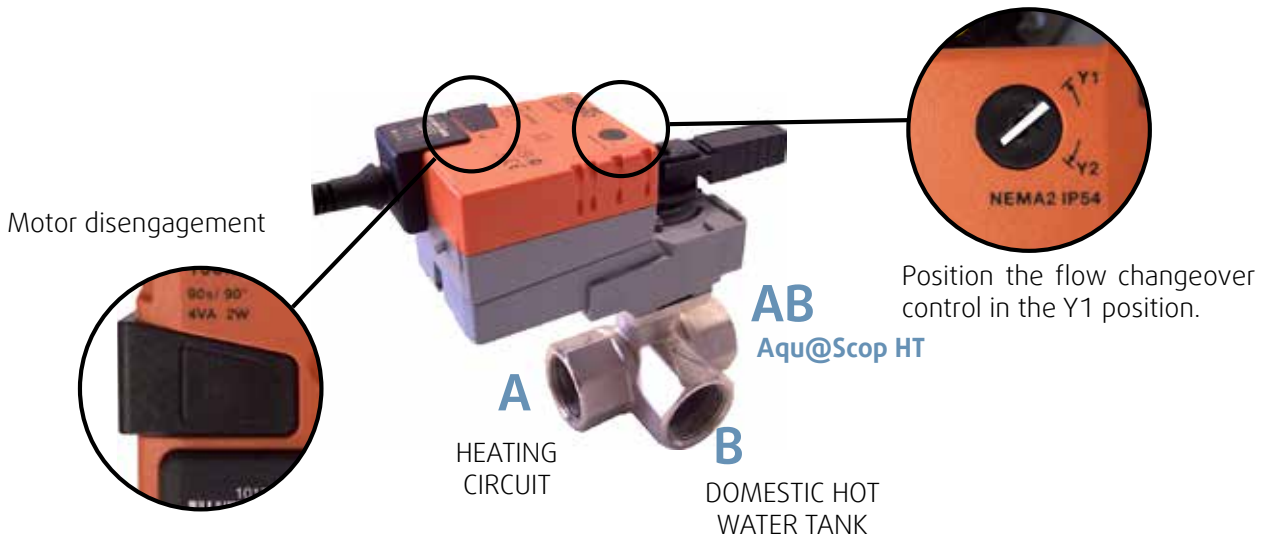
An On-Off 3-way valve directs hot water produced by the **Aqu@Scop HT** to either the heating circuit or the domestic hot water tank. Hydraulic connections must be made in accordance with the circuit layout diagrams provided.

Warning: You must ensure that the 3-way valve orifices (marked A, B and AB) are connected correctly to the circuit in order for the valve to operate in accordance with the electrical diagram provided.

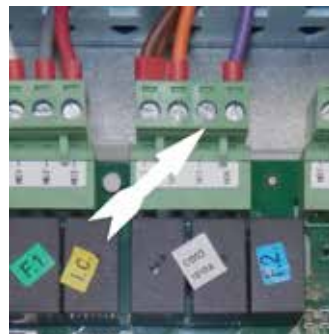
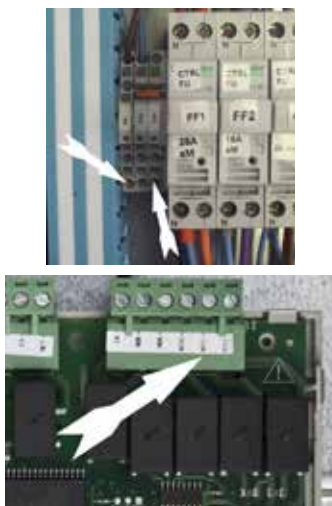
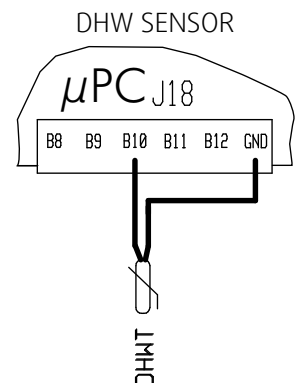
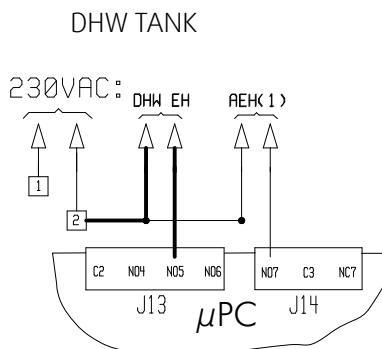
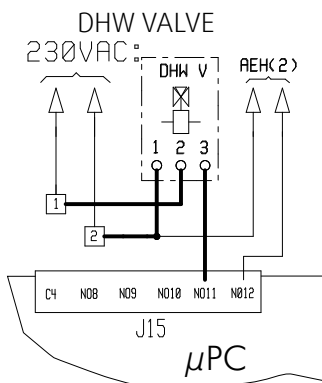
15.1.1. 3-WAY HEATING / DOMESTIC HOT WATER VALVE

Fit the valve in accordance with the flow direction marks etched on the valve.

THE CONNECTIONS MUST CORRESPOND EXACTLY WITH THE FLOW DIRECTIONS INDICATED ON THE LAYOUT DIAGRAM FOR THE TYPE OF INSTALLATION.



15.1.1.1. ELECTRICAL CONNECTIONS



15.2. DOMESTIC HOT WATER PRODUCTION MODES

The **Aqu@Scop HT** controller manages domestic hot water production in accordance with the following operating modes:

- PERMANENT COMFORT MODE
Domestic hot water production has priority over heating except when the ambience temperature / set temperature difference is greater than 2° C (Maximum one hour).
Example: Set temperature = 20°C, Ambience < 18°C
- ECONOMY MODE
Domestic hot water is produced during off-peak hours (dry contact) or in accordance with times programmed in the controller.
Option: Possibility to restart domestic hot water production outside off-peak hours if the water temperature has reached a programmable minimum temperature.
- IMMEDIATE DOMESTIC HOT WATER PRODUCTION
The **Aqu@Scop HT** 's regulator enables domestic hot water production to be forced as required. At the end of the cycle, the system returns to its usual operating mode.

The Legionnaires' Disease protection treatment managed by the **Aqu@Scop HT** 's controller is fully programmable (frequency, temperature threshold, treatment length).

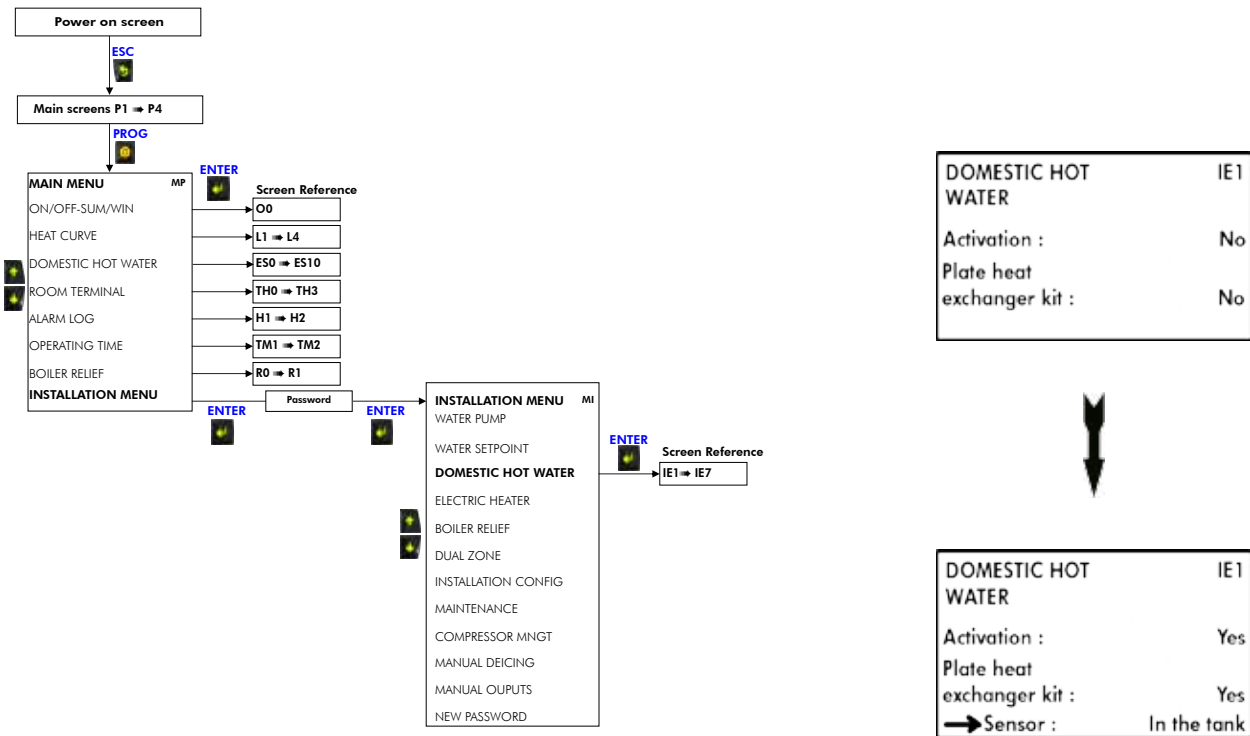
The PERMANENT COMFORT and ECONOMY modes place priority on thermodynamic heating. In the event of excessive demand for Domestic Hot Water Temperature that does not permit the compressor(s) to operate, the backup electric heating function is activated. In order to achieve energy savings, it is important to use the lowest possible set temperature points.

We recommend:



Eco set temperature < Comfort set temperature < 53°C

15.3. DOMESTIC HOT WATER HEATING FUNCTION ACTIVATION



16. IN-LINE ELECTRIC HEATER

16.1. ELECTRICAL CONNECTIONS

SEE APPENDIX

16.2. OPERATING MODE

Operating parameters for these modes can be set via the display on the **Aqu@Scop HT**.

16.2.1. BOOST MODE

The backup electric heating offers additional capacity when the demand for heating is higher than the capacity of the **Aqu@Scop HT**. The aim is to maintain occupant comfort, while favouring thermodynamic operation for optimised performance.

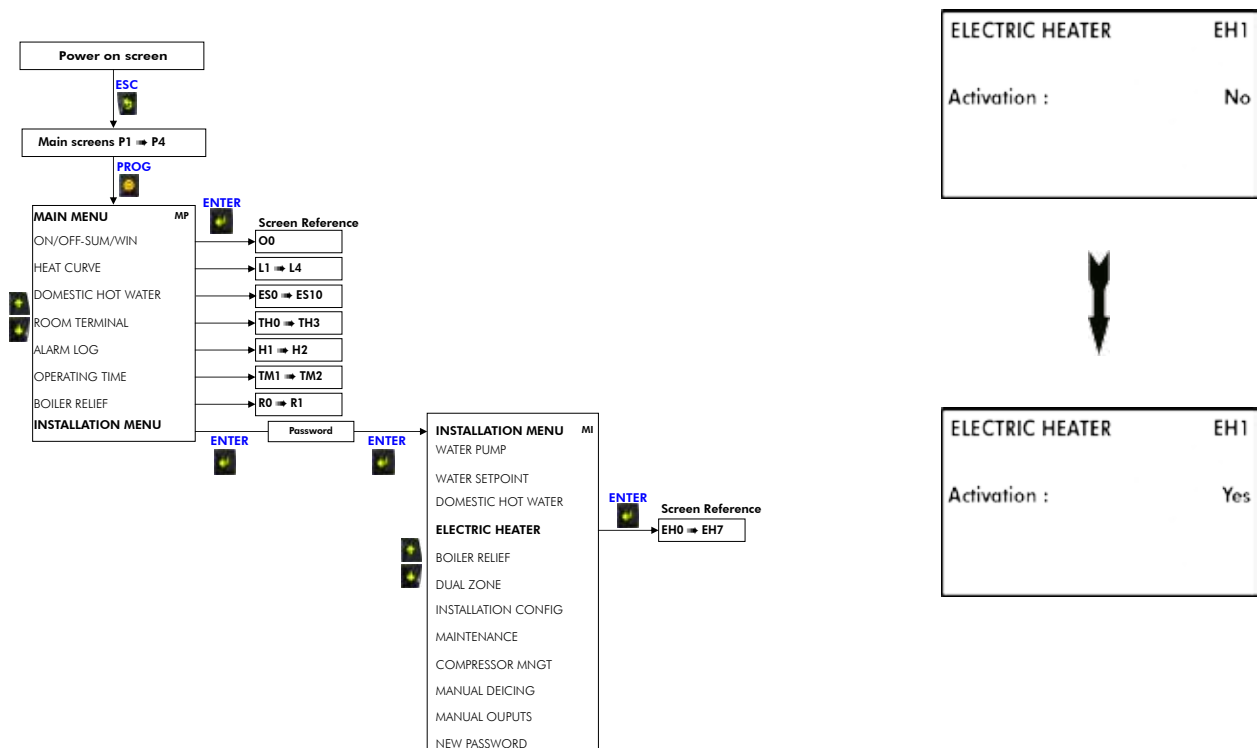
The resistances are only activated below a certain outdoor temperature (values can be set for Stage 1, AEH1 and Stage 1+2, AEH1+AEH2) and only if the **Aqu@Scop HT** regulation system detects a lack of capacity in compressor only mode (check on water temperature and ambient temperature).

Activation of the EMH Back-up switch on the heater switches the **Aqu@Scop HT** into Back-up mode.

16.2.2. BACK-UP MODE

As opposed to Booster mode, this mode operates only when the user activates the EMH Back-up switch (this supposes an alarm on the **Aqu@Scop HT**). Outdoor temperature conditions are overridden and priority is no longer given to the thermodynamic mode but to the heating resistances that are nevertheless still controlled by the **Aqu@Scop HT**.

16.3. ELECTRIC HEATER FUNCTION ACTIVATION



17. BOILER RELIEF

17.1. ELECTRICAL CONNECTIONS

The boiler relief function uses the digital outputs of the in-line electric heater function to control the hot water boiler ON/OFF switch (Boiler dry contact switch) as well as a 3-way valve output (230V BRV). A switch should be wired to the ICS input to ensure operation in Back-up mode.

17.2. OPERATING MODES

Operating parameters for these modes can be set via the display on the **Aqu@Scop HT**.

17.2.1. BOOST MODE

Hot water boiler operation is only authorised below a certain set outdoor temperature value and the appliance can also be placed in forced shutdown mode below a different outdoor temperature value. Just as the electric heater, the **Aqu@Scop HT** continuously checks the water temperature and the ambient temperature to optimise compressor operation and to only start the hot water boiler when absolutely necessary.

The **Aqu@Scop HT** can also be set to manage a heat curve on the hot water boiler higher than the temperature set for the appliance (65° C maximum).

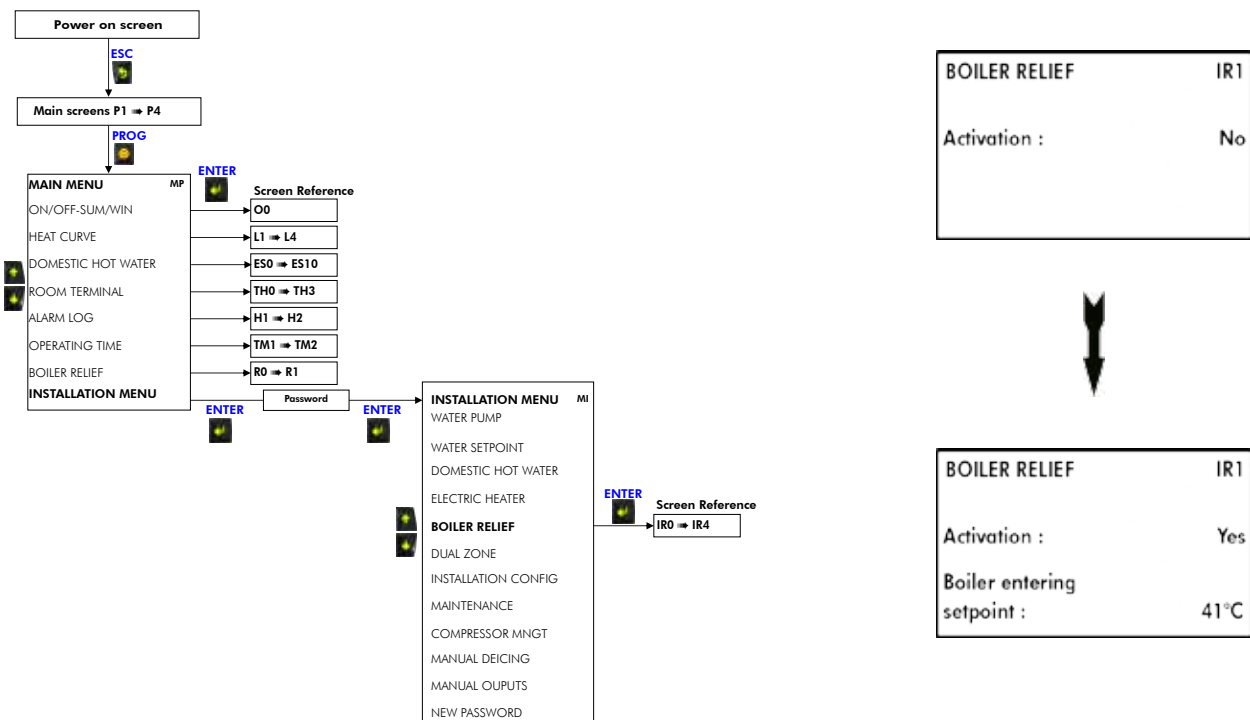
17.2.2. BACK-UP MODE

Activation of the EMH switch (to be wired by the installer) or the Back-up parameter, via the "Boiler Relief" tab on the main menu of the **Aqu@Scop HT** display, switches the system into Back-up mode and both outdoor temperature and ambient temperature conditions are overridden.



We strongly recommend the installation of the ambience terminal for effective operation of the Boiler Relief function. In the absence of an ambience terminal the Aqu@Scop HT will be unable to optimise hot water boiler operation and this will lead to unnecessary energy consumption.

17.3. BOILER RELIEF FUNCTION ACTIVATION

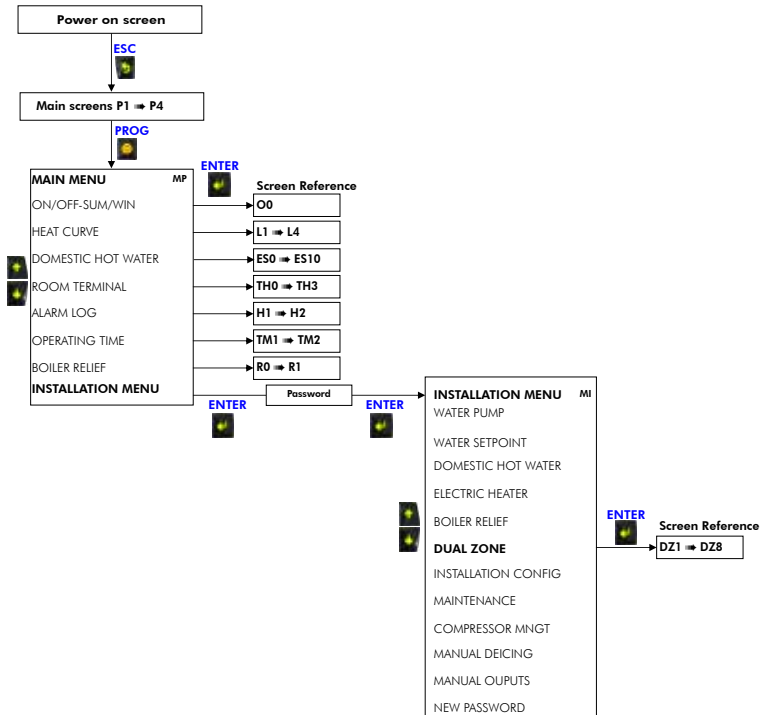


18. DUAL ZONE

18.1. ELECTRICAL CONNECTIONS

SEE APPENDIX

18.2. ACTIVATING THE DUAL ZONE FUNCTION




DUAL ZONE	DZ1
Activation :	No
Modulating valve opening time :	120s





DUAL ZONE	DZ1
Activation :	Yes
Modulating valve opening time :	120s



You MUST install one room terminal per zone.

ZONE CONFIG.	DZ3
ROOM TERMINAL	
Zone1 :	Yes
Zone2 :	Yes

You must specify the type of emitter for each zone. Zone 1 corresponds to the low temperature zone. Setting the **Aqu@Scop HT** controls the water output temperature using the **DZMV** modulating valve and the **DZWT** temperature sensor.

HEAT APPLICATION	DZ4
Zone1 Floor heating	Zone2 Radiators
	

18.3. AMBIENCE TERMINAL

The double zone function requires the use of one ambience terminal per zone. You must specify one address per ambience terminal.

- > Zone 1 : Address 1
- > Zone 2 : Address 2



CHANGING THE AMBIENCE TERMINAL ADDRESS FOR ZONE 2.

See the communicating ambience terminal's installation manual (IOM WATTS 01-N-2ALL).

19. COMMISSIONING

19.1. PRE-START CHECK LIST

Before commissioning the system, you must carry out a certain number of installation checks to ensure that the appliance will operate in the best possible conditions. The following list of checks is not exhaustive and only serves as a minimum reference guide.

19.1.1. VISUAL CHECK

1. Check free clearances around the unit, including the exchanger air intake and outlet, and access for maintenance work.
2. Comply with the free clearance dimensions around the domestic hot water tank.
3. Check unit assembly in accordance with specifications.
4. Check presence and tightness of all screws and bolts.
5. Check the position of the rubber anti-vibration pads or the vibration-absorbing supports.
6. Check that the unit is level and that condensates drain freely away from the unit.
7. Check that there is no possibility of blown air being recycled through the fans due to wind exposure.
8. In arduous climates (sub-zero temperature, snow, high humidity), check that the appliance is raised 10 cm off ground.
9. Check that the ambience terminal is located correctly (frequently occupied area, 1.5 m above ground level, etc.).
10. For refrigerant leaks in connections and components.

19.1.2. 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 power supply.
3. Supply voltages as specified on unit wiring diagram.
4. Check the tightness of wire to component connections.
5. the cables and wires are clear of or protected from pipework and sharp edges.
6. Check the electrical grounding of the appliance.

19.1.3. HYDRAULIC CHECK

1. Check that the external water circuit components (pumps, user equipment, filters, expansion tank and reservoir if supplied) have been correctly installed in accordance with the manufacturer's recommendations and that the water inlet and outlet connections are correct.
 2. Check the presence, direction and position of the **water filter** upstream of the appliance. Rinse the filter after the first 2 hours of operation.
 3. Check that the water quality complies with stated standards.
 4. Check that the hydraulic circuit is filled correctly and that the fluid flows freely without any signs of leaks or air bubbles.
 5. Adjust the water flow in order to comply with the specifications. (Refer to the § **WATER FLOW REGULATION**, page 21)
 6. Check the presence and position of the stop cocks to isolate the appliance for maintenance.
 7. Check the presence of the air bleed valve.
 8. Check protection against freezing (heat isolation, antifreeze percentage if required...).
 9. Check that the bleed valve in the appliance has been opened.
-

20. STARTING THE APPLIANCE


After checking all the electrical connections and making any rectifications as required, proceed with starting up the installation.


20.1. USER INTERFACE


The terminal is a 6-button, 8-line x 22-character LCD model, which can display text in various sizes and icons.




20.1.1. KEYPAD


ALARM  : When you press the Alarm key (the red bell is apparent if an alarm is active), the first active alarm is displayed on the screen and the screen buzzer is switched off (if active). Use the UP/DOWN keys to view all the active alarms. Press the Alarm key a second time to cancel all alarms that can be cancelled in this manner. Alarms that remain active are still displayed. If no alarm is active, pressing the key returns the system to the "NO ALARM ACTIVE" screen.

ESC  : Moves to previous level in the menu arborescence. Press this to change an analogue or integer variable, such as 34.5 for example (as opposed to a digital variable such as Yes/No), to cancel the current change and return to the previous menu. This function is very important if a parameter is changed by mistake.

PROG  : From any screen, this key returns to the main menu. Just as the ESCAPE key, this key cancels the current change.

UP/DOWN   : These keys have several functions:

In a menu, they enable you to scroll through the list of available selections. When the cursor is placed in the top left hand corner of the screen it is possible to scroll through the screens available in this arborescence. Finally, these keys enable you to change the value of a parameter when the cursor is placed on the parameter in question.

ENTER  : On those screens where it is possible to change one or several parameters, the first press on the key moves the cursor to the first parameter on the screen. A second press validates the current parameter and the cursor scrolls to the following parameter until it returns to the upper left hand corner.

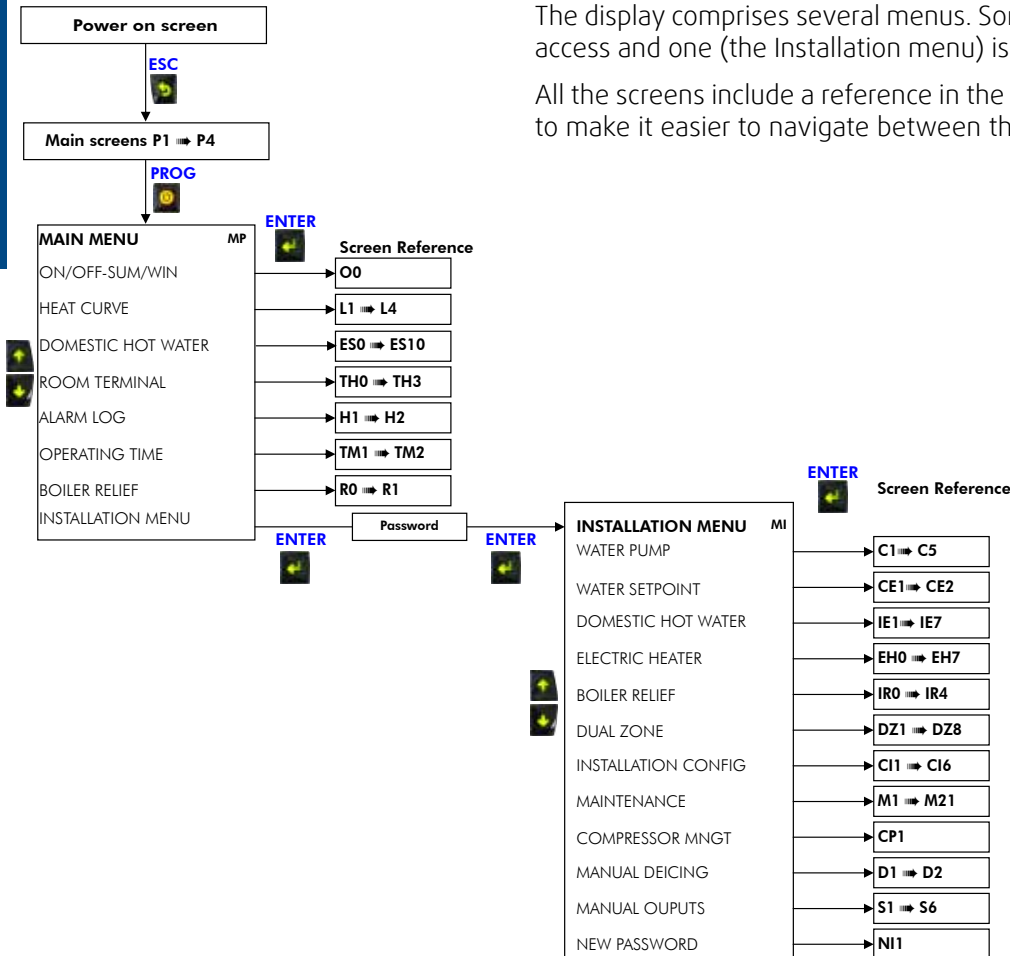
20.1.2. BACKLIGHTING

All the screen keys are backlit.

The ALARM key diode lights up when at least one alarm is active. The  key is lit when you are in the main menu or in one of its sub-menus. The    and  keys light up along with the display backlighting.

If no key is pressed during a 5 minute period, the display automatically reverts to the first main screen (P1) and all backlighting is switched off.

20.1.3. MENUS



The display comprises several menus. Some have unrestricted access and one (the Installation menu) is password protected. All the screens include a reference in the top right hand corner to make it easier to navigate between the different menus.

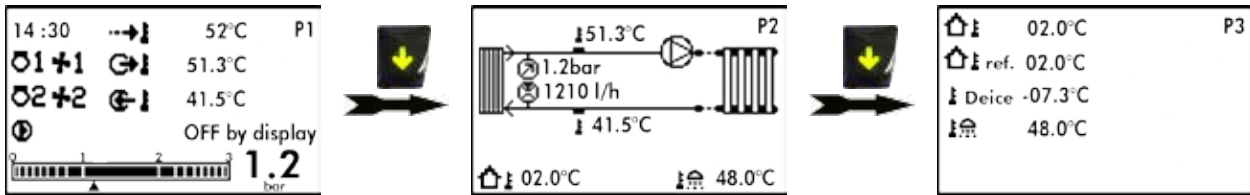
20.1.4. ICONS

P1		Outlet water set temperature, calculated from the heat curve parameters, the outdoor temperature, the ambience set temperature and the variance between the set and the ambience temperature.
		Compressor 1 (large) in operation - Flashing => Compressor in time delay
		Compressor 2 (small) in operation - Flashing => Compressor in time delay
		Fan 1 (upper) in operation
		Fan 2 (lower) in operation
		Outlet water temperature
		Inlet (return) water temperature
		Aqu@Scop HT in Summer mode
		Flashing: Countdown for de-icing Fixed on: De-icing in progress
	Circulation pump in operation	
P3		Instantaneous outdoor temperature
		Reference outdoor temperature used by the Aqu@Scop HT (upper fan special management)
		Evaporator inlet temperature (used for calculating the length of the de-icing time period).
		Domestic hot water temperature (when the option is installed)
		Aqu@Scop HT in domestic hot water production mode (flashing)
		Electric heater Stage 1 in operation (flashing)
		Electric heater Stage 2 in operation (flashing)
	Hot water boiler in operation (flashing)	

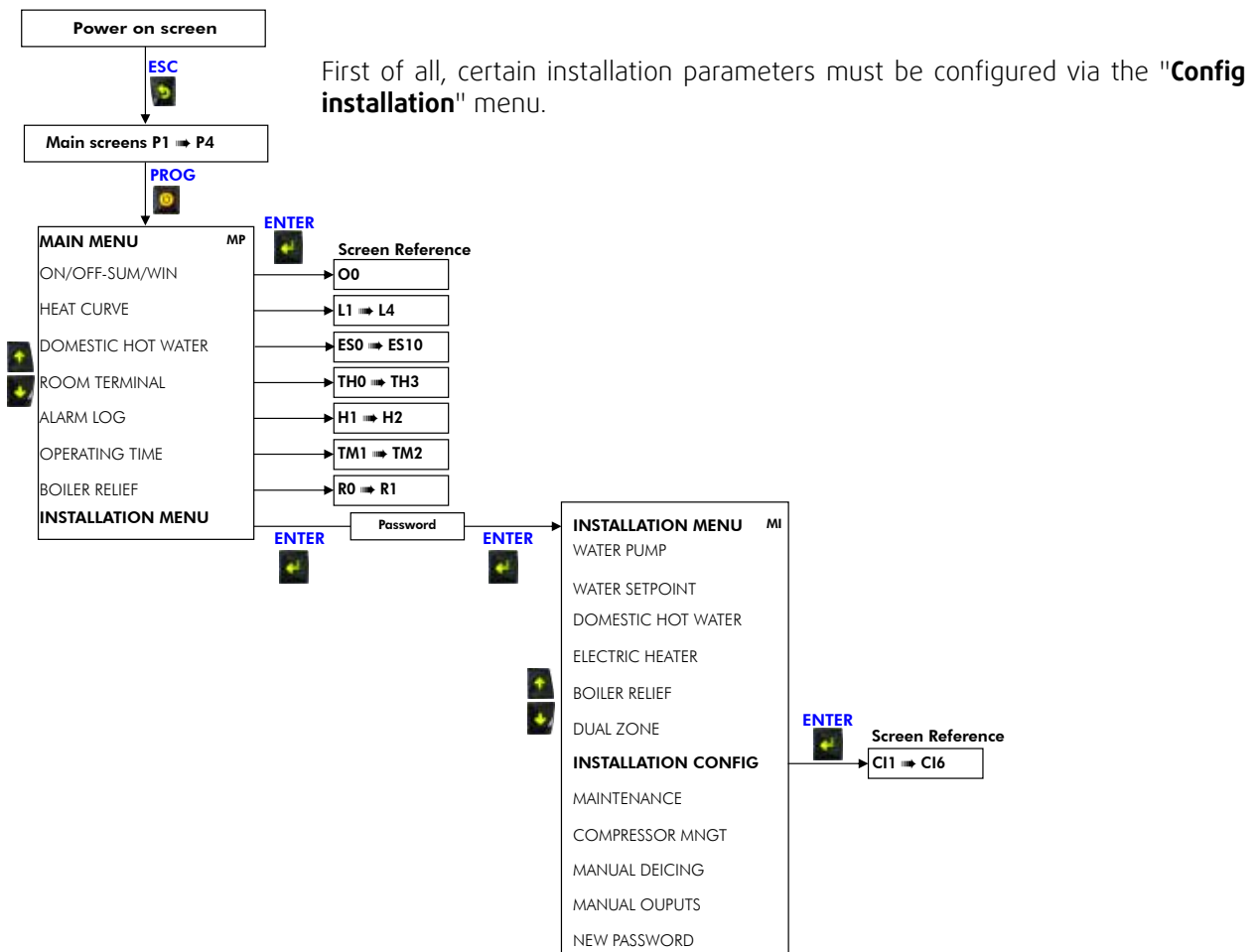
20.2. SIMPLIFIED START-UP PROCEDURE

20.2.1. MAIN SCREENS

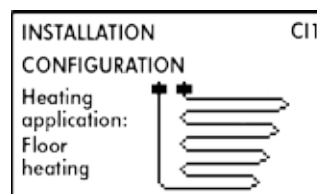
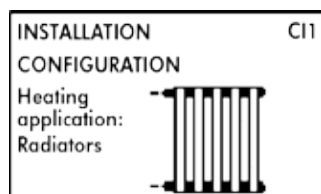
On the **Aqu@Scop HT** display, after having checked the coherence of the temperature probes on the main screens **P1**, **P2** and **P3**, as well as effective communication with the ambience terminal, it is advisable to set the heat curve parameters before starting the **Aqu@Scop HT**. The main screen **P1** is accessible by pressing the key  several times. The main screen **P1** also appears after 5 minutes of display inactivity.



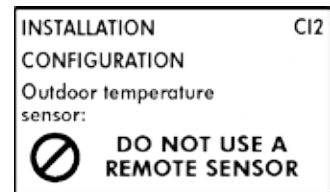
20.2.2. INSTALLATION CONFIGURATION



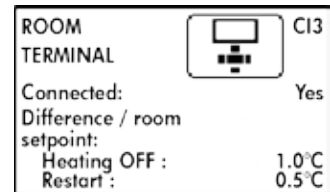
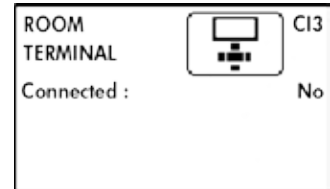
C11 Configuration of the type of heating emitter: radiators or under-floor heating. Changing this parameter automatically leads to changes in the water law parameters. It is very important to configure this parameter before making any alterations whatsoever to the water law parameters and before starting the **Aqu@Scop HT** for the first time.



- C12** Outdoor temperature probe. This probe should not be installed remotely.

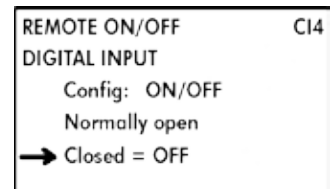


- C13** Ambience terminal Activation/deactivation (Default setting: activated). The temperature differential parameters in relation to the set ambient temperature control the starting and stopping of the **Aqu@Scop HT** in terms of ambient temperature (even though the water law is also managed by ambient temperature conditions). As a default setting, the PAC will stop at the set ambient temperature + 1°C and restart at the set ambient temperature + 0.5°C (this enables the installation to anticipate any drop in ambient temperature and avoid excessive temperature fluctuations).

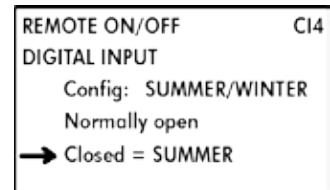


- C14** Configuration of the remote all or nothing ON/OFF input. Refer to the Indoor unit wiring diagram.

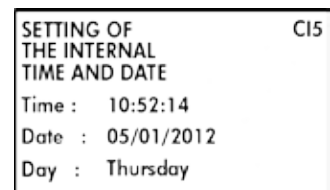
In ON/OFF configuration, this input enables the **Aqu@Scop HT** to be stopped completely. When the boiler substitution function is activated, switching to OFF automatically activates the boiler. It is possible to configure this input as Normally Open or Closed (Default setting: NO).



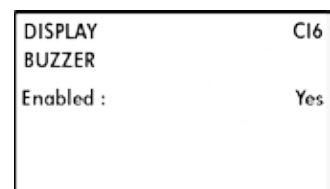
In SUMMER/WINTER configuration, this input stops the Heating function while maintaining the DHW function active (equivalent to the ambience terminal switching to OFF). NO (Normally Open) or NC (Normally Closed) configuration is also possible.










- C15** Refer to the § **TIME AND DATE VERIFICATION**, page 40.



- C16** Display buzzer authorisation in the event of an alarm (Default setting: authorised).



20.2.3. HEAT CURVE PARAMETERS

On the main menu (key ) , use the  /  arrows to highlight the "HEAT CURVE" menu. Validate this selection with the  key. This moves the display to the **L1** screen. Use the  and  /  keys to set the following parameters:

Screen L1

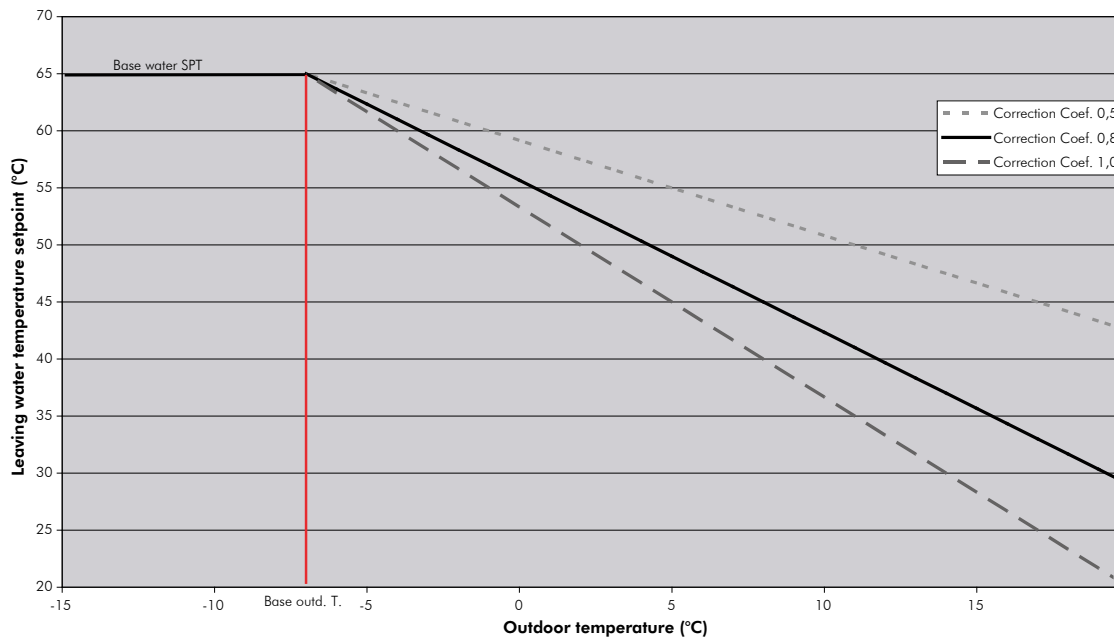
HEAT CURVE	L1
Altitude :	0.0 km
Base outdoor temperature :	-07°C
Correction Coef. :	0.8

Altitude: Installation site altitude, in km (e.g. 0.5km equals 500m. Default setting: 0).

Base outd. T.: Typical outdoor temperature for the installation region (Default setting: -7°C).

Corr. Coef.: Correction Coefficient for the base of the slope. This is a simple way of changing the water set temperature (Default setting: 0.8).

RADIATOR HEAT CURVE PARAMETERS



Screen L2

HEAT CURVE	L2
Heat loss at base outdoor temperature :	12.9kW
Water outlet at -7°C outdoor :	65°C

Losses at base Outdoor Temp : Estimated heat loss for the dwelling for an ambient temperature of 20°C and a base outdoor temperature (e.g. -7°C). This parameter is used to calculate the outdoor temperature that triggers the change from small compressor mode to two-stage compressor mode. This value is capped at the maximum capacity of the **Aqu@Scop HT** model in question for this same outdoor temperature (Default value = Maximum value).

Water outlet temperature at -07°C Outdoor temperature : Outlet water temperature required at the base outdoor temperature (-7°C for example) to have an ambient temperature of 20°C (Default setting: 65°C).

Screen L3

Outdoor temperature balance point	L3
DEFAULT	
C2 <small>(small)</small> / C1+C2	
06.0°C	

Information screen for the outdoor temperature calculated automatically by the **Aqu@Scop HT** . With the preceding default parameters, the value of 5.4° C means that below an outdoor temperature of 5.4° C the **Aqu@Scop HT** will start the large compressor or the two-stage compressor. Above 5.4° C the **Aqu@Scop HT** will start the small compressor.

Screen L4

Outdoor temperature balance point	L4
AUTOMATIC	
C2 <small>(small)</small> / C1+C2	
06.0°C	
Reset:	No

The value of the outdoor balance temperature displayed on **L4** is the one updated by the **Aqu@Scop HT** after running for some time, in the event that the **Aqu@Scop HT** detects a lack of capacity with the small compressor.

Zero reset: This is required in the event of changes to the heat curve parameters in order for the **Aqu@Scop HT** to register these changes. The parameter on screen **L3** is then recopied into screen **L4**.

20.2.4. VERIFICATION OF COMMUNICATION WITH THE COMMUNICATING AMBIENCE TERMINAL


Screen TH1

ROOM TERMINAL PARAMETERS	TH1
Current room setpoint :	20.0°C
Mode :	Comfort

By default, the ambience terminal is declared in the regulator. This means that an alarm will be visible on the screen of the **Aqu@Scop HT** a few seconds after the power supply is switched on, if the terminal is not connected. Proper terminal operation can be checked on screens **TH1** to **TH3**.

Screen TH0

CONNECTION CUT PAC HT / ROOM TERMINAL	TH0
Room setpoint for heat curve :	20.0°C

All the terminal parameters are accessible via the "**Ambience Terminal**" menu in the main menu (key ).

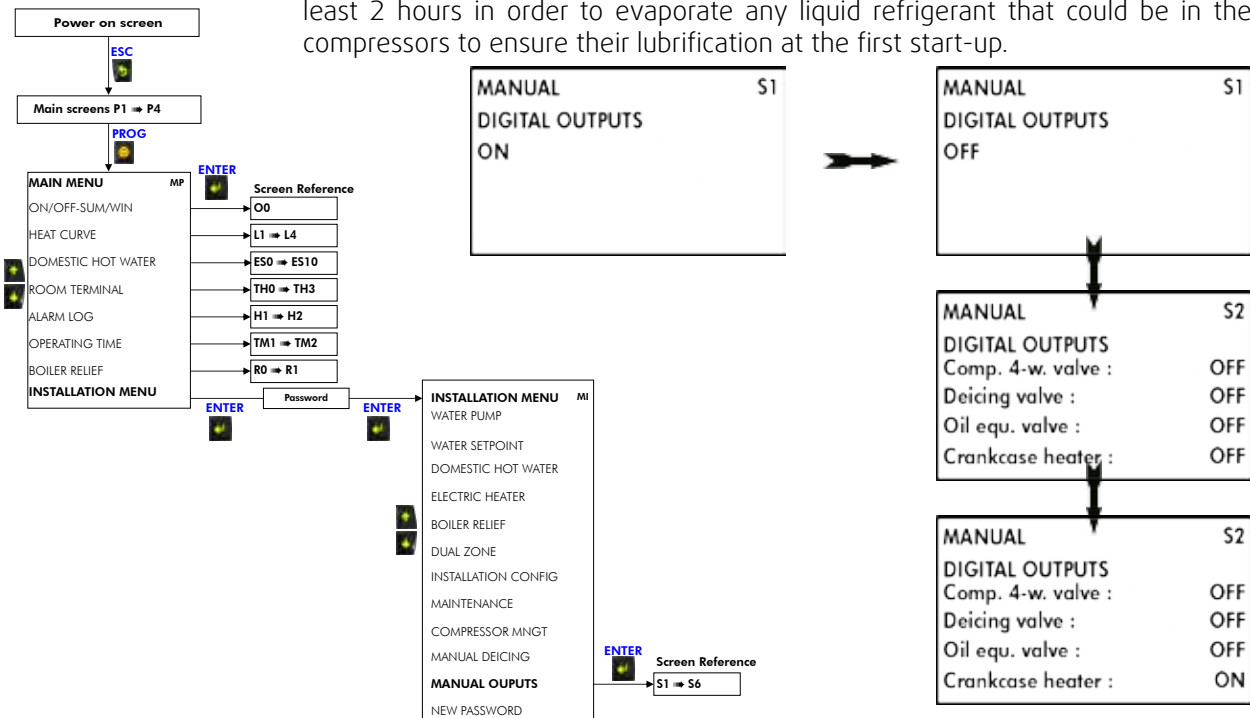
Screens: TH0 to TH3.

The screen **TH0** appears when the terminal is deactivated (installation menu) or disconnected. This screen provides access to a set temperature to facilitate the inputting of water law offset values.

20.2.5. COMPRESSOR SUMP HEATER FUNCTION ACTIVATION

After the first power ON (compressors OFF), **and for any outdoor air temperature**, manually switch ON the compressor sump heaters.

Before starting the compressors, the sump heaters must be powered On for at least 2 hours in order to evaporate any liquid refrigerant that could be in the compressors to ensure their lubrication at the first start-up.



20.2.6. TIME AND DATE VERIFICATION

The time and the date are used to manage the:

- Alarm log.
- The DHW Legionnaires Disease protection function.

When a communicating ambience terminal is connected to the **Aqu@Scop HT**, the time is automatically updated in the regulator. The date is managed solely by the regulator. At commissioning, check:

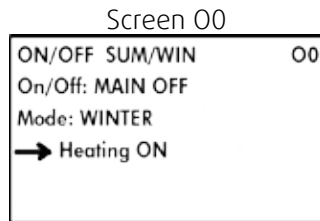
- The date, screen **P4**. Update as required in the "**Config installation**" CI5 menu.
- The time (screen **P4**) if no ambient terminal is connected. Update as required in the "**Config installation**" CI5 menu.

TIME / DATE	P4
Time :	10:52:14
Date :	05/01/2012
	Thursday

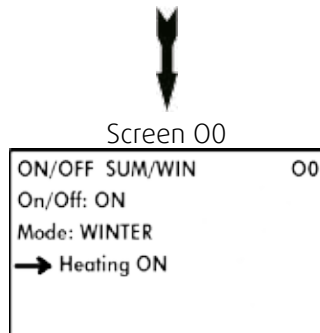
20.2.7. AQU@SCOP HT ON/OFF SETTINGS

In order to start, the **Aqu@Scop HT** must always be **ON** at the level of the appliance's display. In addition, the ambience terminal must be in demand mode (when it is connected). To force the terminal to enter demand mode, change it to Comfort mode ☀ with an ambience temperature set at 30° C.

The appliance **OFF** function will always have priority and therefore you will never be able to start the **Aqu@Scop HT** in this mode.



From the main menu, use the / arrows to highlight the "**ON/OFF-SUMMER/WINTER**" menu. Validate this selection by pressing the key. The display moves to the **00** screen.



Press the key twice to move the cursor to the **GENERAL OFF** parameter.

Use the / arrows to change this parameter to **ON**.

Press to validate and then on the key .

If the ambience terminal is in demand mode, and if no alarm is active and the water temperature condition permits (inlet water at least 7° C below set temperature), the **Aqu@Scop HT** will start operating.

Normal **Aqu@Scop HT** operation is guaranteed with an appliance inlet (system return) water temperature above 20° C.

20.3. OPERATING CHECK LIST

20.3.1. GENERAL

Check for any unusual noises or vibration in the running components, particularly the fan drive system.

20.3.2. PHASE ROTATION PROTECTION

If the phase of the power supply are not correct, the phase rotation protection device will prevent the machine from starting.

20.3.3. ELECTRICAL

20.3.3.1. OPERATING VOLTAGE:

Recheck voltage at unit supply terminals.

20.3.3.2. CONTROL

1. Verify all sensor inputs, using the controller display.

20.3.4. FAN & DRIVE

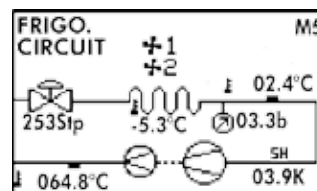
1. Check that the fans rotate freely, in a balanced manner without any rubbing.

20.3.5. COMPRESSOR AND REFRIGERATION SYSTEM

1. Checking operation: Start the **Aqu@Scop HT**. Check for any abnormal noises or vibrations.
2. After a few minutes operation, the evaporator outlet superheating should be:

- ✓ 3K (± 1 K) with C2 compressor operating on its own,
- ✓ 5K (± 1 K) with C1 + C2 compressors or C1 operating on its own.
(*)

* These checks can be performed at the time of commissioning with the help of qualified technical personnel.



20.3.6. FINAL CHECK

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

21. FINAL TASKS

Place the plugs back on the valves and check that they are properly tightened.

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

Operate the **Aqu@Scop HT** in the presence of the user and explain all functions.

22. 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.

23. 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.

24. MAINTENANCE

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



Some alarms can only be cancelled by switching the **Aqu@Scop HT** to **OFF**.

Generally, an alarm means that there is an anomaly present on the appliance. We **strongly** recommend that you refrain from repeatedly resetting an alarm without rectifying its cause in order to avoid the risk of **causing irrevocable damage** to one or several components.

Depending on actual operational constraints and regulatory changes, the installer might recommend increased maintenance operations and more frequent inspections.

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

24.1. SERVICING CHECKLIST

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

24.1.1. OUTDOOR UNIT

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

24.1.2. CONDENSATE RECOVERY TRAY

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

24.1.3. REFRIGERATION CIRCUIT

1. Check the absence of gas leaks.



A control of gas leaks absence should be performed on this device **at least once a year, by a qualified technician**. Referred to national requirements for the frequency of such controls.

2. Check that the copper tubes or the capillary tubes do not rub against any metal or vibrate.
3. Check that the compressors do not generate any abnormal noises or vibrations.
4. Check the compressor discharge temperature.
5. Check that the crankcase heater is energised during the OFF cycle. (Switch on manually if necessary)

24.1.4. FIN EXCHANGER

1. Clean the heat exchanger using a special product for aluminium-copper heat exchangers, and rinse with water. Do not use hot water or steam, as this could cause the pressure of the refrigerant to rise.
 2. Check for signs of wear on the fan bearings.
 3. Verify the condition of the fans and the motors.
-

24.1.5. ELECTRICAL EQUIPMENT

Les interventions dans les boîtiers électriques sont réalisées par des techniciens habilités.

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

24.1.6. PROTECTION DEVICES

1. Check the proper operation of the high pressure protection devices.

24.1.7. HYDRAULIC CIRCUIT

1. Check that the hydraulic circuit is filled correctly and that the fluid circulates freely without any sign of leaks or air bubbles.
2. Inspect filter cleanliness.
3. Check water pressure and flow.



CAUTION

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

25. ALARM LIST AVAILABLE ON THE AQU@SCOP HT DISPLAY

Software version: 6.0

Some terms may differ depending on the software version.

Ref.	Alarm description	AQU@SCOP HT action	Alarm cancellation	Time delay	Possible cause(s)	Recommended action(s)
AL01	Entering water temperature sensor disconnected or damaged	Complete shutdown	Manual	10 s		
AL02	Leaving water temperature sensor disconnected or damaged	Complete shutdown	Manual	10 s		
AL03	Outdoor temperature sensor disconnected or damaged	Complete shutdown	Manual	10 s	Disconnected or faulty sensor	Check the probe wiring, replace the probe if faulty.
AL04	Domestic hot water temperature sensor disconnected or damaged	DHW function stopped.	Manual	10 s		
AL05	Deicing temperature sensor (coil bend) disconnected or damaged	Thermodynamic function stopped completely.	Manual	10 s		
AL06	Lack of water flow, freezing risk	Complete stoppage and forced water circulation pump operation during stoppage	Manual	30s after start of circulation pump	Seized water pump	Check water pump operation
					Clogged water filter.	Clean the filter.
					Water flow too low or air in the system	Check the PAC's temperature difference in operation. Increase the flow (change the water pump speed)
AL07	Double zone temperature sensor disconnected or damaged	Radiator zone stoppage, under-floor heating water law, modulating valve 100% open.	Manual	10 s	Probe disconnected or faulty.	Check the probe wiring, replace the probe if faulty.
AL08	Outdoor fans fault	Thermodynamic function stopped completely.	Manual	None	Internal temperature protection cut-out in one of the fans	Reset the alarm after allowing the motors to cool. Check which fan is overheating. Replace the defective fan.
AL09	Compressor 1 / big overload	Automatic changeover to C2 compressor WARNING: De-icing impossible.	Manual (Aqu@Scop HT OFF via keypad)	None	Thermo-magnetic circuit breaker tripped (three phase)	Reset the circuit breaker. Check that the setting corresponds to specifications
AL10	Compressor 2 / small overload	Automatic changeover to C1 compressor	Manual (Aqu@Scop HT OFF via keypad)	None	Thermo-magnetic circuit breaker tripped (three phase)	Reset the circuit breaker. Check that the setting corresponds to specifications

Ref.	Alarm description	AQU@SCOP HT action	Alarm cancellation	Time delay	Possible cause(s)	Recommended action(s)
AL11	High pressure lockout	Complete thermodynamic function stoppage (no manual reset).	Manual (Aqu@SCop HT OFF via keypad) after at least 2 minutes stoppage	None	Refer to the fault diagnosis guide in the Installation and Maintenance Manual Water flow too low or air in the system	Refer to the fault diagnosis guide in the Installation and Maintenance Manual Re-establish nominal water flow or bleed the system
AL12	Low pressure lockout	Complete thermodynamic function stoppage (no manual reset).	Manual (Aqu@SCop HT OFF via keypad) after at least 2 minutes stoppage	60 s after compressor start-up	Refer to the fault diagnosis guide in the Installation and Maintenance Manual Coil blocked Incomplete de-icing (lack of refrigerant charge)	Refer to the fault diagnosis guide in the Installation and Maintenance Manual Clean the finned coil Check the amount of refrigerant charge
AL13	Internal clock of the controller faulty.	Information	Manual	None	Defective internal regulator clock.	Confirm the problem by switching the mains power on several times. Replace the Indoor unit regulator.
AL14	Both compressor alarm, unit stopped	Complete thermodynamic function stoppage	Manual (Aqu@SCop HT OFF via keypad)	None	Both compressors in Alarm mode	Find the cause of the alarm for each compressor
AL16	Comm. loss PAC HT / room terminal, heating forced.	Switchover to forced Heating mode by changing the adjustable ambient temperature (Default setting: 20° C)	Manual	Variable depending on the cause of the problem (clean trip or trip due to electrical interference)	Ambiance terminal is not connected One of the communication cables is disconnected Too much interference on the communication bus	Deactivate it via the Aqu@SCop HT keypad Check the connections on the Aqu@SCop HT and the terminal as well as the polarities (A and B) Use shielded cable as recommended
AL17	Phase inversion or one phase missing	Complete shutdown	Manual	None	Power supply fault detection by the phase controller (three phase)	Two phases have been inverted or one phase is missing. Refer to the Installation and Maintenance Manual
AL18	Deicing required, compressor 1 / big not available	Complete shutdown	Auto. if outdoor conditions permit natural de-icing	None	There is a fault on the large C1 compressor at a time when it is required by the Aqu@SCop HT for de-icing	Rectify the fault on the C1 compressor

Ref.	Alarm description	AQU@SCOP HT action	Alarm cancellation	Time delay	Possible cause(s)	Recommended action(s)
AL20	Deicing by evaporating pressure < 0.6bar	De-icing	Automatic after 30 min. compressor operation. D	Variable	Outdoor temperature or De-icing probe defective but undetected. Evaporation pressure sensor defective but undetected. Outdoor temperature too low for Aqu@Scop HT operation.	Check the values recorded by the Outdoor and De-icing temperature probes. Replace the probe if necessary. Check the evaporation pressure value in operation. Replace the sensor if necessary.
AL21	2 deicings by evaporating pressure < 0.6bar in 30 minutes	Thermodynamic function stopped completely.			Refrigerant leak. Ineffective de-icing, exchanger blocked. Outdoor temperature too low for Aqu@Scop HT operation.	Checked for leaks. Check the refrigerant charge. Clean the fin exchanger.
AL22	Deicing ended abnormally by maximum duration	De-icing stopped	Auto. Alarm displayed for 10 minutes for information purposes	None	De-icing has lasted over 10 minutes. This is abnormal as de-icing usually takes between 3 and 4 minutes	Monitor the appliance to see if this fault is a one-off occurrence, if not, check all possible causes of poor de-icing (lack of refrigerant charge)
AL23	Deicing ended abnormally by leaving water temp. < 10°C	De-icing stopped	Auto. Alarm displayed for 10 minutes for information purposes	None	Outlet water temperature during de-icing has fallen below 10° C	Check that there is sufficient water volume in the system, as recommended in the Installation and Maintenance Manual
AL25	Discharge temperature too high	Thermodynamic function stopped completely.	Manual	None	Cut out by the N°2 compressor outlet temperature probe	Monitor to determine whether this fault is a one-off incident. If not, check the overheating value on the display (may be too high in the event of outflow being cut off).
AL27	Deicing valve failure	Thermodynamic function stopped completely.	Manual (Aqu@Scop HT OFF via keypad)	90 s	De-icing valve fault detected automatically by the control system. Valve disconnected, inverted or blocked	Check valve wiring. Activate the Manual controller outputs and check that the valve operates. Replace the valve if the slide is blocked or the coil is burnt out
AL28	Compressor 1 alarm by controller, 2 successive AL34	Automatic changeover to C2 compressor <u>WARNING: De-icing impossible.</u>	Manual (Aqu@Scop HT OFF via keypad)	90 s	Fault detected automatically by the system management (e.g. when the Temp. difference is too low, indicating that the compressor has not started)	Refer to fault diagnosis guide in the Installation and Maintenance Manual Probable cause: Faulty single phase soft starter, compressor protection fuse melted, excessively low supply voltage or phase missing on the compressor.
AL29	Compressor 2 alarm by controller, 2 successive AL35	Automatic changeover to C1 compressor	Manual (Aqu@Scop HT OFF via keypad)	90 s		


Ref.	Alarm description	AQU@SCOP HT action	Alarm cancellation	Time delay	Possible cause(s)	Recommended action(s)
AL30	Deicing problem - Compressor 1 or compressor valve	Automatic changeover to C2 compressor	Manual (Aqu@SCop HT OFF via keypad)	90 s	Zero temperature difference during de-icing due to C1 compressor not starting or non activation of the compressor changeover valve. Impossible to determine the cause of the blockage in the valve if the slide is blocked or the coil is burnt out	Check that C1 is operating correctly. Check the compressor changeover valve wiring. Activate the Manual controller outputs and check that the valve operates. Replace the valve if the slide is blocked or the coil is burnt out
AL31	Compressor reversing valve failure	Automatic changeover to C2 compressor	Manual (Aqu@SCop HT OFF via keypad)	10 s	Alarm generated by the intermediate pressostat. Compressor changeover valve disconnected, blocked or coil burnt out	Check the compressor changeover valve wiring. Activate the Manual controller outputs and check that the valve operates. Replace the valve if the slide is blocked or the coil is burnt out
AL32	Entering/leaving water sensors reversed	Complete shutdown	Manual (Aqu@SCop HT OFF via keypad)	90 s	Auto detection by checking whether the water temperature probes are inverted.	Invert the probes at the level of the regulator. Check the probe values when the compressor(s) is/are running.
AL33	$\Delta T > 20^{\circ}\text{C}$, low water flow	Complete thermodynamic function stoppage	Manual (Aqu@SCop HT OFF via keypad)	90 s	Insufficient water flow in the circuit, flow too low for proper Aqu@SCop HT operation	Check that the water flow in the system is always adequate (presence of thermostatic radiator valves) Clean the inlet water filter on the Aqu@SCop HT
AL34	Compressor 1 alarm by controller (water $\Delta T < 1^{\circ}\text{C}$)	Complete shutdown during 7 minutes. 2 cut-outs AL28	Automatic	90 s	Fault detected automatically by the system management (e.g. when the temp. difference is too low, indicating that the compressor has not started)	Refer to fault diagnosis guide in the Installation and Maintenance Manual Probable cause: Faulty single phase soft starter, compressor protection fuse melted, excessively low supply voltage or phase missing on the compressor
AL35	Compressor 2 alarm by controller (water $\Delta T < 1^{\circ}\text{C}$)	Complete shutdown during 7 minutes. 2 cut-outs AL29	Automatic	90 s		
INF36	--Information-- Back-up heater Boiler/Electric heater enabled	Information	Stop backup mode	None	Activation of the EMH digital input of the controller or backup mode through the display for boiler relief	
AL39	Water pressure < 0.5bar in the heating circuit	Information	Pressure > 1 bar for 5s. 10 s		Insufficient water pressure in the Heating circuit.	Add water to the heating circuit. Check proper expansion tank operation. Check for leaks on the Heating network.

Ref.	Alarm description	AQU@SCOP HT action	Alarm cancellation	Time delay	Possible cause(s)	Recommended action(s)
AL40	No communication with the outdoor unit	Complete thermodynamic function stoppage	Manual and Com OK for 22s.	22s	<p>Incorrect wiring.</p> <p>Communication bus cable cut.</p> <p>Unshielded cable.</p> <p>Outdoor unit not auto-detected.</p>	<p>Check bus connections at both ends.</p> <p>Check the condition of the bus cable</p> <p>Install shielded cable.</p> <p>Check the wiring of the Outdoor unit probes.</p>
AL41	1 Aqu@ScOP HT unit not recognized on the communication bus	Information	Automatic	None	Probes B1 to B4, B8 and B9 partially or totally disconnected on the unit in question.	Check the probe values on the display and check the probe connections.
AL42	Indoor/outdoor units software versions incompatible	Complete thermodynamic function stoppage	Power supply cut.	None	Different versions for Indoor and Outdoor units.	Update the programme for both units.
AL43	No Aqu@ScOP HT model detected Split or Monobloc	Complete stoppage.	Power supply cut.	None	<p>Probes B1 to B4, B8 and B9 partially or totally disconnected on the unit in question.</p> <p>Probes B1 to B4, B8 and B9 partially or totally disconnected on the unit in question => Incorrect model detection</p>	<p>Check the probe values on the display and check the probe connections.</p> <p>Check the probe values on the display and check the probe connections.</p>
AL44	Aqu@ScOP HT model modified for the indoor unit	Information		None	<p>µPC replaced by that of another Aqu@ScOP HT (Split Indoor/Outdoor / Monobloc)</p> <p>Programme taken from another Aqu@ScOP HT (Split Indoor/Outdoor / Monobloc)</p>	<p>Confirm once the situation is understood.</p>
AL45	Aqu@ScOP HT model modified for the outdoor unit	Information		None	<p>Probes B1 to B4, B8 and B9 partially or totally disconnected on the unit in question => Incorrect model detection</p> <p>µPC replaced by that of another Aqu@ScOP HT (Split Indoor/Outdoor / Monobloc)</p> <p>Programme taken from another Aqu@ScOP HT (Split Indoor/Outdoor / Monobloc).</p>	<p>Check the probe values on the display and check the probe connections.</p> <p>Confirm once the situation is understood.</p>

Ref.	Alarm description	AQU@SCOP HT action	Alarm cancellation	Time delay	Possible cause(s)	Recommended action(s)
AL46	Size modified for the outdoor unit	Information		None	Modification of the wiring of the analogue inputs B5 and B12 of the Outdoor unit configuration. Programme or µPC replaced by another Outdoor unit.	Check the status and the wiring of B5 and B12 Confirm once the situation is understood.
AL47	Different indoor and outdoor unit sizes	Information		None	Different Indoor and Outdoor unit sizes.	Check the sizes and their correspondence on the makers plates. Check the status and the wiring of inputs B5 and B12 on the Outdoor unit.
AL48	Water flow meter disconnected or damaged	Complete stoppage.	Manual	10 s	Flow meter disconnected or faulty. Faulty 0-5V supply.	Check the wiring of the flow meter, replace the flow meter if it is faulty. Measure the 0-5V voltage.
AL49	Water pressure sensor disconnected or damaged	Information	Manual	10 ss	Water pressure sensor disconnected or damaged. Faulty 0-5V supply.	Check the sensor wiring, replace the sensor if it is faulty. Measure the 0-5V voltage.
AL50	Compressor discharge sensor disconnected or damaged	Complete thermodynamic function stoppage	Manual	10 s	Probe disconnected or damaged.	Check the probe wiring, replace the probe if it is faulty.
AL51	Evaporating temperature sensor disconnected or damaged	Complete thermodynamic function stoppage	Manual	10 s	Probe disconnected or damaged.	Check the probe wiring, replace the probe if it is faulty.
AL52	Evaporating pressure sensor disconnected or damaged	Complete thermodynamic function stoppage	Manual	10 s	Transducer disconnected or damaged.	Check the transducer wiring, replace the transducer if it is faulty.
INF56	Software updated or new controller in the indoor unit	Information	Manual	None	Programme update or µPC replaced in the Indoor unit.	Confirm once the situation is understood.
INF57	Software updated or new controller in the outdoor unit	Information	Manual	None	Programme update or µPC replaced in the Outdoor unit.	Confirm once the situation is understood.
INF58	No indoor unit size in controller memory	Information	Manual	None	Programme update or µPC replaced in the Indoor unit.	Check the size of the Indoor unit on the makers plate. Key in the details and then confirm

Ref.	Alarm description	AQU@SCOP HT action	Alarm cancellation	Time delay	Possible cause(s)	Recommended action(s)
AL59	Swimming pool sensor disconnected or damaged.	Swimming pool function stopped.	Manual	10 s	Probe disconnected or damaged.	Check the probe wiring, replace the probe if it is faulty.
AL76	PAC HT stopped by outdoor temperature too high	Complete thermodynamic function stoppage	Automatic	None	Outdoor temperature too high (>40°C) for Heating or DHW operation.	Wait until the outdoor temperature drops (restart value visible on the alarm screen).

General comments:

- If you have a doubt about a **Aqu@Scop HT** component, use the Manual activation function for the outputs (all the all or nothing outputs excluding the compressors) via the "INSTALLATION" menu on the appliances display. Use a voltmeter to check that the regulator output is activated (230V) and that the component is question is also activated.
- The **Aqu@Scop HT** retains a very comprehensive log of alarms, i.e. the 150 last alarms, as well as temperature probe values (water inlet and outlet, outdoor and outdoor battery) when the alarm appears. You can access this log from the main menu (sub-menu "Alarm log"). Press the ENTER () key to switch back and forth between the log screen and the probes screen.

N°007	AL06	HT
11/01/2012	20h18:34	Last alarm
Lack of water flow		
Stat : Unit ON		
↕ : Alarm scrolling		
← : Sensor values		
		
N°007	AL06	HZ
Entering temp: 34.1°C		
Leaving temp: 39.2°C		
Outdoor temp: 08.6°C		
Deicing temp: 01.4°C		
Comp 1: OFF		
Comp 2: ON		
← : Return		
↕ : Scroll		



Generally, an alarm means that there is an anomaly with the appliance. We strongly **advise against** repeatedly resetting an alarm at the risk of causing **irreparable damage** to one or several components.

26. FAULTY DIAGNOSIS GUIDE

Simple diagnosis advice. In the event of a breakdown, you should contact your local after sales department for confirmation and assistance.

Compressor does not start		
Problem symptoms	Probable cause	Recommended action
Power is present at the compressor terminal but the motor does not rotate	Motor burnt out	Replace the compressor
Motor contactor inoperable	Coil burnt out or contacts broken	Repair or replace the contactor
No current upstream of the motor contactor	Circuit breaker tripped	Check the fuses / thermo-magnetic circuit breakers and electrical connections
Current upstream of the fuse, but not on the contactor side	Fuse blown or thermo-magnetic circuit breaker tripped	Replace the fuse. Reset the thermo-magnetic circuit breaker Check current values
Low voltage measured on voltmeter	Voltage too low	Contact your electricity supplier
No power supply to contactor coil	Regulation open circuit	Use the appliance display to check that the system is actually calling for compressor operation
Compressor operates but current draw is abnormally high	Compressor damaged	Replace the compressor
"Growling" compressor motor	Excessive output pressure Abnormally low voltage on start-up in single phase	Check the supply voltage. Refer to the single phase soft start faults chart Check the controller control relays and their wiring (refer to wiring diagrams)

Compressor stops.		
Problem symptoms	Probable cause	Recommended action
HP pressostat triggered	Excessively high outlet pressure	Refer to instructions provided for "high outlet pressure"
Discharge thermostat triggered	Lack of refrigerant fluid	Repair the leak. Add refrigerant fluid or completely replace the charge
	Abnormal Compressor superheat	Set the superheat on the expansion valve
	Defective de-icing	Check proper de-icing operation
Inlet pressure too low	Dryer filter blocked	Replace dryer filter
	Lack of refrigerant fluid	Repair the leak. Add refrigerant fluid or completely replace the charge
	Faulty expansion valve	Replace the expansion valve
Dryer filter iced up	Abnormal icing up of finned exchanger	Check proper operation of de-icing function
	Blocked dryer filter	Replace the dryer filter

Compressor lubrication problem		
Problem symptoms	Probable cause	Recommended action
Noisy compressor	Fault in oil equalisation system	Check operation of the oil equalisation valve. Contact your After Sales Service

Excessively high discharge pressure		
Problem symptoms	Probable cause	Recommended action
Major difference between condensing and water outlet temperatures	Presence of incondensable matter in the system or excessive refrigerant fluid charge Presence of air in water circuit	Bleed the incondensable matter and drain off the excess refrigerant fluid Bleed the air from the circuit
High output pressure and very high water ΔT	Insufficient water flow	Flow meter control Ensure that there is an adequate water flow through the entire system

Excessively high inlet pressure		
Problem symptoms	Probable cause	Recommended action
Presence of liquid in the intake line	Expansion valve open too far	Check the overheating value on the display. Check the position of the pressure sensor and the evaporation temperature probe. Check the values present on the display.
Refrigerant fluid flow back towards the compressor, irrespective of the expansion valve setting	Expansion valve blocked in open position	Inspect the electronic regulator wiring on the Outdoor unit regulator. Replace the regulator if it does not react when mains power is switched on to the unit.

Excessively low inlet pressure		
Problems - symptoms	Probable cause	Recommended action
Excessive pressure loss across the dryer filter	Clogged dryer filter	Replace the dryer filter
Refrigerant does not pass through the electronic pressure relief valve, irrespective of the regulator settings.	The electronic pressure relief valve is faulty.	Replace the electronic pressure relief valve.
	The electronic pressure relief valve is disconnected from the Outdoor unit's regulator	Reconnect the electronic pressure relief valve wiring.
Loss of power	Expansion valve blocked	Replace the expansion valve
	Lack of refrigerant fluid	Repair the leak. Add refrigerant fluid or completely replace the charge
	Evaporator blocked	Clean the finned evaporator
	Insufficient air flow	Check proper operation of the fan/motor units
	Defective de-icing	Check proper operation of de-icing function

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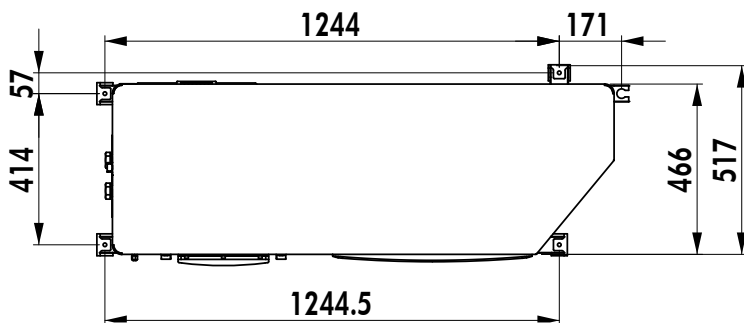
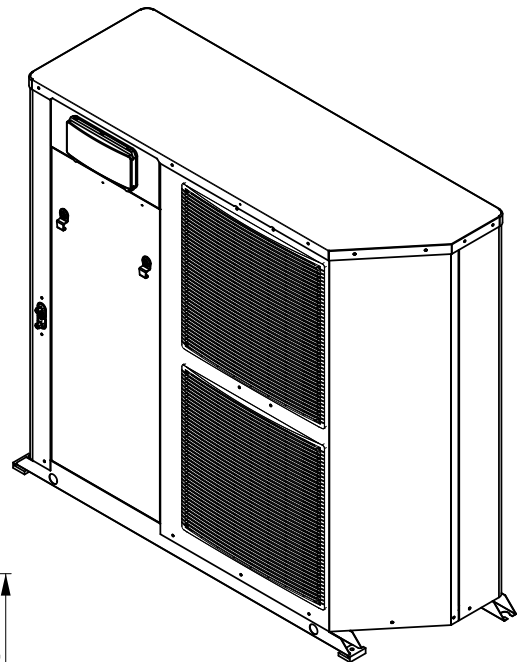
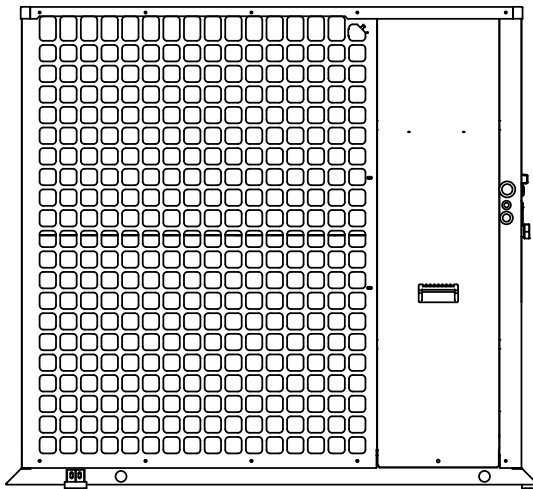
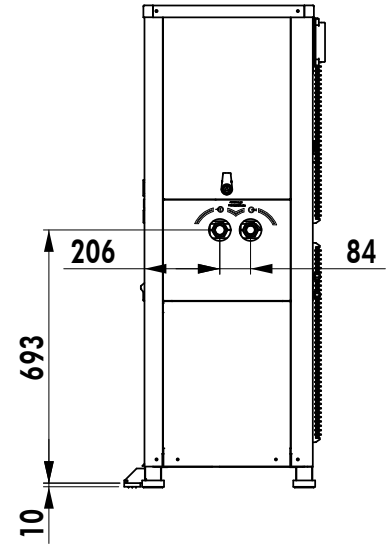
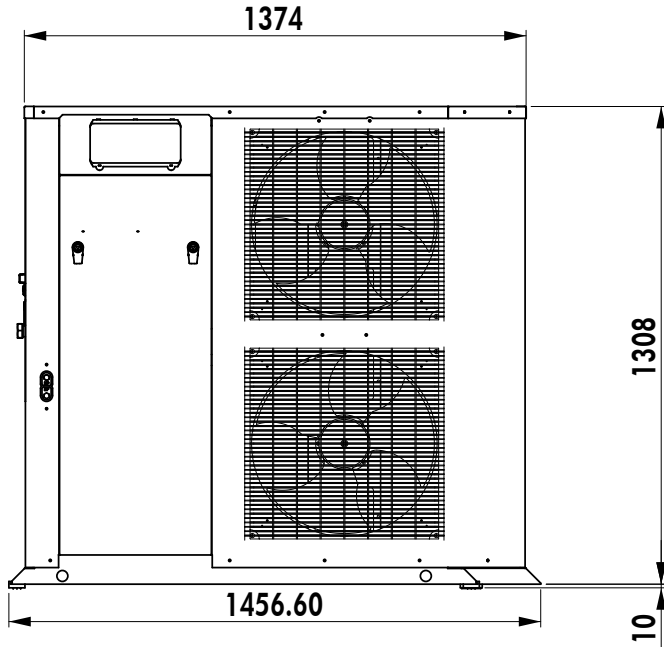
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REFRIGERATION AND HYDRAULIC LINKS DIAGRAM

SCHEMA FRIGORIFIQUE ET HYDRAULIQUE

KÜHL- UND HYDRAULIKDIAGRAMM

SCHEMA FRIGORIFERO ED IDRAULICO

ESQUEMA FRIGORÍFICO E HIDRÁULICO

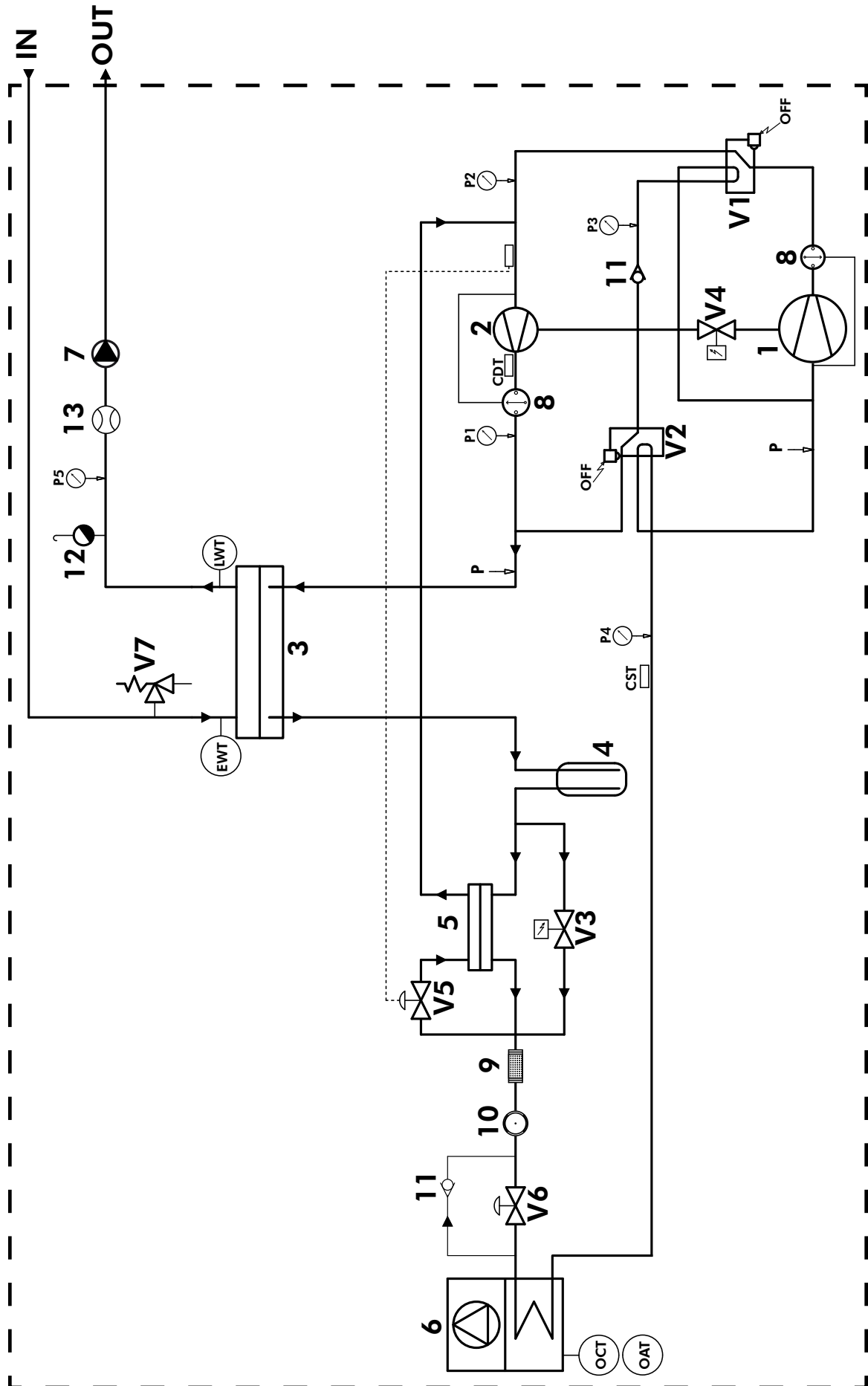
1	Large compressor
2	Small compressor
3	Plate heat exchangers. Counter-current heating
4	Liquid tank
5	Plate heat exchangers. economiser
6	Finned heat exchanger and fans
7	Circulation pump
8	Oil separator
9	Dehydrator filter
10	Liquid warning light
11	Non-return valve
12	Automatic bleed
13	Flowmeter
V1	Four-way valve
V2	Four-way valve
V3	Injection electrovalve
V4	Electrovalve
V5	Injection expansion valve
V6	Electronic expansion valve
V7	Safety valve (3 bar)
P1	High Pressure safety pressostat
P2	High Pressure pressostat
P3	Defrost system high pressure control pressostat
P4	Evaporation pressure probe
P5	Water pressure probe
P	Pressure take-off
CDT	Outlet temperature probe
CST	Evaporation temperature probe
LWT	Water temperature probe (outlet)
EWT	Water temperature probe (inlet)
OCT	Outdoor coil temperature probe
OAT	Outdoor air temperature probe

1	Gros compresseur
2	Petit compresseur
3	Echangeur à plaques Contre courant chauffage
4	Réservoir liquide
5	Echangeur à plaques. économiseur
6	Echangeur à ailettes et ventilateurs
7	Circulateur
8	Séparateur d'huile
9	Filtre déshydrateur
10	Voyant liquide
11	Clapet anti-retour
12	Purgeur automatique
13	Débitmètre
V1	Vanne 4 voies
V2	Vanne 4 voies
V3	Electrovanne d'injection
V4	Electrovanne
V5	Détendeur d'injection
V6	Détendeur électronique
V7	Soupape sécurité (3 bar)
P1	Pressostat sécurité haute pression
P2	Pressostat haute pression intermédiaire
P3	Pressostat contrôle haute pression dégivrage
P4	Capteur de pression d'évaporation
P5	Capteur de pression d'eau
P	Prise de pression
CDT	Sonde de température de refoulement
CST	Sonde de température d'évaporation
LWT	Sonde de température d'eau (sortie)
EWT	Sonde de température d'eau (entrée)
OCT	Sonde contrôle de condensation
OAT	Sonde de température d'air extérieure

1	Kompressor Niederdruck
2	Kompressor Hochdruck
3	Plattenwärmeaustauscher. Gegenstrom Heizung
4	Flüssigkeitsbehälter
5	Plattenwärmeaustauscher. economiser
6	Lamellenwärmetauscher und Ventilatoren
7	Umlaufpumpe
8	Olabscheider
9	Filtertrockner
10	Anzeigelampe Flüssigkeit
11	Rückschlagklappe
12	Automatischer Ablasshahn
13	Durchflussmesser
V1	Vierwegventil
V2	Vierwegventil
V3	Injektionelektroventil
V4	Elektroventil
V5	Expansionsventil Injektion
V6	Elektronisches Minderventil
V7	Sicherheitsventil (3 Bar)
P1	Hochdruck-Sicherheitspressostat
P2	Hochdruck-Pressostat
P3	Hochdruckkontrollpressostat Abtauen
P4	Verdampfungsdrucksensor
P5	Wasserdrucksensor
P	Druckanschluss
CDT	Fördertemperatursensor
CST	Verdampfungstemperatursensor
LWT	Wassertemperaturfühler (Austritt)
EWT	Wassertemperaturfühler (Eintritt)
OCT	Messfühler Verflüssigungskontrolle
OAT	Lufttemperaturfühler

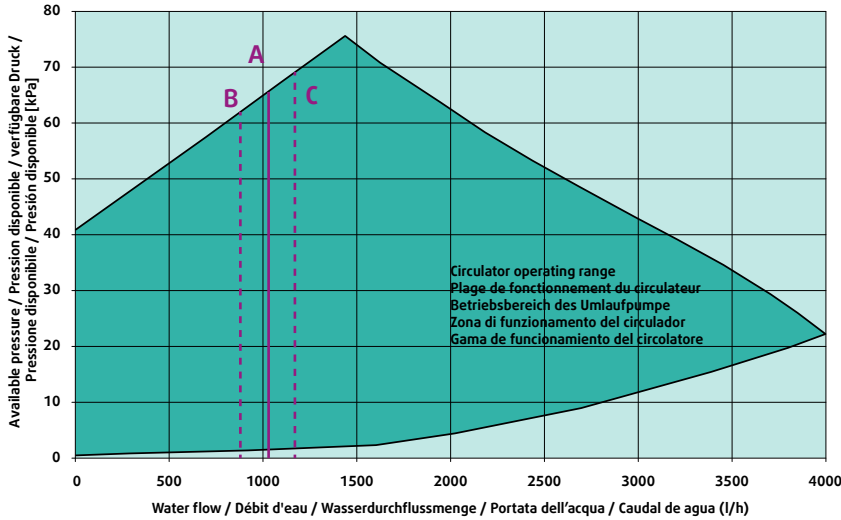
1	Compresor baja presión
2	Compresor alta presión
3	Scambiatori di calore a piastre Contracorriente calefacción
4	Depósito líquido
5	Scambiatori di calore a piastre economizzatore
6	Intercambiador de aletas y ventiladores
7	Circulador
8	Separatore d'olio
9	Filtro deshidratador
10	Spia liquido
11	Valvola antirritorno
12	Purgador automático
13	Flussometro
V1	Valvola a quattro vie
V2	Valvola a quattro vie
V3	Elettrovalvola di iniezioni
V4	Elettrovalvola
V5	Válvula de expansión de iniezioni
V6	Riduttore di pressione elettronico
V7	Válvula de seguridad (3 bares)
P1	Presostato de seguridad alta presión
P2	Presostato alta presión
P3	Presostato de control alta presión descongelación
P4	Sensore di pressione dell'evaporazione
P5	Sensore di pressione dell'acqua
P	Presa di pressione
CDT	Sonda di temperatura di espulsione
CST	Sonda di temperatura di evaporazione
LWT	Sonda de temperatura de agua (salida)
EWT	Sonda de temperatura de agua (entrada)
OCT	Sonda controllo di condensazione
OAT	Sonda de temperatura de aire

1	Compressore bassa pressione
2	Compressore alta pressione
3	Intercambiador térmico de placas Contracorriente riscaldamento
4	Serbatoio liquido
5	Intercambiador térmico de placas economizador
6	Scambiatore ad alette e ventilatori
7	Circolatore
8	Separador de aceite
9	Filtro disidratante
10	Indicador luminoso líquido
11	Válvula antirretorno
12	Valvola di scarico automatica
13	Flujómetro
V1	Válvula de cuatro vías
V2	Válvula de cuatro vías
V3	Electroválvula de inyección
V4	Electroválvula
V5	Valvola d'espansione de inyección
V6	Reductor electrónico
V7	Valvola di sicurezza (3 bar)
P1	Pressostato sicurezza alta pressione
P2	Pressostato alta pressione
P3	Pressostato controllo alta pressione sbrinamento
P4	Captador de presión de evaporación
P5	Captador de presión de agua
P	Toma de presión
CDT	Sonda de temperatura de descarga
CST	Sonda de temperatura de evaporación
LWT	Sonda di temperatura acqua (uscita)
EWT	Sonda di temperatura acqua (ingresso)
OCT	Sonda de control de condensación
OAT	Sonda di temperatura aria



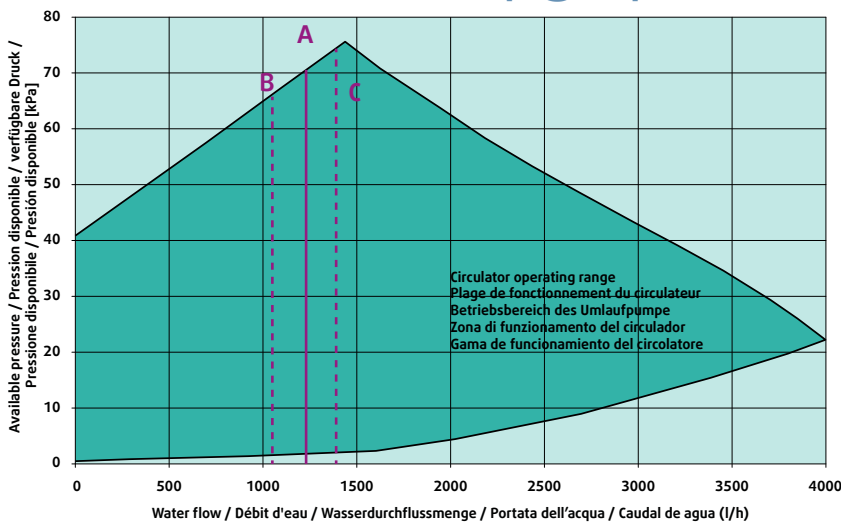
WATER FLOW CALCULATION GRAPH
 ABAQUE DE CALCUL DE DEBIT D'EAU
 BERECHNUNGSKURVE DER WASSERDURCHFLUSSMENGE
 ABACO DI CALCOLO DELLA PORTATA DELL'ACQUA
 ÁBACO DE CÁLCULO DE CAUDAL DE AGUA

Aqu@Scop HT 12-6



- A Nominal flow
- B Minimal flow
- C Maximal flow

Aqu@Scop HT 14-7

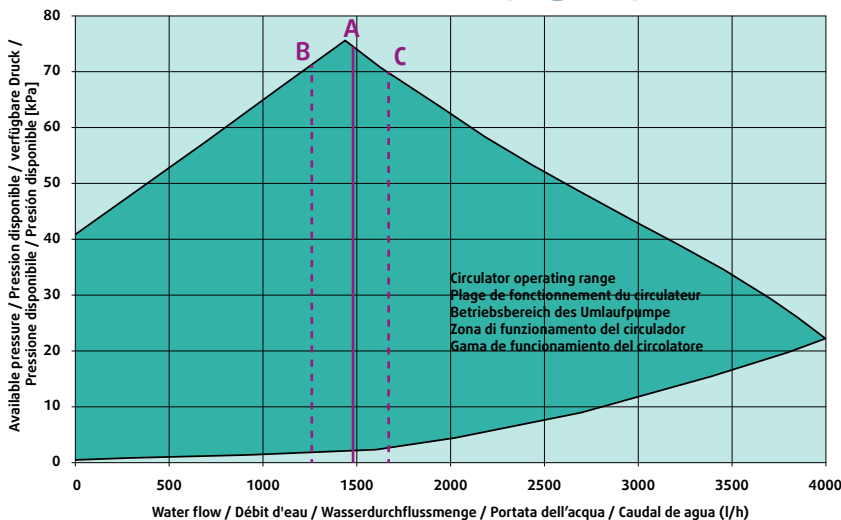


- A Débit nominal
- B Débit minimal
- C Débit maximal

- A Nenndurchflussmenge
- B Minimaler Absatz
- C Maximaler Absatz

- A Portata nominale
- B Portata Minimo
- C Portata massimo

Aqu@Scop HT 18-9



- A Caudal nominal
- B Caudal mínimo
- C Caudal máximo

WIRING DIAGRAM SCHEMAS ELECTRIQUES STROMLAUFPLANS SCHEMA ELETRICO ESQUEMA ELECTRICO

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.

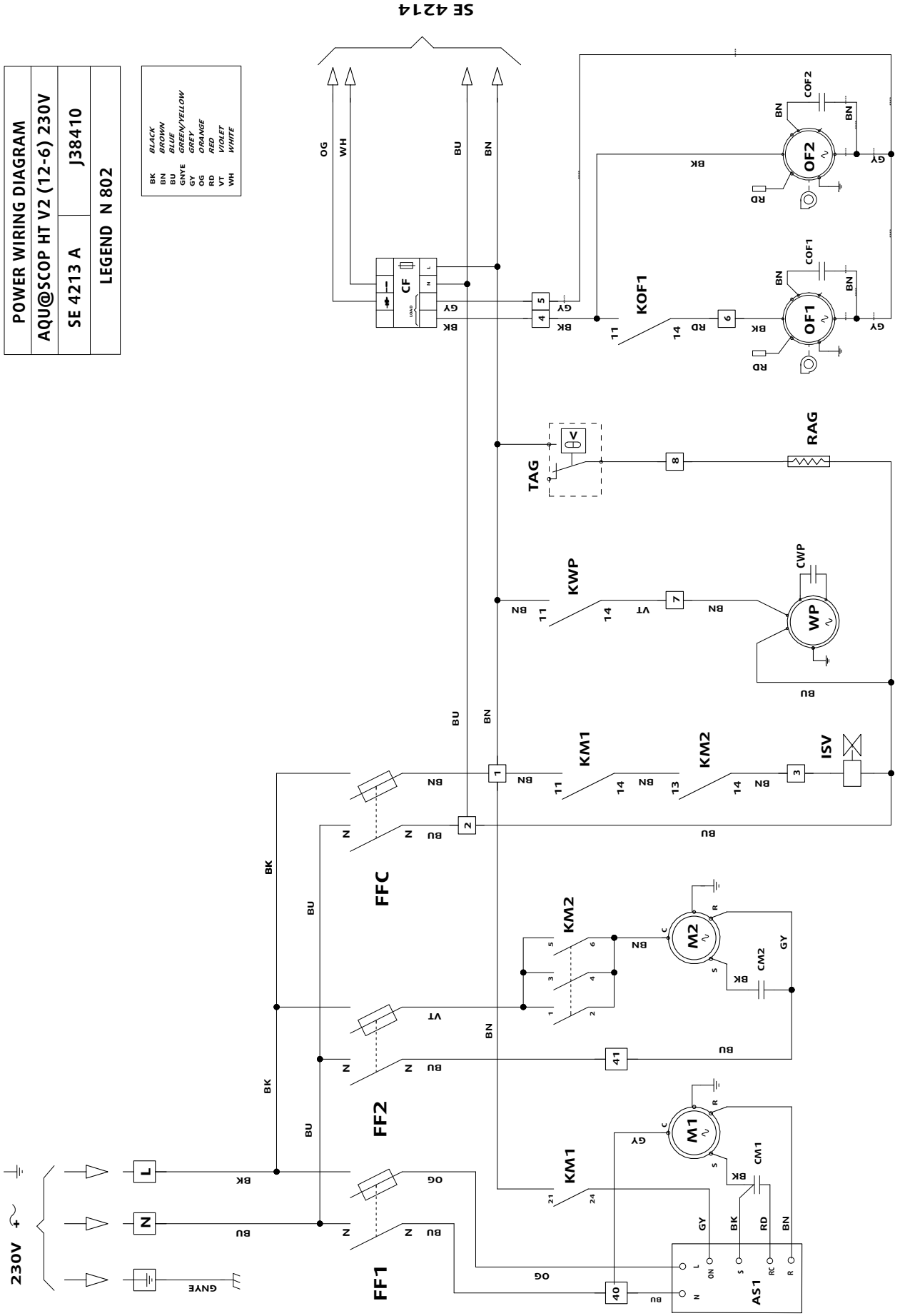
VOR JEDEM EINGRIFF AN DEN ANSCHLUßKÄSTEN UNBEDINGT DAS GERÄT ABSCHALTEN!

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

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

POWER WIRING DIAGRAM	
AQU@SCOP HT V2 (12-6) 230V	
SE 4213 A	J38410
LEGEND N 802	

BK	BLACK
BRN	BROWN
BU	BLUE
GNVE	GREEN/YELLOW
GY	GREY
OG	ORANGE
RD	RED
VT	VIOLET
WH	WHITE



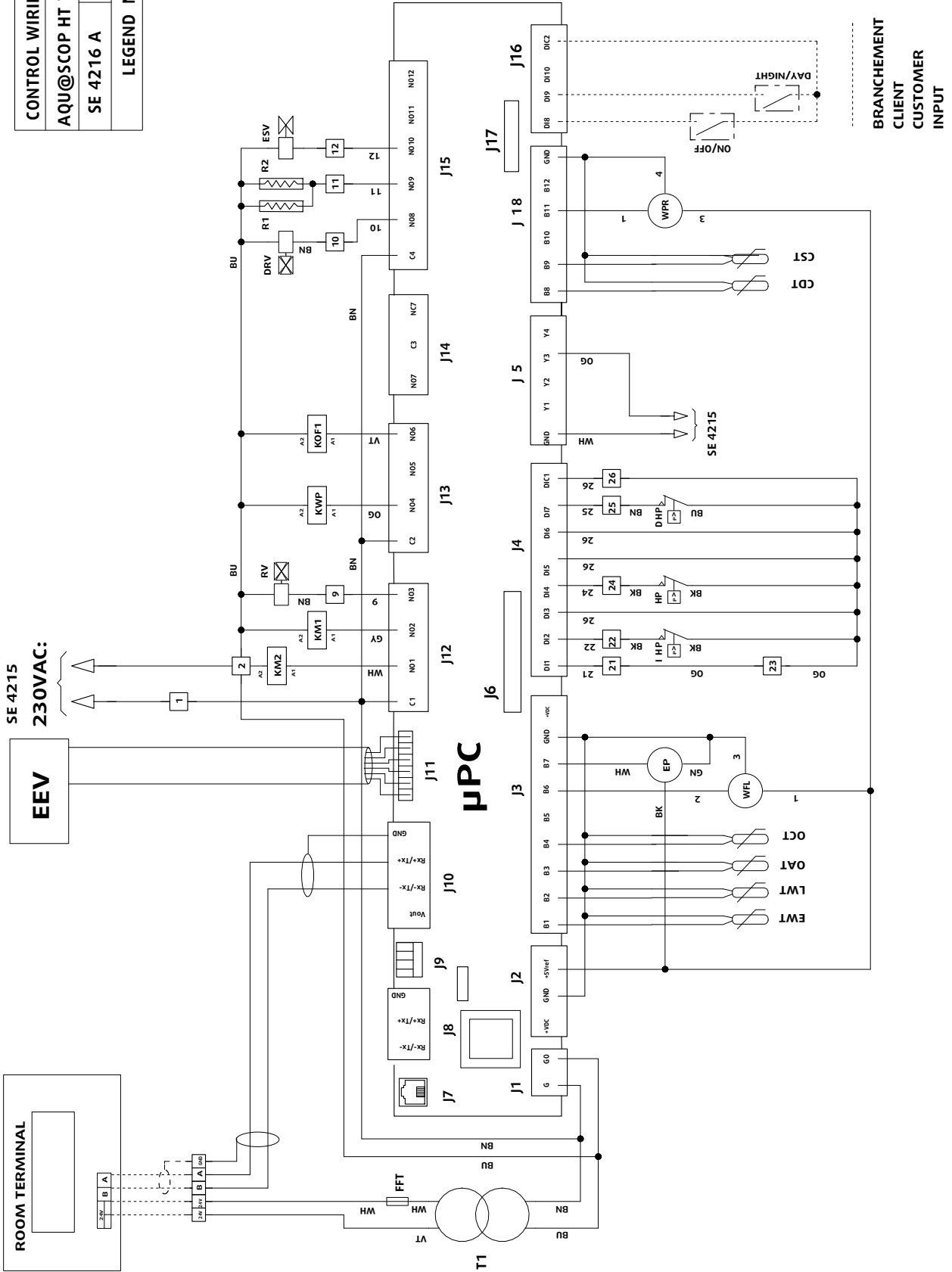
SE 4214

APPENDIX / ANNEXE / ANLAGE / ALLEGATO / ANEXO

AQU@SCOP HT 14-7 230V +/-10% 50HZ

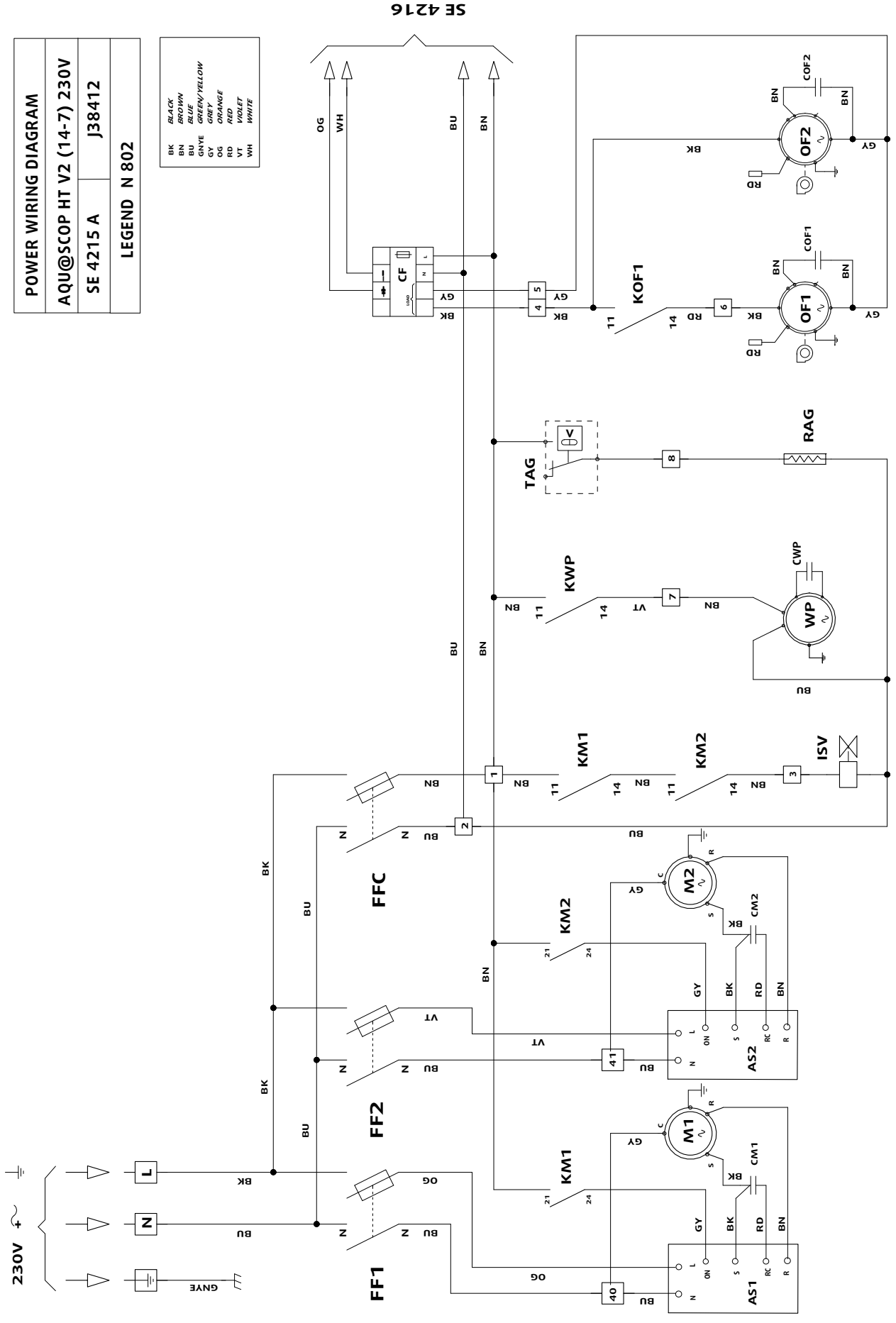
CONTROL WIRING DIAGRAM	
AQU@SCOP HT V2 (14-7) 230V	
SE 4216 A	J38413
LEGEND N 802	

BK	BLACK
BRN	BROWN
BU	BLUE
GNVE	GREEN/YELLOW
GRY	GREY
OR	ORANGE
VT	VIOLET
WH	WHITE



POWER WIRING DIAGRAM	
AQU@SCOP HT V2 (14-7) 230V	
SE 4215 A	J38412
LEGEND N 802	

BK	BLACK
BN	BROWN
BU	BLUE
GY	GREEN/YELLOW
OG	ORANGE
RD	RED
VT	VIOLET
WH	WHITE



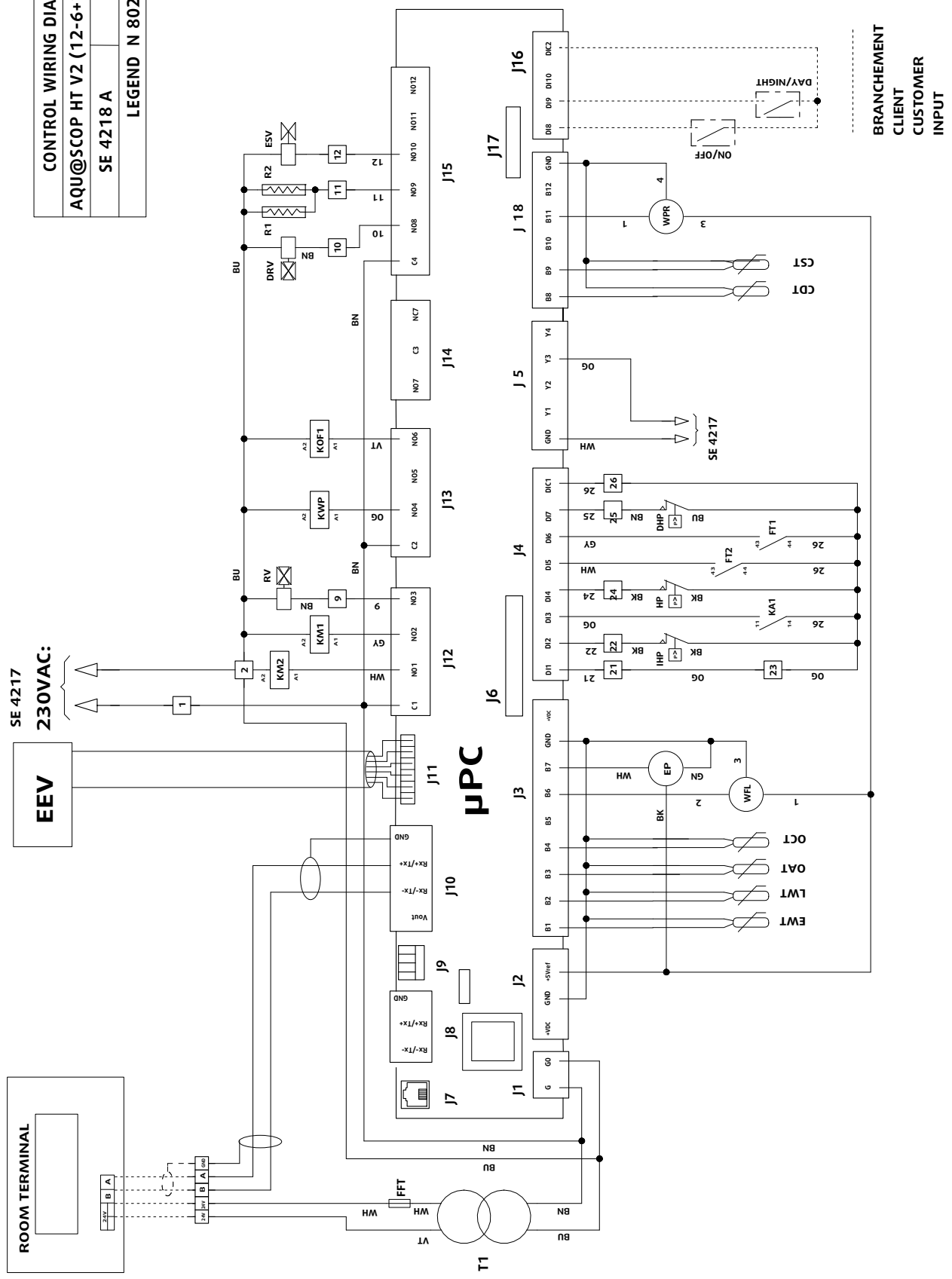
SE 4216

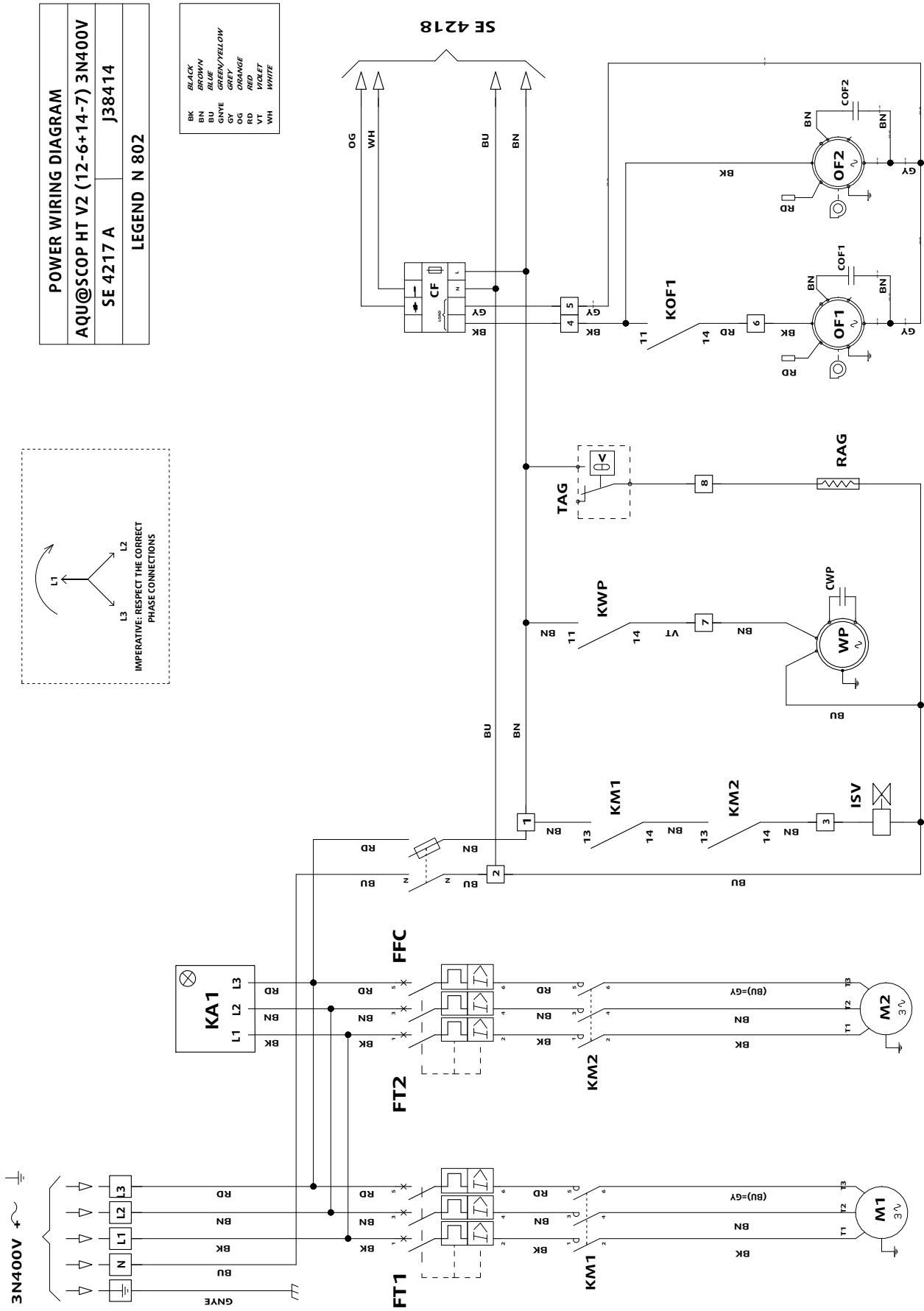
APPENDIX / ANNEXE / ANLAGE / ALLEGATO / ANEXO

AQU@SCOP HT 12-6 / 14-7 3N~400V +/-10% 50HZ

CONTROL WIRING DIAGRAM
AQU@SCOP HT V2 (12-6+14-7) 3N400V
SE 4218 A J38415
LEGEND N 802

BK	BLACK
BN	BROWN
BU	BLUE
GNVE	GREEN/YELLOW
GY	GREY
OG	ORANGE
WH	WHITE
WHT	WHITE



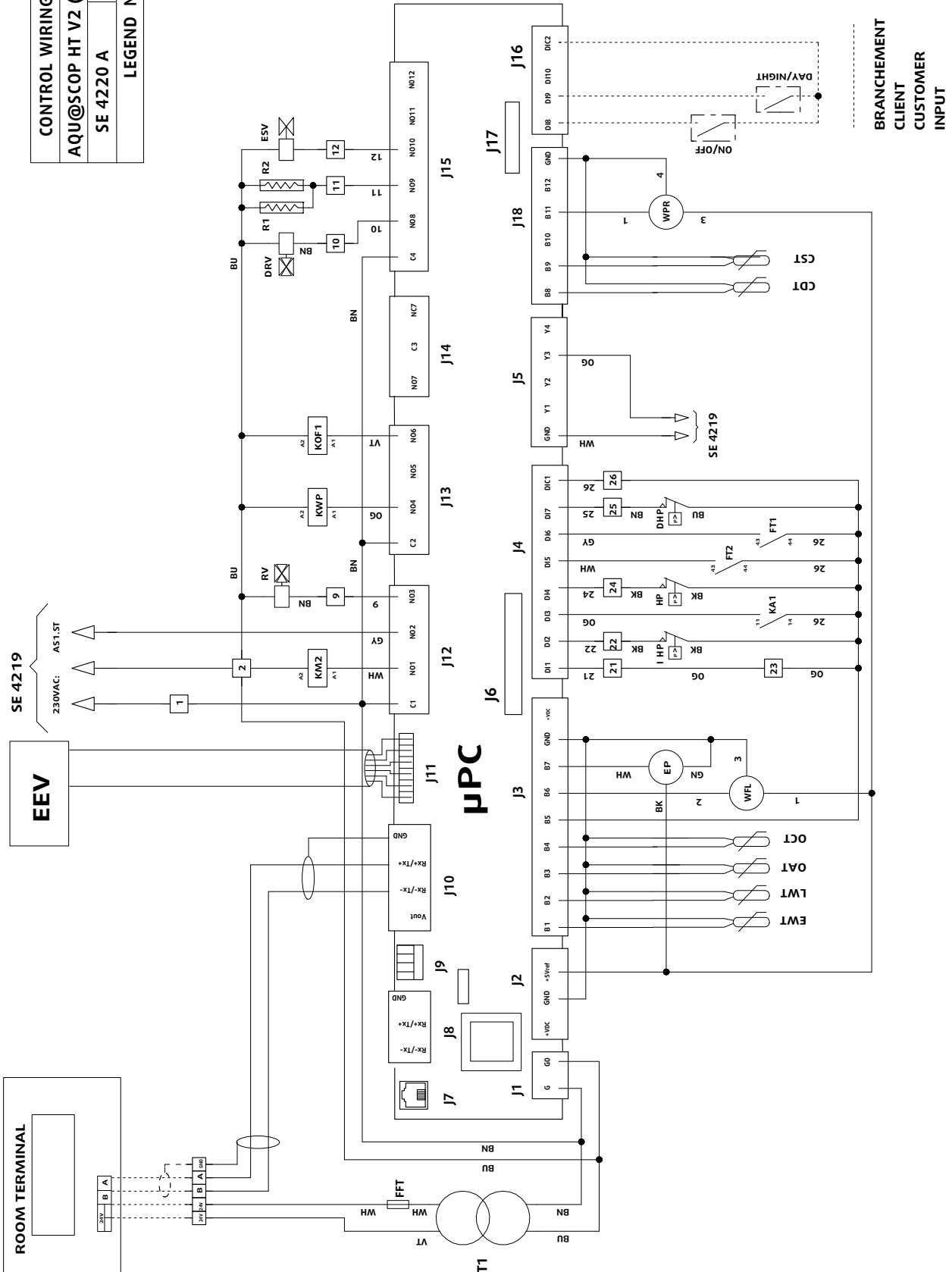


APPENDIX / ANNEXE / ANLAGE / ALLEGATO / ANEXO

AQU@SCOP HT 18-9 3N~400V +/-10% 50HZ

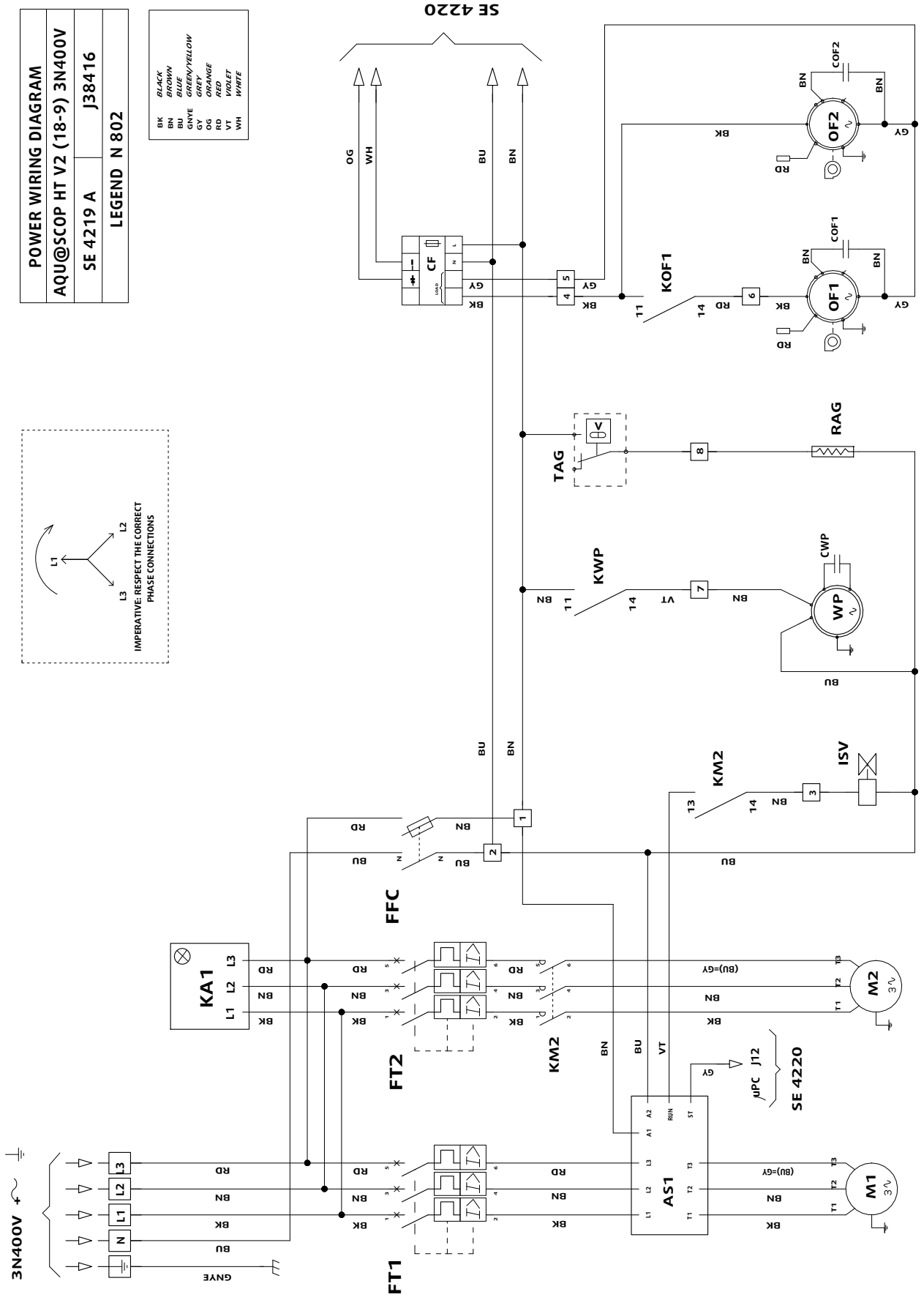
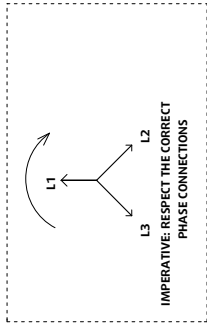
CONTROL WIRING DIAGRAM	
AQU@SCOP HT V2 (18-9) 3N400V	
SE 4220 A	J38583
LEGEND N 802	

BK	BLACK
BN	BROWN
BU	BLUE
GNVE	GREEN/YELLOW
GY	GREY
OG	ORANGE
WH	WHITE
WT	YELLOW



POWER WIRING DIAGRAM
AQU@SCOP HT V2 (18-9) 3N400V
SE 4219 A J38416
LEGEND N 802

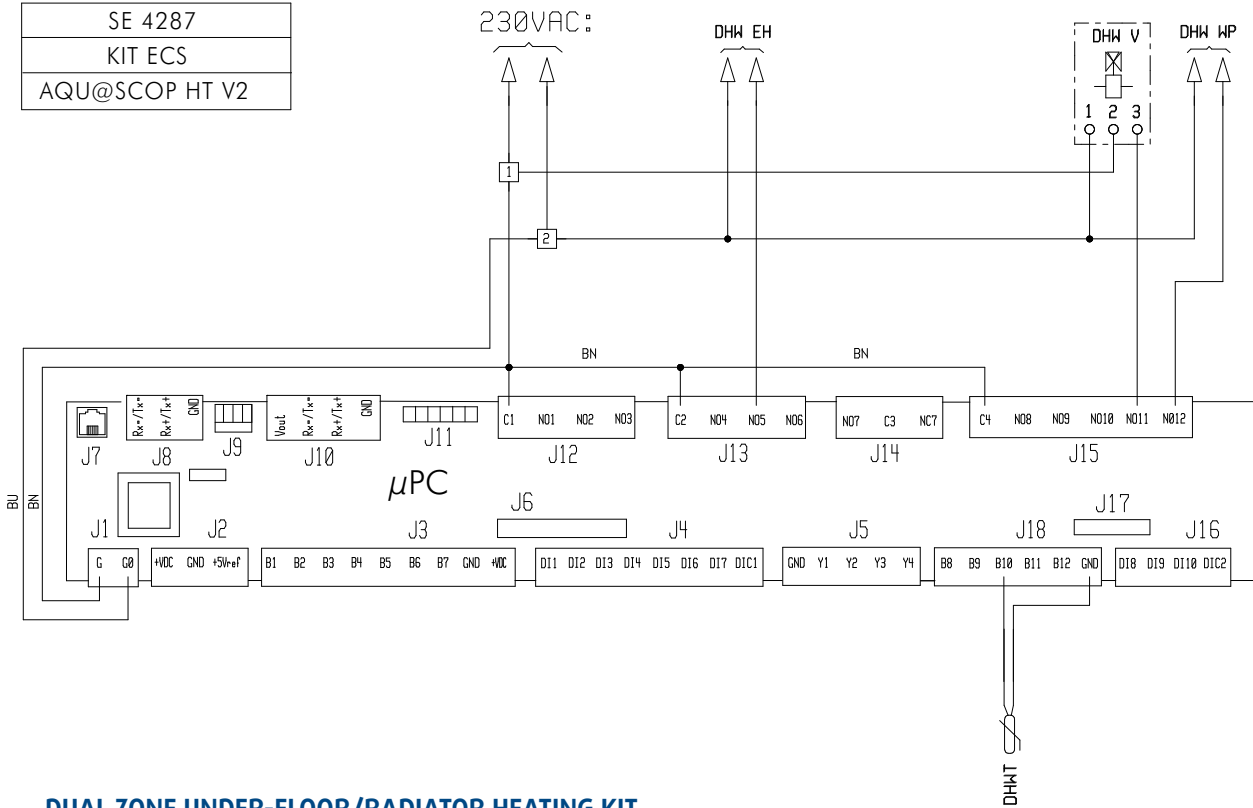
BK	BLACK
BN	BLUE
BU	BROWN
GY	GREEN/YELLOW
OG	ORANGE
RD	RED
VT	VIOLET
WH	WHITE



APPENDIX / ANNEXE / ANLAGE / ALLEGATO / ANEXO

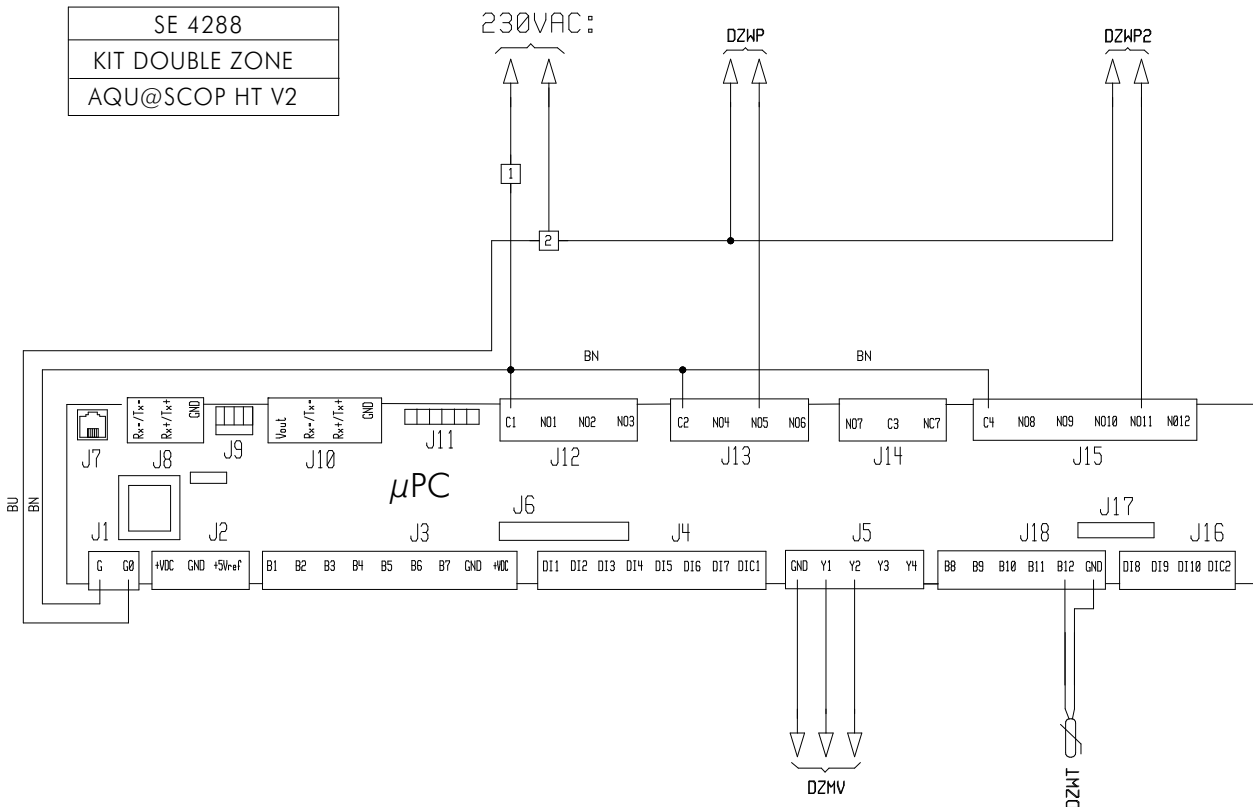
DOMESTIC HOT WATER PLATE EXCHANGEUR KIT KIT EAU CHAUDE SANITAIRE AVEC ECHANGEUR A PLAQUES BAUSÄTZE SANITÄRES WARMWASSER MIT PLATTENAUSCHER KIT ACQUA CALDA SANITARIA CON SCAMBIATORE A PIASTRE KIT AGUA CALIENTE SANITARIA CON CAMBIADOR DE PLACAS

SE 4287
KIT ECS
AQU@SCOP HT V2

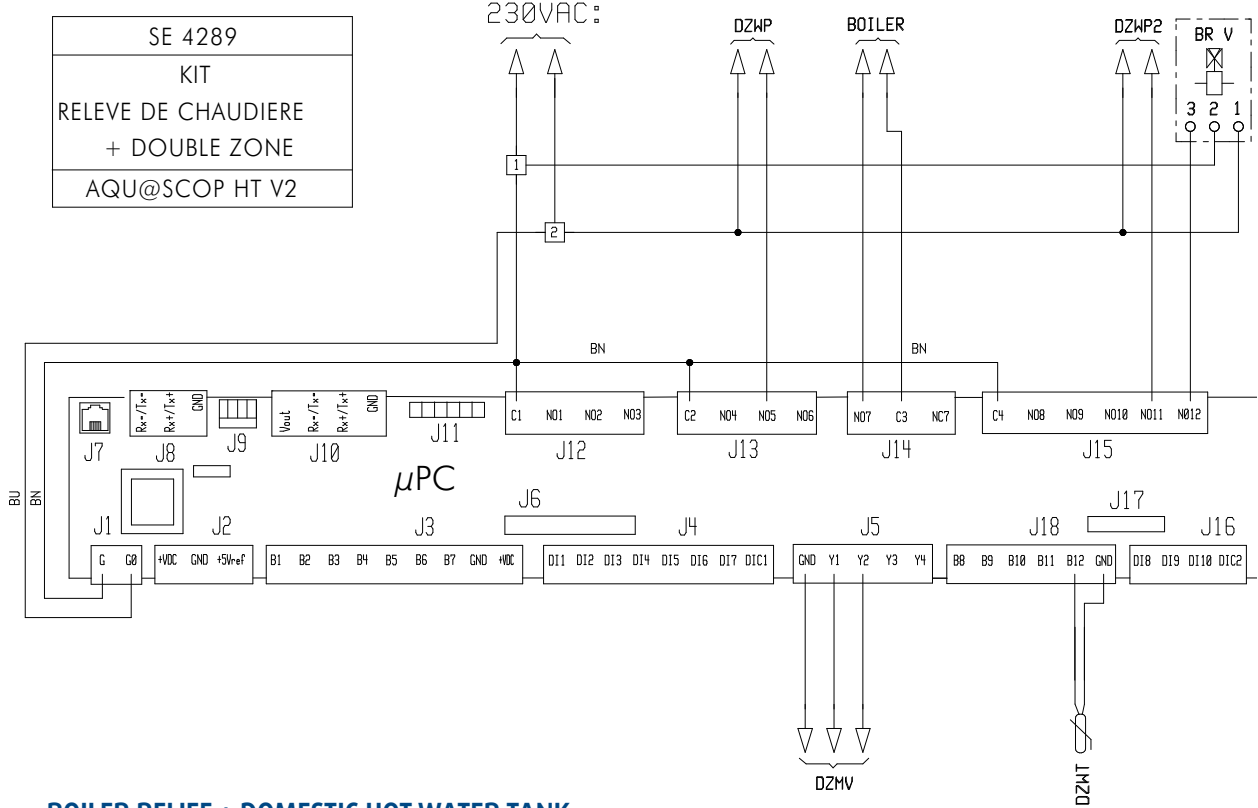


DUAL ZONE UNDER-FLOOR/RADIATOR HEATING KIT KIT DOUBLE ZONE PLANCHER CHAUFFANT/RADIATEURS DOPPELZONEN-VERWALTUNGSBAUSATZ HEIZFUSSBODEN/HEIZKÖRPER KIT RADDOPPIA ZONA PISO CALIENTE/RADIATORE KIT DOBLA ZONA SUOLA RISCALDANTE/RADIADOR

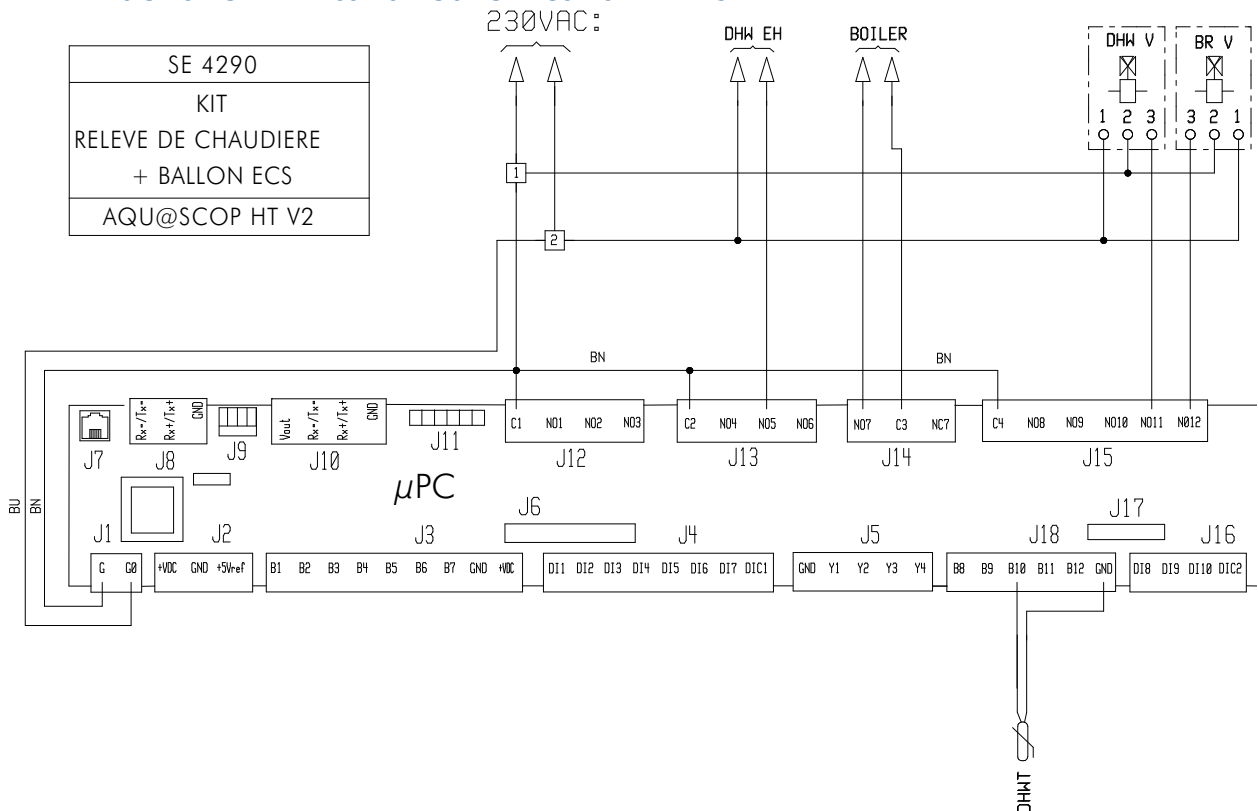
SE 4288
KIT DOUBLE ZONE
AQU@SCOP HT V2



BOILER RELIEF + DUAL ZONE KIT
RELEVÉ DE CHAUDIERE + KIT DOUBLE ZONE
HEIZKESSELEINBINDUNG + DOPPELZONEN-VERWALTUNGSBAUSATZ
CAMBIO DI CALDAIA + KIT RADDOPPIA ZONA
RELEVO DE CALDERA + KIT DOBLA ZONA

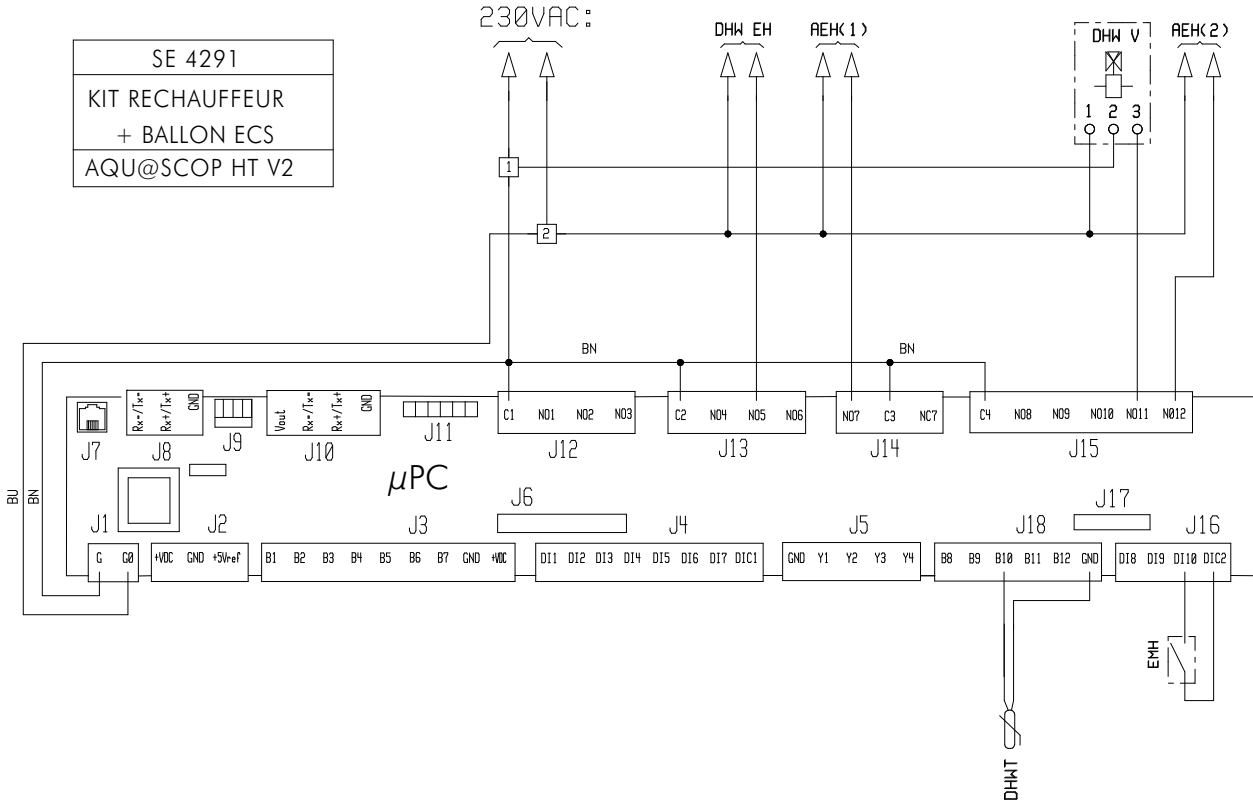


BOILER RELIEF + DOMESTIC HOT WATER TANK
RELEVÉ DE CHAUDIERE + BALLON D'EAU CHAUDE SANITAIRE
HEIZKESSELEINBINDUNG + BRAUCHWASSERVERSORGUNG
CAMBIO DI CALDAIA + PALLA DI ACQUA CALDA SANITARIA
RELEVO DE CALDERA + ACUMULADOR DE AGUA CALIENTE SANITARIA

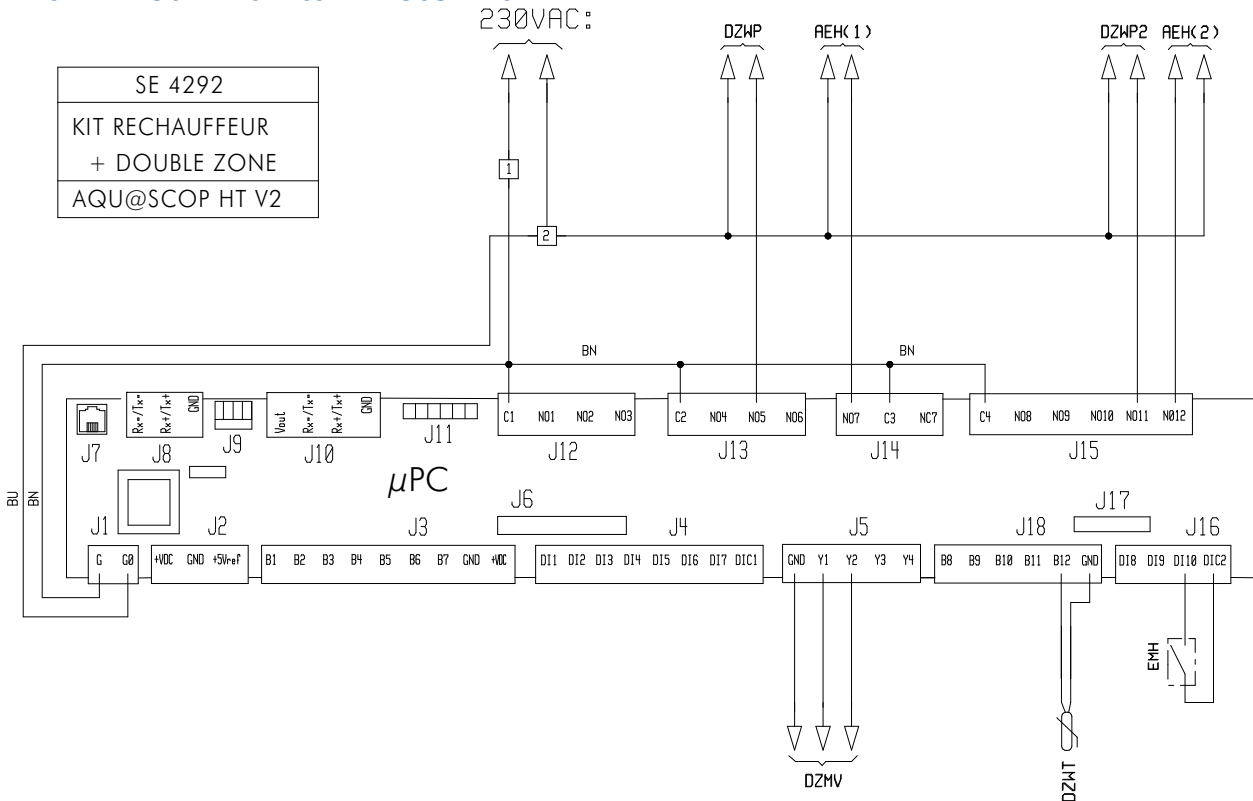


APPENDIX / ANNEXE / ANLAGE / ALLEGATO / ANEXO

ELECTRIC HEATER + DOMESTIC HOT WATER TANK
RECHAUFFEUR ELECTRIQUE + BALLON D'EAU CHAUDE SANITAIRE
ELEKTRISCHE HEIZUNG + BRAUCHWASSERVERSORGUNG
RISCALDATORE ELETTRICO + PALLA DI ACQUA CALDA SANITARIA
CALENTADOR ELECTRICO + ACUMULADOR DE AGUA CALIENTE SANITARIA

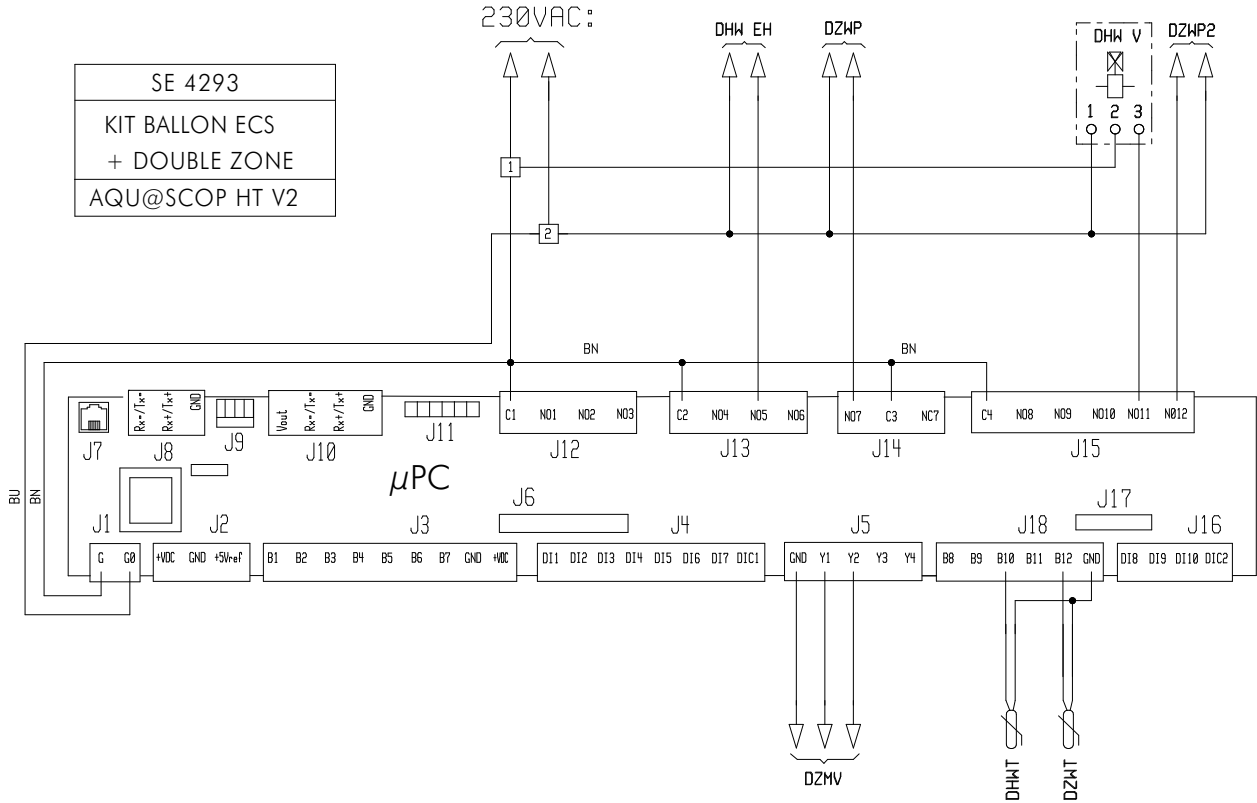


ELECTRIC HEATER + DUAL ZONE KIT
RECHAUFFEUR ELECTRIQUE + DOUBLE ZONE
ELEKTRISCHE HEIZUNG + DOPPELZONEN-VERWALTUNGSBAUSATZ
RISCALDATORE ELETTRICO + KIT RADDOPPIA ZONA
CALENTADOR ELECTRICO + KIT DOBLA ZONA



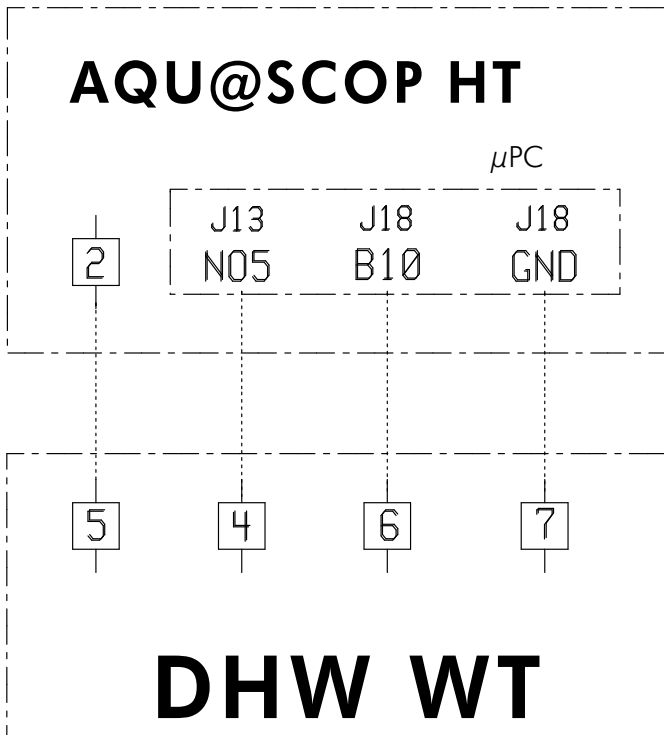
APPENDIX / ANNEXE / ANLAGE / ALLEGATO / ANEXO

DOMESTIC HOT WATER TANK + DUAL ZONE KIT
 BALLON D'EAU CHAUDE SANITAIRE + DOUBLE ZONE
 BRAUCHWASSERVERSORGUNG + DOPPELZONEN-VERWALTUNGSBAUSATZ
 PALLA DI ACQUA CALDA SANITARIA + KIT RADDOPPIA ZONA
 ACUMULADOR DE AGUA CALIENTE SANITARIA + KIT DOBLA ZONA



APPENDIX / ANNEXE / ANLAGE / ALLEGATO / ANEXO

DOMESTIC HOT WATER TANK
 BALLON D'EAU CHAUDE SANITAIRE
 BRAUCHWASSERVERSORGUNG
 PALLA DI ACQUA CALDA SANITARIA
 ACUMULADOR DE AGUA CALIENTE SANITARIA



CONNECTION DIAGRAM

SE 4285

μ PC REGULTEUR DE L'AQU@SCOP HT
 DHW WT BALLON D'EAU CHAUDE SANITAIRE

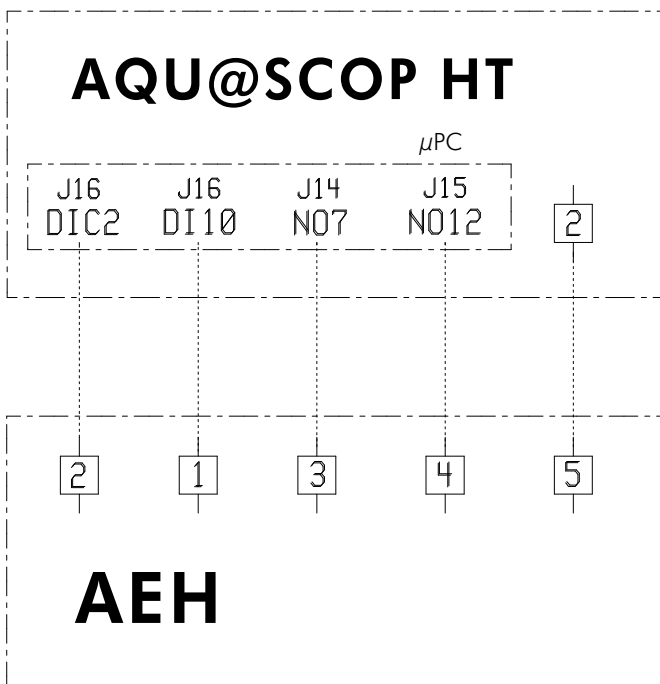
μ PC AQU@SCOP HT CONTROLLER
 DHW WT DOMESTIC HOT WATER TANK

μ PC KONTROLLEUR DES AQU@SCOP HT
 DHW WT BRAUCHWASSERVERSORGUNG

μ PC CONTROLLO ELETTRONICO DEL AQU@SCOP HT
 DHW WT PALLA DI ACQUA CALDA SANITARIA

μ PC CONTROL DE LA AQU@SCOP HT
 DHW WT ACUMULADOR DE AGUA CALIENTE SANITARIA

ADDITIONAL ELECTRIC HEATER
 CHAUFFAGE ELECTRIQUE ADDITIONNEL
 ZUSATZLICHE ELEKTROHEIZUNG
 RESISTENZE ELETTRICHE ADDIZIONALE
 CALEFACCION ELECTRTRICA ADICIONAL



CONNECTION DIAGRAM

SE 4284

μ PC REGULTEUR DE L' AQU@SCOP HT
 AEH CHAUFFAGE ELECTRIQUE ADDITIONNEL

μ PC AQU@SCOP HT CONTROLLER
 AEH ADDITIONAL ELECTRIC HEATER

μ PC KONTROLLEUR DES AQU@SCOP HT
 AEH ZUSATZLICHE ELEKTROHEIZUNG

μ PC CONTROLLO ELETTRONICO DEL AQU@SCOP HT
 AEH RESISTENZE ELETTRICHE ADDIZIONALE

μ PC CONTROL DE LA AQU@SCOP HT
 AEH CALEFACCION ELECTRTRICA ADICIONAL

PERFORMANCES
 PERFORMANCES
 LEISTUNGSTABELLE
 POTENZA
 POTENCIA

AQU@SCOP HT 12-6

		A7 W35	A2 W35	A-7 W35	A-15 W35	A7 W45	A7 W55	A-7 W55	A20 W55
Outdoor temperature T entré air T Lufteingang Temperatura entrata di aria Temperatura entrada por aire		7	2	-7	-15	7	7	-7	20
Outlet water temperature T sortie eau T Wasserausgang Temperatura uscita di acqua Temperatura sacada de agua		35	35	35	35	45	55	55	55
Water flow Débit d'eau Wasserdurchfluss Flusso dell'acqua Flujo de agua	L/h	1 008	1 008	1 008	1 008	960	584	584	584
Heating capacity Puissance calorifique wärmeerzeugend Potenza calorifico Potencia calorífica	W	6 000	8 640	8 960	7 200	5 760	5 520	9 000	7 600
Power input (1) Puissance absorbée (1) Stromverbrauch (1) Potenza assorbita (1) Potencia absorbida (1)	W	1 459	2 784	2 934	2 796	1 868	2 286	3 681	2 176
COP		4.11	3.10	3.05	2.57	3.08	2.42	2.45	3.49
Compressor Compresseur Kompressor Compressore Compresor		C2	C1+C2	C1+C2	C1+C2	C2	C2	C1+C2	C2

(1) According to EHPA and EN 14511

APPENDIX / ANNEXE / ANLAGE / ALLEGATO / ANEXO

AQU@SCOP HT 14-7

		A7 W35	A2 W35	A-7 W35	A-15 W35	A7 W45	A7 W55	A-7 W55	A20 W55
Outdoor temperature T entré air T Lufteingang Temperatura entrata di aria Temperatura entrada por aire		7	2	-7	-15	7	7	-7	20
Outlet water temperature T sortie eau T Wasserausgang Temperatura uscita di acqua Temperatura sacada de agua		35	35	35	35	45	55	55	55
Water flow Débit d'eau Wasserdurchfluss Flusso dell'acqua Flujo de agua	L/h	1 260	1 260	1 260	1 260	1 200	730	730	730
Heating capacity Puissance calorifique wärmeerzeugend Potenza calorifico Potencia calorífica	W	7 500	10 800	11 200	9 000	7 200	6 900	11 250	9 500
Power input (1) Puissance absorbée (1) Stromverbrauch (1) Potenza assorbita (1) Potencia absorbida (1)	W	1 820	3 473	3 660	3 488	2 330	2 851	4 592	2 714
COP		4.12	3.11	3.06	2.58	3.09	2.42	2.45	3.50
Compressor Compresseur Kompressor Compressore Compresor		C2	C1+C2	C1+C2	C1+C2	C2	C2	C1+C2	C2

(1) According to EHPA and EN 14511

AQU@SCOP HT 18-9

		A7 W35	A2 W35	A-7 W35	A-15 W35	A7 W45	A7 W55	A-7 W55	A20 W55
Outdoor temperature T entré air T Lufteingang Temperatura entrata di aria Temperatura entrada por aire		7	2	-7	-15	7	7	-7	20
Outlet water temperature T sortie eau T Wasserausgang Temperatura uscita di acqua Temperatura sacada de agua		35	35	35	35	45	55	55	55
Water flow Débit d'eau Wasserdurchfluss Flusso dell'acqua Flujo de agua	L/h	1 487	1 487	1 487	1 487	1 416	861	861	861
Heating capacity Puissance calorifique wärmeerzeugend Potenza calorifico Potencia calorífica	W	8 850	10 800	11 200	9 000	7 200	6 900	11 250	9 500
Power input (1) Puissance absorbée (1) Stromverbrauch (1) Potenza assorbita (1) Potencia absorbida (1)	W	2 085	3 372	3 554	3 387	2 262	2 768	4 458	2 635
COP		4.24	3.20	3.15	2.66	3.18	2.49	2.52	3.61
Compressor Compresseur Kompressor Compressore Compresor		C2	C1+C2	C1+C2	C1+C2	C2	C2	C1+C2	C2

(1) According to EHPA and EN 14511

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

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📠 : +33 (0)2 32 32 55 13



IOM PAC HT 02-N-5GB
Part number : **J38573**
Supersedes : **IOM PAC HT 02-N-4GB**