



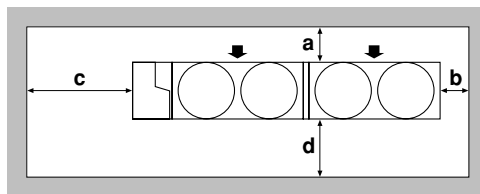
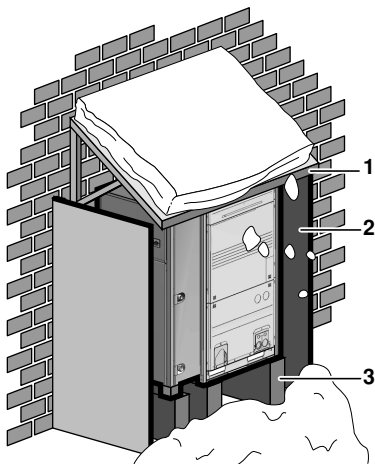
# INSTALLATION AND OPERATION MANUAL

## Packaged air-cooled water chiller

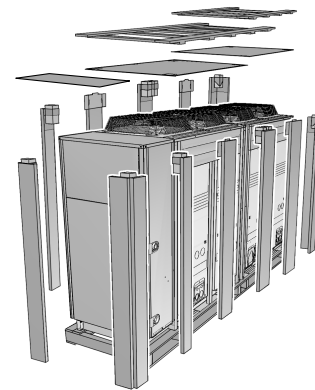
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EWYQ016BAW  
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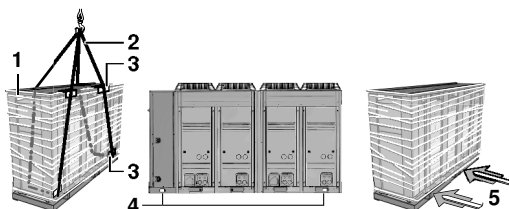
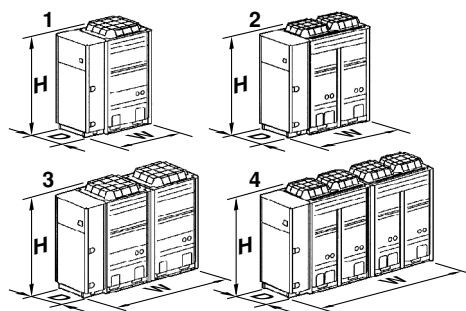
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b ≥ 100 mm	b ≥ 500 mm
c ≥ 500 mm	c ≥ 500 mm
d ≥ 500 mm	d ≥ 500 mm



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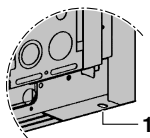
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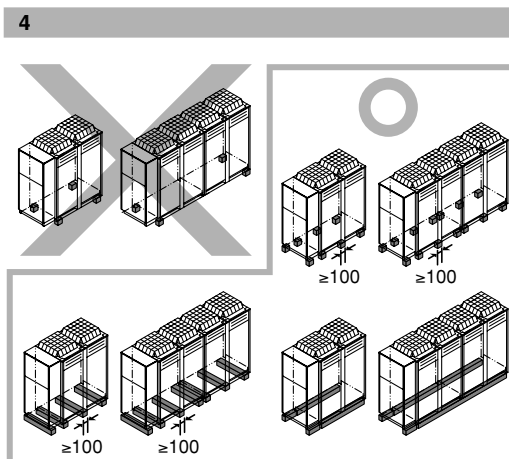


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2	032	1684	1650	775
3	040+050	1684	2320	780
4	064	1684	2940	780



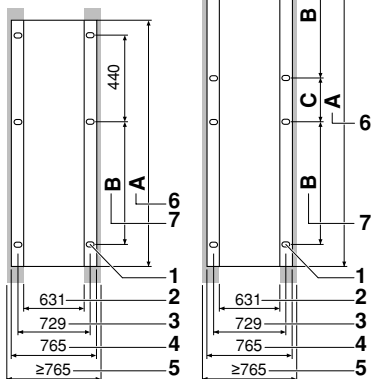
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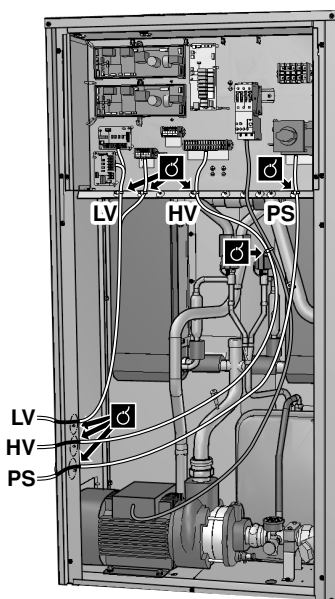
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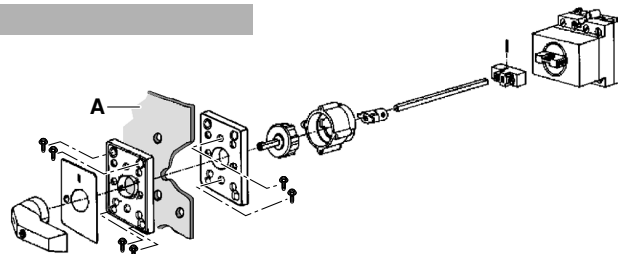
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032	1650	1102	—	—
040+050	2320	792	192	—
064	2940	1102	192	—



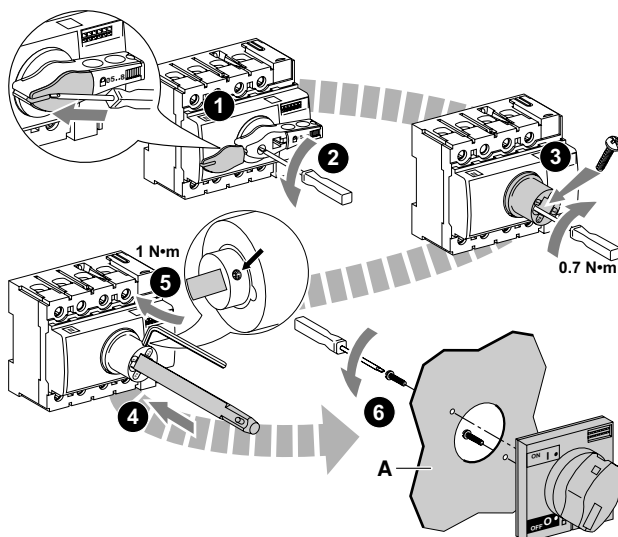
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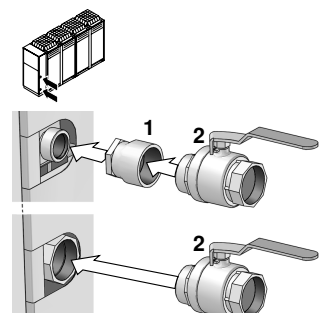
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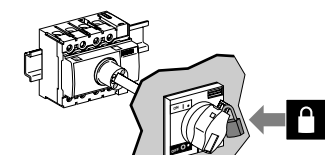
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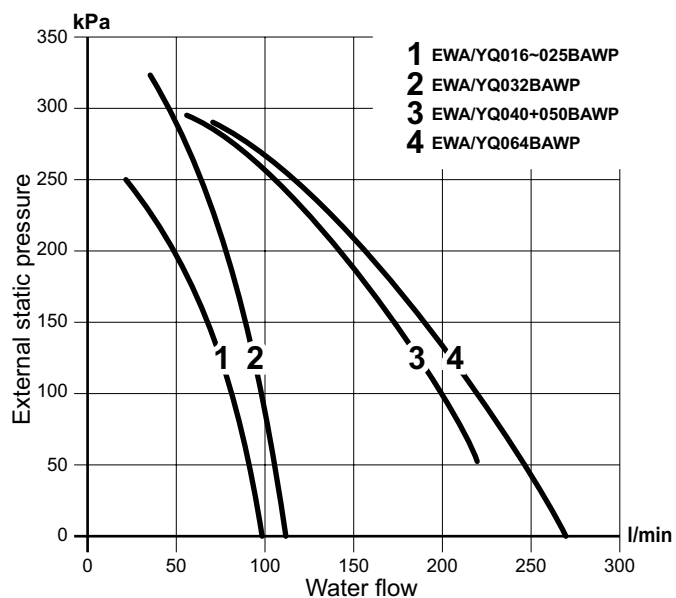


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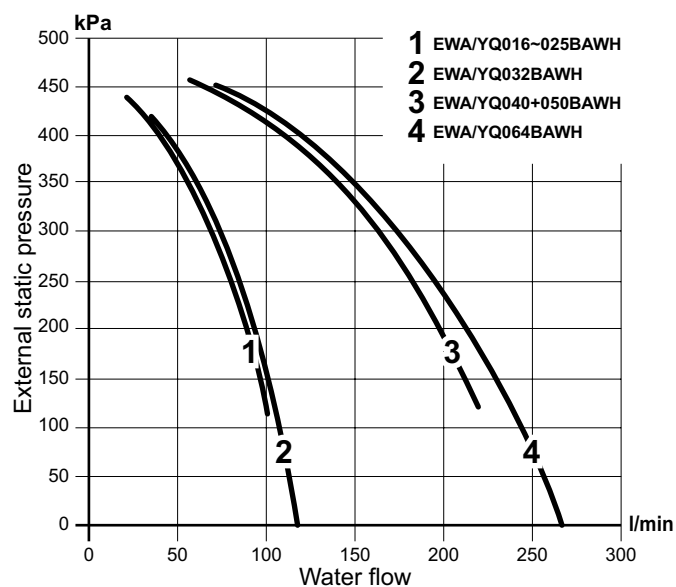


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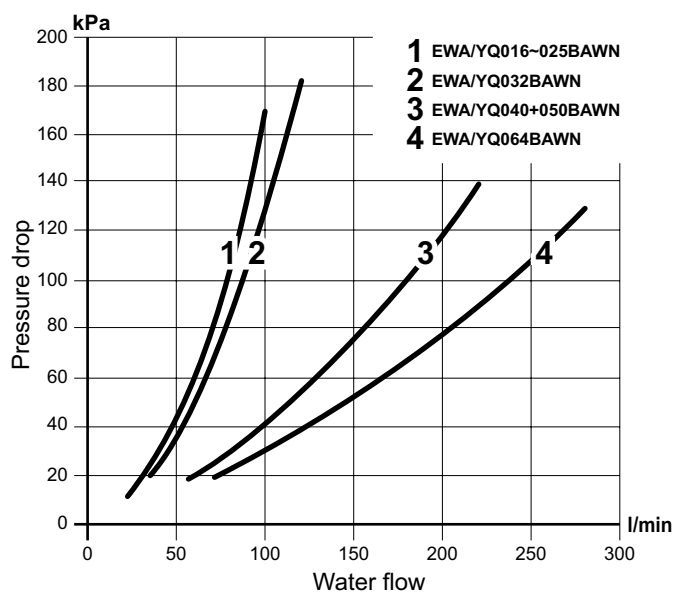




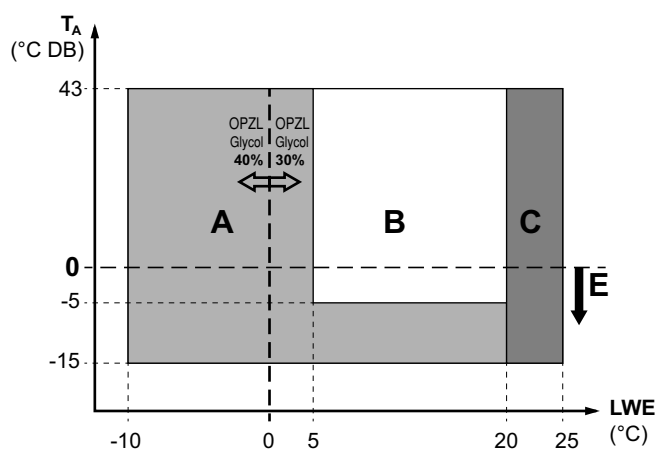
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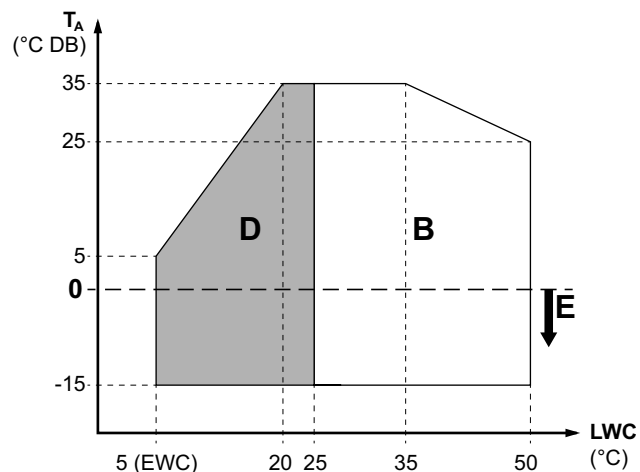
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Thank you for purchasing this unit.

The original instructions are written in English. All other languages are translations of the original instructions.



**CAREFULLY READ THESE INSTRUCTIONS BEFORE OPERATING THE UNIT. THEY WILL TELL YOU HOW TO USE THE UNIT PROPERLY. KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.**



# INSTALLATION MANUAL

## 1. INTRODUCTION

### 1.1. About air to water chiller

Air to water chillers provide cold (and hot (only for EWYQ)) water for a large variety of applications such as for airconditioning of buildings (for this application the units can be combined with Daikin fan coil units or air handling units) but also for the cooling and heating of industrial processes.

In cooling mode, the heat returned from the application is discharged to the air. In heating mode, the heat to be added to the application is retrieved from the air.

The main components are

- the compressor,
- the air heat exchanger,
- the water heat exchanger.

The compressor circulates refrigerant into the heat exchangers.

- In cooling mode, the refrigerant transports the heat taken from the water heat exchanger to the air heat exchanger where the heat is released to the air.
- In heating mode, the refrigerant transports the heat taken from the air heat exchanger to the water heat exchanger where the heat is released to the water.

### 1.2. About this air to water chiller

EW	A	Q	016	BA	W	P	—H—
EW	Chiller						
A	A = Air to water cooling only model Y = Air to water heat pump model						
Q	Refrigerant R410A						
016	Indication of cooling capacity (kW) For exact values, refer to "6.1. Technical specifications" on page 24						
BA	Series						
W	Voltage: 3P, 400 V						
P	P/H = Complete hydraulic package N = Basic hydraulic package						
—H—	Depend on option						

The units are designed for outdoor installation (cooling: -15°C to 43°C, heating: -15°C to 35°C) (for details see technical data book). The units are available in 7 standard sizes with capacities ranging from 16.8 to 63 kW. All sizes are available as cooling only unit and as heat pump unit (cooling/heating).

### 1.3. About this document

This document is an installation manual. It is intended for the installer of this product. It describes the procedures for installing, commissioning and maintaining the unit, and it will provide help if problems occur. Carefully read the relevant parts of the manual. This document is also an operation manual. It is intended for the installer and the user of this product. It describes how to operate and maintain the unit, and it will provide help if problems occur. Carefully read the relevant parts of the manual.

### How to get the manual?

- A printed version of the manual is delivered with the unit.
- Contact your local dealer for an electronic version of the manual.

For detailed instructions about how to install and operate the associated products and/or optional equipment, refer to the relevant catalogues, technical literature or product manuals for those products.

### 1.4. Meaning of warnings and symbols

Warnings in this manual are classified according to their severity and probability of occurrence.



#### DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



#### WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



#### CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



#### NOTICE

Indicates situations that may result in equipment or property-damage accidents only.



#### INFORMATION

This symbol identifies useful tips or additional information.

Some types of danger are represented by special symbols:



Electric current.



Danger of burning and scalding.

### 1.5. Meaning of used terms

#### Installation manual:

Instruction manual specified for a certain product or application, explaining how to install, configure and maintain it.

#### Operation manual:

Instruction manual specified for a certain product or application, explaining how to operate it.

#### Maintenance instructions:

Instruction manual specified for a certain product or application, which explains (if relevant) how to install, configure, operate and/or maintain the product or application.

#### Dealer:

Sales distributor for products as per the subject of this manual.

#### Installer:

Technical skilled person who is qualified to install products as per the subject of this manual.

#### User:

Person who is owner of the product and/or operates the product.

#### Service company:

Qualified company which can perform or coordinate the required service to the unit.



### Applicable legislation:

All international, European, national and local directives, laws, regulations and/or codes which are relevant and applicable for a certain product or domain.

### Accessories:

Equipment which is delivered with the unit and which needs to be installed according to instructions in the documentation.

### Optional equipment:

Equipment which can optionally be combined to the products as per the subject of this manual.

### Field supply:

Equipment which needs to be installed according to instructions in this manual, but which are not supplied by Daikin.

## 2. PRECAUTIONS FOR INSTALLATION

All instructions described in this manual shall be carried out by a licensed installer.

Install the unit according to the instructions in the included documentation and the manuals of the additional equipment (e.g. controller). Improper installation could result in electric shock, short-circuit, leaks, fire or other damage to the equipment.

Be sure to wear adequate personal protection equipment (protection gloves, safety glasses) when performing installation, maintenance or service to the unit.

If not sure of installation procedures or operation of the unit, always contact your local dealer for advice and information.



### DANGER: ELECTRICAL SHOCK

Switch off all power supply before removing the switch box cover or before making any connections or touching electrical parts.

To avoid electric shock, be sure to disconnect the power supply 1 minute or more before servicing the electrical parts. Even after 1 minute, always measure the voltage at the terminals of main circuit capacitors or electrical parts and, before touching, be sure that those voltages are less than 50 V DC.



### DANGER: HIGH TEMPERATURE

Do not touch the water piping or internal parts during and immediately after operation. The piping and internal parts may be hot or cold depending on the working condition of the unit.

Your hand may get burned or frostbitten if you touch the piping or internal parts. To avoid injury, give the piping and internal parts time to return to normal temperature or, if you must touch them, be sure to wear adequate protective gloves.



### CAUTION

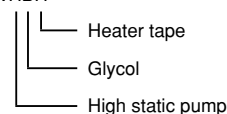
For use of units in applications with temperature alarm settings it is advised to foresee a delay of 10 to 15 minutes for signalling the alarm in case the alarm temperature is exceeded. The unit may stop for several minutes during normal operation for "defrosting of the unit" or when in "thermostat-stop" operation.

## 3. PREPARE THE INSTALLATION OF THE AIR TO WATER CHILLER

### 3.1. Check that you have all optional equipment

Factory mounted options	Descriptions
Hydraulic package (N)	N (standard) contains flow switch, filter, shut-off valves, pressure ports, drain/fill valve.
Hydraulic package (P)	Identical to N plus pump, expansion vessel, safety valve, pressure gauge.
High static pump (H)	Identical to P but allows operation in applications with high pressure drops inside the hydraulic system.
Water piping heater tape (—H—)	The water piping heater tape warms up to prevent freezing of water inside the unit during winter while the unit is at stand still.
Low temperature cooling (B— —)	Allows to cool liquid (water + glycol) down to -10°C.

Example EWYQ016BAWHBH—



Optional kits	Descriptions
Remote controller (EKRUHTB)	A second remote controller to control the unit from 2 locations.
Input PCB (EKRP1AHTA )	In order to remotely • switch the unit on/off, • select cooling/heating, • select thermo on/off.
Electronic gauge kit (BHGP26A1)	To monitor pressures in the refrigerant system.
External control adaptor (DTA104A62)	To execute demand control and low noise control by external signals.

### 3.2. Verify the appropriate installation location



### WARNING

Be sure to take adequate measures in order to prevent that the unit is used as a shelter by small animals.

Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean and clear.

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.



### CAUTION

Appliance not accessible to the general public, install it in a secured area, protected from easy access.

This unit is suitable for installation in a commercial and light industrial environment.



### 3.2.1. General precautions on installation location

Select an installation site that meets the following requirements:

- The foundation must be strong enough to support the weight of the unit. The floor must be flat to prevent vibrations and noise generation and to have sufficient stability.
- The space around the unit is adequate for maintenance and servicing (refer to "3.4. Service space" on page 4).
- The space around the unit allows sufficient air circulation.
- There is no danger of fire due to leakage of inflammable gas.
- The equipment is not intended for use in a potentially explosive atmosphere.
- Select the location of the unit in such a way that the sound generated by the unit does not disturb anyone, and the location is selected according to the applicable legislation.
- Take minimum and maximum water volumes and installation heights into account, refer to "4.5. Perform the water piping work" on page 10.
- Take care that in the event of a water leak, water cannot cause any damage to the installation space and surroundings.
  - Do not install in the following locations.
    - Locations where sulphurous acids and other corrosive gases may be present in the atmosphere.  
Copper piping and soldered joints may corrode, causing refrigerant to leak.
    - Locations where a mineral oil mist, spray or vapour may be present in the atmosphere.  
Plastic parts may deteriorate and fall off or cause water leakage.
    - Locations where equipment that produces electromagnetic waves is found.  
The electromagnetic waves may cause the control system to malfunction, preventing normal operation.
    - Locations where flammable gases may leak, where thinner, gasoline and other volatile substances are handled, or where carbon dust and other incendiary substances are found in the atmosphere.  
Leaked gas may accumulate around the unit, causing an explosion.
  - When installing, take strong winds, typhoons or earthquakes into account.  
Improper installation may result in the unit turning over.

### 3.2.2. Weather dependent precautions

- Select a place where rain can be avoided as much as possible.
- Be sure that the air inlet of the unit is not positioned towards the main wind direction. Frontal wind will disturb the operation of the unit. If necessary, use a screen to block the wind.
- Ensure that water cannot cause any damage to the location by adding water drains to the foundation and prevent water traps in the construction.
- Do not install the unit in areas where the air contains high levels of salt such as that near the ocean.

### 3.2.3. Selecting a location in cold climates



#### INFORMATION

When operating the unit in a low outdoor ambient temperature, be sure to follow the instructions described below.

- To prevent exposure to wind and snow, install a baffle plate on the air side of the outdoor unit:
- In heavy snowfall areas it is very important to select an installation site where the snow will not affect the unit. If lateral snowfall is possible, make sure that the heat exchanger coil is not affected by the snow (if necessary construct a lateral canopy). Refer to figure 1.
  - 1 Construct a lateral canopy.  
Make sure that the air blowing out of the unit is not obstructed.
  - 2 Baffle plate
  - 3 Construct a pedestal.  
Install the unit high enough off the ground to prevent burying in snow.

### 3.3. Dimensions of outdoor unit

Refer to figure 6.

- 1 Pitch of foundation bolt holes  
(15x22.5 oblong holes)

### 3.4. Service space

The space around the unit is adequate for servicing and the minimum space for air inlet and air outlet is available. (Refer to the figure below and choose one of the possibilities). Refer to figure 2.

- 1 Distance from wall (or other unit) in regions without heavy snowfall
- 2 Distance from wall (or other unit) in regions with heavy snowfall
- ➡ Suction side

The installation space required on this drawing is for full load heating operation without considering possible ice accumulation.

If the location of the installation is in a region with heavy snowfall, then dimensions **a** and **b** should be >500 mm to avoid accumulation of ice in between the units.

### 3.5. Prepare the water piping work

The units have a water inlet and water outlet for connection to a water circuit. This circuit must be provided by a licensed technician and must comply with all applicable legislations.



#### NOTICE

The unit is only to be used in a closed water system. Application in an open water circuit can lead to excessive corrosion of the water piping.

Before continuing the installation of the unit, beware of the following points:

- Two shut-off valves are delivered with the unit. To facilitate service and maintenance, install as shown in "4.5.2. Installing the shut-off valve kit" on page 10.
- Drain taps must be provided at all low points of the system to permit complete drainage of the circuit. A drain valve is provided inside the unit.
- Air purges must be provided at all high points of the system. The vents should be located at points which are easily accessible for servicing. An automatic air purge is provided inside the unit. Check that this air purge valve is not tightened too much so that automatic release of air in the water circuit remains possible. Refer to the "[E-04] Pump only operation (air purge function)" on page 21.



- Take care that the components installed in the field piping can withstand the water pressure (maximum 3 bar + static pressure of the pump).
  - For units with a standard pump installed (EWA/YQ\*BAWP), refer to figure 15  
External static pressure= External static pressure  
Water flow= Water flow
  - For units with an optional high static pump installed (EWA/YQ\*BAWH), refer to figure 16  
External static pressure= External static pressure  
Water flow= Water flow
  - For units without pump (EWA/YQ\*BAWN), refer to figure 17  
Pressure drop= Pressure drop  
Water flow= Water flow



#### WARNING

- For correct operation of the system, a regulating valve must be installed in the water system. The regulating valve is to be used to regulate the water flow in the system (field supply).
- Selecting a flow outside the curves can cause malfunction or damage to the unit. Also refer to the table "Technical specifications" on page 24.

- The maximum waterpiping temperature is 50°C according to safety device setting.
- Always use materials which are compatible with the water used in the system and with the materials used in the unit.  
(The unit piping fittings are made of brass, the plate heat exchangers are made of stainless steel 316 plates brazed together with copper and the optional pump housing is made of cast iron.)
- Select piping diameter in relation to required water flow and available external static pressure (ESP) of the pump.  
The recommended water piping diameter is:
  - for units 016~032: 1-1/4"
  - for units 040~064: 2"
- The minimum required water flow for the unit operation is shown in the following table.

EWA/YQ016 ~ 025	= 21 l/min
EWA/YQ032	= 32 l/min
EWA/YQ040 + 050	= 42 l/min
EWA/YQ064	= 64 l/min

When the water flow is lower than this minimum value, eventually flow error R5 will be displayed and the operation of the unit will be stopped.



#### NOTICE

It is strongly recommended to install an additional filter on the water circuit. Especially to remove metallic particles from the field water piping, it is advised to use a magnetic or cyclone filter which can remove small particles. Small particles can damage the unit and will not be removed by the standard filter of the unit.

### 3.6. Prepare the electrical wiring work



#### WARNING: Electrical installation

All field wiring and components must be installed by an installer and must comply with the applicable legislation



#### DANGER: ELECTRICAL SHOCK

See "2. Precautions for installation" on page 3.



#### WARNING

- A main switch or other means for disconnection, having a contact separation in all poles, must be incorporated in the fixed wiring in accordance with the applicable legislation.
- Use only copper wires.
- All field wiring must be carried out in accordance with the wiring diagram supplied with the unit and the instructions given below.
- Never squeeze bundled cables and be sure that it does not come in contact with the non-insulated piping and sharp edges. Be sure no external pressure is applied to the terminal connections.
- Power supply wires must be attached securely.
- If the power supply has a missing or wrong N-phase, equipment will break down.
- Be sure to establish an earth. Do not earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earth may cause electrical shock.
- Be sure to install an earth leakage protector in accordance with the applicable legislation. Failure to do so may cause electric shock or fire.
- Be sure to use a dedicated power circuit, never use a power supply shared by another appliance.
- When installing the earth leakage protector, be sure that it is compatible with the inverter (resistant to high frequency electric noise) to avoid unnecessary opening of the earth leakage protector.
- As this unit is equipped with an inverter, installing a phase advancing capacitor not only will deteriorate power factor improvement effect, but also may cause a capacitor abnormal heating accident due to high-frequency waves. Therefore, never install a phase advancing capacitor.
- Be sure to install the required fuses or circuit breakers.
- When using residual current operated circuit breakers, be sure to use a high-speed type 300 mA rated residual operating current circuit breaker.
- Never remove a thermistor, sensor, etc., when connecting power wiring and transmission wiring.  
(If operated without thermistor, sensor, etc., the compressor may break down.)
- The reversed phase protection detector is designed to stop the product in the event of an abnormality when the product is started up. Reversed phase detection is not performed consequently during normal operation of the product.
- If reverse-phase detection occurs replace 2 of the 3 phases (L1, L2, and L3). (Refer to "5.5.2. Error codes" on page 23).
- If there exists the possibility of reversed phase after a momentary black out and the power goes on and off while the product is operating, attach a reversed phase protection circuit locally. Running the product in reversed phase can break the compressor and other parts.



## Point of attention regarding quality of the public electric power supply.

This equipment complies with respectively:

- EN/IEC 61000-3-11<sup>(1)</sup> provided that the system impedance  $Z_{\text{sys}}$  is less than or equal to  $Z_{\text{max}}$ .
- EN/IEC 61000-3-12<sup>(2)</sup> provided that the short-circuit power  $S_{\text{sc}}$  is greater than or equal to the minimum  $S_{\text{sc}}$  value

at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with respectively:

- $Z_{\text{sys}}$  less than or equal to  $Z_{\text{max}}$
- $S_{\text{sc}}$  greater than or equal to the minimum  $S_{\text{sc}}$  value.

	$Z_{\text{max}}$ ( $\Omega$ )	Minimum $S_{\text{sc}}$ value (kVA)
EWA/YQ016	—	1016
EWA/YQ021	0.27	820
EWA/YQ025	0.27	821
EWA/YQ032	0.24	874
EWA/YQ040	0.25	1639
EWA/YQ050	0.25	1630
EWA/YQ064	0.22	1747

For cable selection refer to "4.6.5. Connection of the unit power supply and communication cable(s)" on page 13.

For the recommended fuses refer to the technical data book.

## 4. INSTALL THE CHILLER



### 4.1. Unpack the unit

#### 4.1.1. Inspection

At delivery, the unit must be checked and any damage must be reported immediately to the carrier's claims agent.

#### 4.1.2. Handling

When handling the unit, take into account the following:

- 1  Fragile, handle the unit with care  
 Keep the unit upright in order to avoid compressor damage.
- 2 Choose on beforehand the path along which the unit is to be brought in.
- 3 Bring the unit as close as possible to its final installation position in its original package to prevent damage during transport. Refer to figure 4.
  - 1 Packaging material
  - 2 Belt sling
  - 3 Protector
  - 4 Opening
  - 5 Forklift

- 4 Lift the unit preferably with a crane and 2 belts of at least 8 m long as shown in the figure above.

Always use protectors to prevent belt damage and pay attention to the position of the unit's centre of gravity.



#### CAUTION

Use a belt sling that adequately bears the weight of the unit.

A forklift can only be used for transport as long as the unit remains on its pallet as shown above.

### 4.1.3. Unpacking



#### CAUTION

To avoid injury, do not touch the air inlet or aluminium fins of the unit.

- Remove the packing material from the unit:
  - Take care not to damage the unit when removing the shrink foil with a cutter.



#### WARNING

Tear apart and throw away plastic packaging bags so that children will not play with them. Children playing with plastic bags face danger of death by suffocation.

- Remove the top palette(s) and cardboard plate(s) before removing the upright cardboard protection pieces. Refer to figure 3.
- Remove the screws fixing the unit to its pallet.

### 4.2. Install the unit

#### 4.2.1. Place the unit on its final place

- 1 Lift the unit onto its proper foundation. Refer to figure 5.
  - 1 Belt sling
  - 2 Protector
  - 3 Opening
- 2 Lift the unit preferably with a crane and 2 belts of at least 8 m long as shown in the figure above.

Always use protectors to prevent belt damage and pay attention to the position of the unit's centre of gravity.



#### CAUTION

Use a belt sling that adequately bears the weight of the unit.



#### NOTICE

A forklift can not be used!

- Make sure the unit is installed level on a sufficiently strong base to prevent vibration and noise.



#### NOTICE

When the installation height of the unit needs to be increased, do not use stands to only support the corners as shown in figure 7.

- X Not allowed
- O Allowed (units: mm)

- The height of the foundation must at least be 150 mm from the floor.

In heavy snowfall areas, this height should be increased dependant on the installation place and condition.

(1) European/International Technical Standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current  $\leq 75$  A.

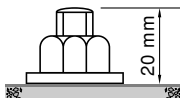
(2) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current  $> 16$  A and  $\leq 75$  A per phase.



- The unit must be installed on a solid longitudinal foundation (steelbeam frame or concrete) and make sure the base under the unit is larger than the grey marked area in figure 9:

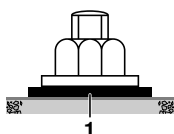
- 1 Hole for foundation bolt
- 2 Inner dimension of the base
- 3 Distance between foundation bolt holes
- 4 Depth of unit
- 5 Outer dimension of the base
- 6 Longitudinal foundation dimension
- 7 Distance between foundation bolt holes

- Fasten the unit in place using foundation bolts M12. It is best to screw in the foundation bolts until their length remains 20 mm above the foundation surface.



#### NOTICE

- Prepare a water drainage channel around the foundation to drain waste water from around the unit. During heating operation and when the outdoor temperatures are negative, the drained water from the unit will freeze up. If the water drainage is not taken care of, the area around the unit might be very slippery.
- When installed in a corrosive environment, use a nut with plastic washer (1) to protect the nut tightening part from rust.

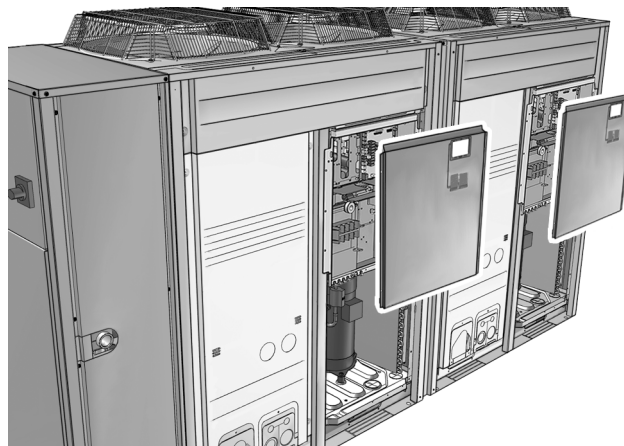


### 4.2.2. Opening the unit

To gain access to the unit, front panels need to be opened as shown in figure 8:

- Panel 1 Gives access to the electrical parts of the hydro module
- Panel 2 Gives access to the hydro module (side panel)
- Panel 3 Gives access to the hydro module (front panel)
- Panel 4 Give access to the outdoor module (left panel)
- Panel 5 Give access to the outdoor module (right panel)

Once the front panels are open, the electrical component box of the outdoor module(s) can be accessed by removing the electrical component box cover as follows:



#### **DANGER: ELECTRICAL SHOCK**

See "2. General safety precautions" on page 25.



#### **DANGER: DO NOT TOUCH PIPING AND INTERNAL PARTS**

See "2. General safety precautions" on page 25.

### 4.3. Check if all accessories are included

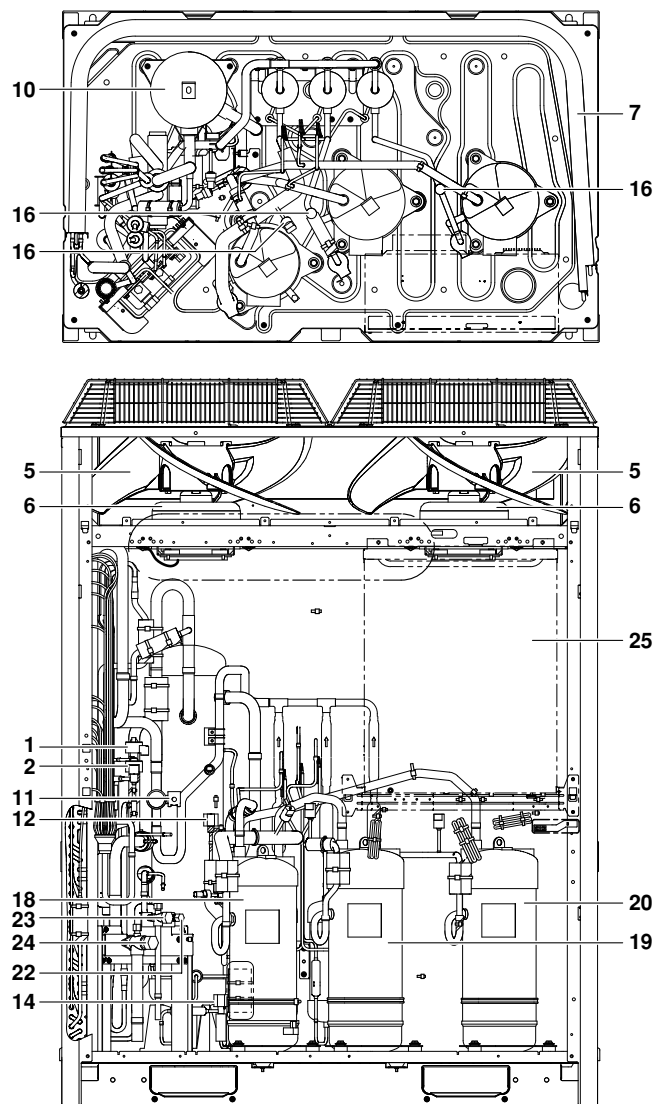
Refer to "4.2.2. Opening the unit" on page 7 how to get access to the accessories. Refer to the table below for reference to where following accessories are supplied with the unit.

<b>Panel 1</b>	Handle main switch	1x
<b>Panel 3</b>	Installation and operation manual	1x
	Addendum BHGP26A1	1x
	Addendum DTA104A62	1x
	Addendum EKRP1AHTA	1x
	Remote controller	1x
	Filter and shut-off valve kit	1x
	Tie wraps	8x



## 4.4. Overview of the unit

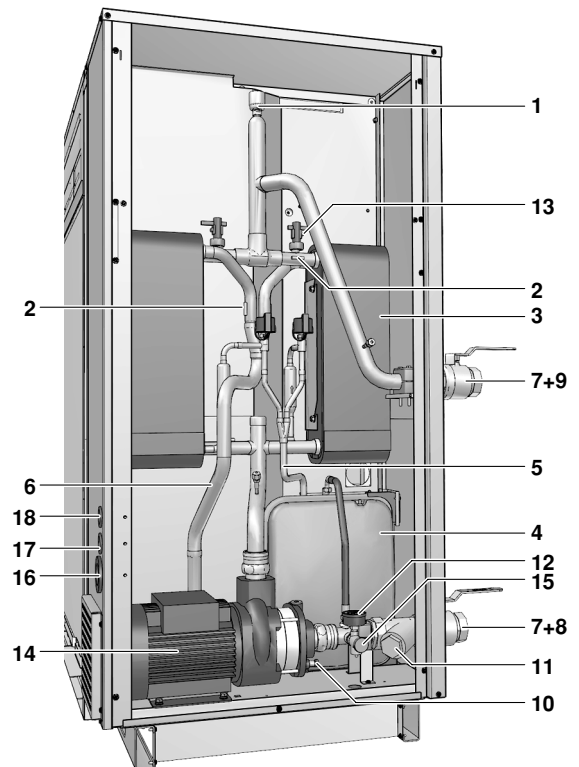
### 4.4.1. Main components of the outdoor module



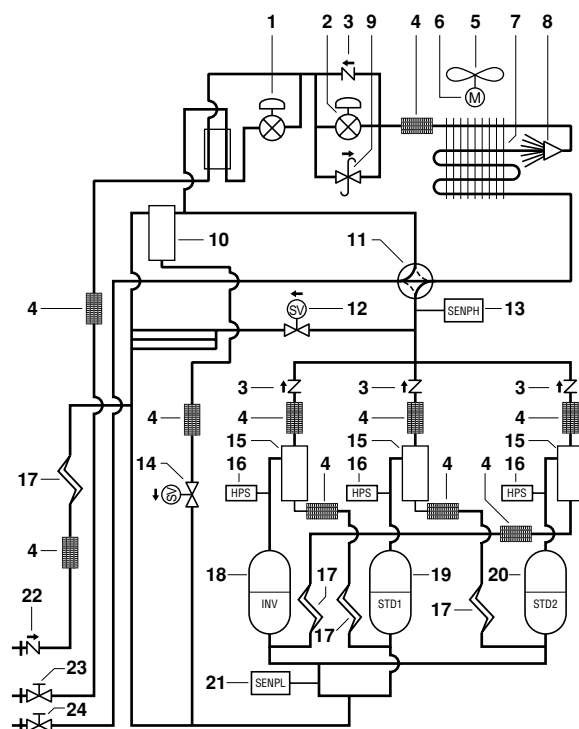
- 1 Electronic expansion valve (subcooling) (Y2E)
- 2 Electronic expansion valve (main) (Y1E)
- 3 Check valve
- 4 Filter
- 5 Fan
- 6 Fan motor (M1F,M2F)
- 7 Heat exchanger
- 8 Distributor
- 9 Pressure regulating valve
- 10 Refrigerant regulator
- 11 4-way valve (heat exchanger)(Y3S)
- 12 Solenoid valve (Y1S)
- 13 High pressure sensor (SENP)
- 14 Solenoid valve (Y2S)
- 15 Oil separator
- 16 High pressure switch
- 17 Capillary tube
- 18 Compressor (INV)
- 19 Compressor (STD1)
- 20 Compressor (STD2)
- 21 Low pressure sensor (SENP)
- 22 Service port (refrigerant charge)
- 23 Stop valve (liquid pipe)
- 24 Stop valve (gas pipe)
- 25 Electrical component box

### 4.4.2. Main components of the hydro module

#### Hydraulic compartment (panel 3)



#### Functional diagram of the outdoor module



1. Air purge valve  
Remaining air in the water circuit will be automatically removed via the air purge valve. (Refer to "[E-04] Pump only operation (air purge function)" on page 21.)
2. Temperature sensors  
Temperature sensors determine the water and refrigerant temperature at various points in the water and refrigerant circuit.
3. Heat exchanger
4. Expansion vessel: 12 l
5. Refrigerant liquid connection
6. Refrigerant gas connection
7. Shut-off valves (field installed)  
The shut-off valves on the water inlet connection and water outlet connection allow isolation of the unit water circuit side from the residential water circuit side. This facilitates draining and filter replacement of the unit.



8. Water inlet connection
9. Water outlet connection
10. Drain and fill valve
11. Water filter

The water filter removes dirt from the water to prevent damage to the pump or blockage of the evaporator. The water filter must be cleaned on a regular base. See "5.5. Service and maintenance" on page 23.

12. Pressure gauge

The pressure gauge allows readout of the water pressure in the water circuit.

13. Flow switch

The flow switch checks the flow in the water circuit and protects the heat exchanger against freezing and the pump against damage.

14. Pump

The pump circulates the water in the water circuit.

15. Pressure relief valve

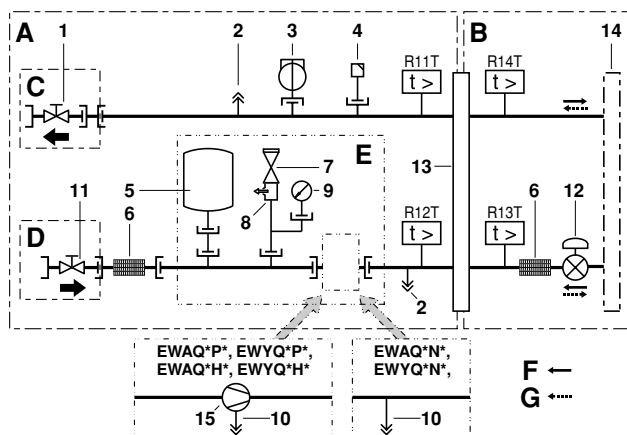
The pressure relief valve prevents excessive water pressure in the water circuit by opening at 3 bar and discharging some water.

16. Entry for power supply (PS)

17. Entry for high voltage wiring (HV)

18. Entry for low voltage wiring (LV)

**Functional diagram of hydraulic compartment (panel 3)**

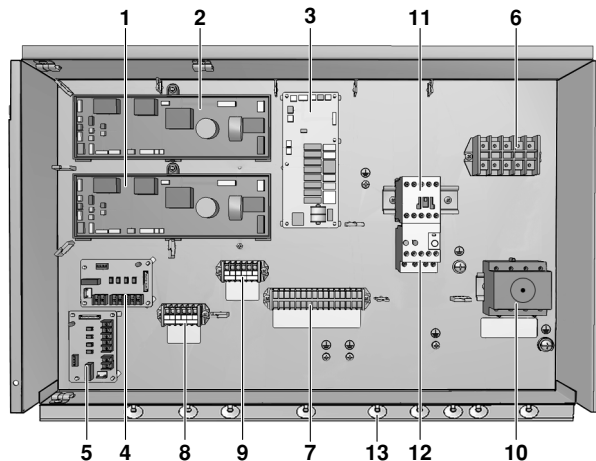


- 1 Shut-off valve water outlet
- 2 Check valve
- 3 Flow switch
- 4 Air purge valve
- 5 Expansion vessel
- 6 Filter
- 7 Safety valve
- 8 Pressure relief valve
- 9 Pressure gauge
- 10 Drain port
- 11 Shut-off valve water inlet
- 12 Electronic expansion valve
- 13 Plate heat exchanger
- 14 Refer to the piping diagram of the outdoor module
- 15 Pump

R11T~R14T Temperature sensors

- A Water side
- B Refrigerant side
- C Water outlet (field installation)
- D Water inlet (field installation)
- E Only for P-models
- F Refrigerant flow in cooling mode
- G Refrigerant flow in heating mode

**Switch box of the hydraulic compartment (panel 1)**



1. Main PCB (master)  
The master main PCB (Printed Circuit Board) controls the functioning of the unit.
2. Main PCB (slave)  
(Only for EWAQ040~064\* and EWYQ040~064\* units.)
3. Control PCB
4. Input PCB (optional)
5. Input PCB (optional)  
(Only for EWAQ040~064\* and EWYQ040~064\* units.)
6. Terminal block X1M
7. Terminal block X2M  
Field wiring terminal block for high voltage connection.
8. Terminal block X3M  
Field wiring terminal block for low voltage connection.
9. Terminal block X4M
10. Main switch  
Allows connection of field wiring for power supply.
11. Pump relay K1P  
(Only for EWAQ\*BAW(P/H)\* and EWYQ\*BAW(P/H)\* units.)
12. Overcurrent relay for pump K1S  
The overcurrent relay protects the pump motor in case of overload, phase failure or too low voltage. The relay is factory set and may not be adjusted. When activated, the overcurrent relay has to be reset in the switch box and the controller needs to be reset manually.  
(Only for EWAQ\*BAW(P/H)\* and EWYQ\*BAW(P/H)\* units.)
13. Cable tie mountings  
The cable tie mountings allow to fix the field wiring with cable ties to the switch box to ensure strain relief.



**NOTICE**

The electrical wiring diagram can be found on the inside of the switch box cover.



## 4.5. Perform the water piping work

### 4.5.1. Connecting the water pipes

Water connections must be made in accordance with all applicable legislations and the outlook drawing delivered with the unit, respecting the water in- and outlet.

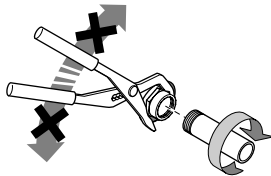


#### NOTICE

Be careful not to deform the unit piping by using excessive force when connecting the piping.

If dirt gets in the water circuit, problems may occur. Therefore, always take into account the following when connecting the water circuit:

- Use clean pipes only.
- Hold the pipe end downwards when removing burrs.
- Cover the pipe end when inserting it through a wall so that no dust and dirt enter.
- Use a good thread sealant for the sealing of the connections. The sealing must be able to withstand the pressures and temperatures of the system, it must also be resistant to the used glycol in the water.
- When using non-brass metallic piping, make sure to insulate both materials from each other to prevent galvanic corrosion.
- Make sure to provide a proper drain for the pressure relief valve.
- Because brass is a soft material, use appropriate tooling for connecting the water circuit. Inappropriate tooling will cause damage to the pipes.
- For correct operation of the system, a regulating valve must be installed in the water system. The regulating valve is to be used to regulate the water flow in the system (field supply).



#### NOTICE

- The unit is only to be used in a closed water system. Application in an open water circuit can lead to excessive corrosion of the water piping.
- Never use Zn-coated parts in the water circuit. Excessive corrosion of these parts may occur as copper piping is used in the unit's internal water circuit.

### 4.5.2. Installing the shut-off valve kit

Refer to figure 12.

- 1 Adapter piece
- 2 Shut-off valve

### 4.5.3. Insulating the water pipes

The complete water circuit, inclusive all piping, must be insulated to prevent condensation during cooling operation and reduction of the heating and cooling capacity as well as prevention of freezing of the outside water piping during winter time. The thickness of the sealing materials must be at least 13 mm with  $\lambda=0.039 \text{ W/mK}$  in order to prevent freezing of the outside water piping at ambient temperature of  $-15^\circ\text{C}$ .

If the temperature is higher than  $30^\circ\text{C}$  and the humidity is higher than RH 80%, then the thickness of the sealing materials should be at least 20 mm in order to avoid condensation on the surface of the sealing.

### 4.5.4. Check the water volume and expansion vessel pre-pressure

The unit is equipped with an expansion vessel of 12 litre which has a default pre-pressure of 1 bar.

To assure proper operation of the unit, the pre-pressure of the expansion vessel might need to be adjusted and the minimum and maximum water volume must be checked.

- 1 Check that the minimum total water volume in the installation, excluding the internal water volume of the unit, is according to the table.

Minimum total water volume (l)		Minimum total water volume (l)		
EWAQ	Cooling	EWYQ	Cooling	Heating
016	33	016	33	76
021	33	021	33	76
025	33	025	33	76
032	33	032	33	110
040	66	040	66	152
050	66	050	66	152
064	66	064	66	220

Refer to "6.1. Technical specifications" on page 24 to know the internal water volume of the unit.



#### INFORMATION

In most applications this minimum water volume will have a satisfying result.

In critical processes or in rooms with a high heat load though, extra water volume might be required.

- 2 Calculating the pre-pressure of the expansion vessel

The pre-pressure ( $P_g$ ) to be set depends on the maximum installation height difference ( $H$ ) and is calculated as below:  
 $P_g = (H/10 + 0.3) \text{ bar}$

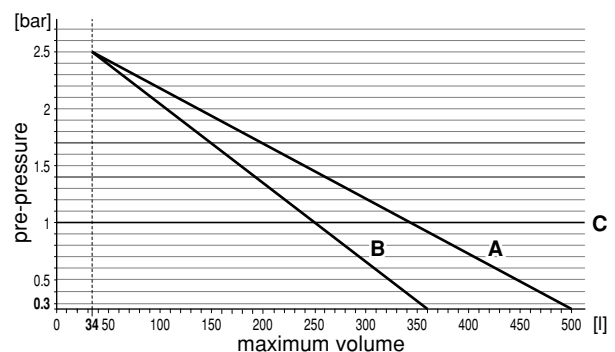
- 3 Checking the maximum allowed water volume

To determine the maximum allowed water volume in the entire circuit, proceed as follows:

- 1 Determine for the calculated pre-pressure ( $P_g$ ) the corresponding maximum water volume using the graph below.

- 2 Check that the total water volume in the entire water circuit is lower than this value.

If this is not the case, the expansion vessel inside the unit is too small for the installation. Solution: Install an additional expansion vessel in the field piping.



pre-pressure = pre-pressure  
maximum volume = maximum volume (water or water + glycol)  
A = system without glycol  
B = system with 20% propylene glycol  
C = Default

(Refer to Caution: "Use of glycol" on page 11)



The default value of pre-pressure (Pg) responds to 7 m height difference.

If the height difference of the system is lower than 7 m AND the volume in the system is less than the maximum allowed value at that pre-pressure (Pg) (see chart above), then NO pre-pressure (Pg) adjustment is required.

#### Example 1

The unit is installed 5 m below the highest point in the water circuit. The total water volume in the water circuit is 250 l.

In this example, no action or adjustment is required.

#### Example 2

The unit is installed at the highest point in the water circuit. The total water volume in the water circuit (no glycol used) is 420 l.

Result:

- Since 420 l is higher than 340 l, the pre-pressure must be decreased (see table above).
- The required pre-pressure is:  
 $P_g = (H/10 + 0.3) \text{ bar} = (0/10 + 0.3) \text{ bar} = 0.3 \text{ bar}$
- The corresponding maximum water volume can be read from the graph: approximately 490 l.
- Since the total water volume (420 l) is below the maximum water volume (490 l), the expansion vessel suffices for the installation.

#### 4 Setting the pre-pressure of the expansion vessel

When it is required to change the default pre-pressure of the expansion vessel (1 bar), keep in mind the following guidelines:

- Use only dry nitrogen to set the expansion vessel pre-pressure.
- Inappropriate setting of the expansion vessel pre-pressure will lead to malfunction of the system. Therefore, the pre-pressure should only be adjusted by an installer.

### 4.5.5. Protecting the water circuit against freezing

Frost can cause damage to the hydraulic system. As this unit is installed outdoors and thus the hydraulic system is exposed to freezing temperatures, care must be taken to prevent freezing of the system.

#### Optional water piping heater tape

Refer to "3.1. Check that you have all optional equipment" on page 3.

All hydraulic parts are insulated to reduce heat loss. Insulation must be foreseen on the field piping.

A heater tape is wound around the piping to protect vital parts of the hydraulic system inside the unit.

This heater tape will only protect internal parts of the unit. It can not protect field installed parts outside the unit.

Field heater tape must be foreseen by the installer.



#### NOTICE

However in case of power failure, above mentioned option can not protect the unit from freezing.

If power failure can happen at times the unit is unattended or if you did not select this option, Daikin recommends adding glycol to the water system.

### Use of glycol

Refer to "[8-04] Freeze-up prevention" on page 21.

Depending on the expected lowest outdoor temperature, make sure the water system is filled with a weight concentration of glycol as mentioned in the table below.

Minimum outdoor temperature	Glycol <sup>(a)</sup>
-5°C	10%
-10°C	15%
-15°C	20%

(a) See "[A-04] Glycol concentration setting" on page 21 for special settings when using ethylene glycol.



#### WARNING

**ETHYLENE GLYCOL IS TOXIC**



#### INFORMATION

(a) The concentrations mentioned in the table above will not prevent the medium from freezing, but prevent the hydraulics from bursting.



#### CAUTION: Use of glycol

- In case of over-pressure when using glycol, be sure to connect the safety valve to a drain pan in order to recover the glycol.  
Connecting a drain pipe is not required if no glycol is used. The discharged water is then drained via the bottom of the unit.
- Using more than 40% glycol will damage the unit.



#### NOTICE

##### Corrosion of the system due to presence of glycol

Uninhibited glycol will turn acidic under the influence of oxygen. This process is accelerated by presence of copper and at higher temperatures. The acidic uninhibited glycol attacks metal surfaces and forms galvanic corrosion cells that cause severe damage to the system.

It is therefore of extreme importance:

- that the water treatment is correctly executed by a qualified water specialist;
- that a glycol with corrosion inhibitors is selected to counteract acids formed by the oxidation of glycols;
- that no automotive glycol is used because their corrosion inhibitors have a limited lifetime and contain silicates which can foul or plug the system;
- that galvanized piping is not used in glycol systems since its presence may lead to the precipitation of certain components in the glycol's corrosion inhibitor;
- that it has to be made sure the glycol is compatible with the used materials in the system.



#### INFORMATION

Be aware of the hygroscopic property of glycol: it absorbs moisture from its environment.

Leaving the cap off the glycol container causes the concentration of water to increase. The glycol concentration is then lower than assumed. And in consequence, freezing can happen after all.

**Preventive actions must be taken to ensure minimal exposure of the glycol to air.**

Also refer to "5.3. Final check and test run" on page 22.



#### 4.5.6. Fill the water circuit

- 1 Connect the water supply to the drain and fill valve (see "4.4.2. Main components of the hydro module" on page 8).
- 2 Make sure the automatic air purge valve is open (at least 2 turns).
- 3 Fill with water until the pressure gauge indicates a pressure of approximately 2.0 bar. Remove air in the circuit as much as possible using the air purge valves (refer to "[E-04] Pump only operation (air purge function)" on page 21).



##### INFORMATION

- During filling, it might not be possible to remove all air in the system. Remaining air will be removed through the automatic air purge valves during first operating hours of the system. Additional filling with water afterwards might be required.
- The water pressure indicated on the pressure gauge will vary depending on the water temperature (higher pressure at higher water temperature). However, at all times water pressure should remain above 1 bar to avoid air entering the circuit.
- The unit might dispose some excessive water through the pressure relief valve.
- Water quality must be according to EU directive 98/83 EC.



##### NOTICE

If no glycol is in the system in case of a power supply failure or pump operating failure, drain the system. When water is at standstill inside the system, freezing is very likely to happen and damaging the system in the process.

#### 4.6. Connect the electrical wiring



##### WARNING

Switch off the power supply before making any connections.

##### 4.6.1. Internal wiring – Parts table – Outdoor module

Refer to the wiring diagram sticker on the outdoor module. The abbreviations used are listed below:

A1P~A8P	Printed circuit board (main, sub 1, sub 2, noise filter, inverter, fan, current sensor)
BS1~BS5	Push button switch (mode, set, return, test, reset)
C1,C63,C66	Capacitor
E1HC,E2HC	Crankcase heater
F1U	Fuse (DC 650 V, 8 A)
F1U	Fuse (T, 3.15 A, 250 V)
F1U,F2U	Fuse (T, 3.15 A, 250 V)
F5U	Field fuse (field supply)
F400U	Fuse (T, 6.3 A, 250 V)
H1P~H8P	Pilot lamp
H2P	Under preparation or in test operation when blinking
H2P	Malfunction detection when light up
HAP	Pilot lamp (service monitor - green)
K1,K3	Magnetic relay
K1R	Magnetic relay (K2M, Y4S)
K2,K4	Magnetic contactor (M1C)
K2R	Magnetic relay (Y5S)
K3R	Magnetic relay (Y1S)
K4R	Magnetic relay (Y8S)
K5R	Magnetic relay (Y2S)
K5R	Magnetic relay (for option)
K6R	Magnetic relay (Y7S)

K7R,K8R	Magnetic relay (E1HC, E2HC)
K11R	Magnetic relay (Y3S)
L1R	Reactor
M1C,M2C	Motor (compressor)
M1F,M2F	Motor (fan)
PS	Switching power supply
Q1DI	Earth leakage protector (field supply)
Q1RP	Phase reversal detection circuit
R1T	Thermistor (air, fin)
R2T~R15T	Thermistor (H/E gas 1, H/E de-icer 1, sub cool H/E gas 1, sub cool H/E liquid, H/E liquid 1, suction 1, liquid 1, suction 2, H/E gas 2, H/E de-icer 2, sub cool H/E gas 2, liquid 2, H/E liquid 2)
R10	Resistor (current sensor)
R31T,R32T	Thermistor (discharge) (M1C,M2C)
R50,R59	Resistor
R90	Resistor (current sensor)
R95	Resistor (current limiting)
S1NPH	Pressure sensor (high)
S1NPL	Pressure sensor (low)
S1PH~S3PH	Pressure switch (high)
SD1	Safety devices input
T1A	Current sensor
V1R	Diode bridge
V1R,V2R	Power module
X1A~X9A	Connector
X1M	Terminal strip (power supply)
X1M	Terminal strip (control)
Y1E~Y5E	Electronic expansion valve (main 1, sub cool 1, main 2, charge, sub cool 2)
Y1S~Y10S	Solenoid valve (RMTG, 4 way valve–H/E gas 1, RMTL, hot gas, EV bypass 1, RMTT, RMTO, 4 way valve–H/E gas 2, EV bypass 2)
Z1C~Z10C	Noise filter (ferrite core)
Z1F	Noise filter (with surge absorber)
L1,L2,L3	Live
N	Neutral
■ ■ ■ ■	Field wiring
□ □ □ □	Terminal strip
□ □	Connector
○	Terminal
⊕	Protective earth (screw)
BLK	Black
BLU	Blue
BRN	Brown
GRN	Green
GRY	Grey
ORG	Orange
PNK	Pink
RED	Red
WHT	White
YLW	Yellow



##### INFORMATION

The wiring diagram on the outdoor module is only for the outdoor module.

For the hydro module or optional electrical components, refer to the wiring diagram of the hydro module.



#### 4.6.2. Internal wiring – Parts table – Hydro module

Refer to the wiring diagram sticker on the hydro module front panel 1 (refer to "4.2.2. Opening the unit" on page 7). The abbreviations used are listed below:

A1P	Main PCB (master)
A2P	remote controller PCB
A3P	Control PCB
A4P	Demand PCB (optional)
A5P	Main PCB (slave)
A6P	Demand PCB (optional)
A7P	Remote controller PCB (optional)
C1~C3	Filter capacitor
E1H	Switch box heater
E2H	Plate heat exchanger heater (PHE1)
E3H	Plate heat exchanger heater (PHE2)
E4H	Water piping heater
E5H	Expansion vessel heater
F1,F2	Fuse (F, 5 A, 250 V)
F1U (A*P)	Fuse (T, 3.15 A, 250 V)
HAP	PCB LED
K11E	Electronic expansion valve (PHE1)
K21E	Electronic expansion valve (PHE2)
K1P	Pump contactor
K1S	Pump overcurrent relay
K*R (A3P)	PCB relay
M1P	Pump
PS (A*P)	Switching power supply
Q1DI	Earth leakage circuit breaker (field supply)
Q1T	Thermostat for expansion vessel heater
R11T	Leaving water thermistor (PHE1)
R12T	Returning water thermistor (PHE1)
R13T	Refrigerant liquid thermistor (PHE1)
R14T	Refrigerant gas thermistor (PHE1)
R21T	Leaving water thermistor (PHE2)
R22T	Returning water thermistor (PHE2)
R23T	Refrigerant liquid thermistor (PHE2)
R24T	Refrigerant gas thermistor (PHE2)
S1F	Flow switch (PHE1)
S2F	Flow switch (PHE2)
S1M	Main switch
S1S	Thermostat ON/OFF input (field supply)
S2S	Thermostat cooling/heating selection (field supply)
S3S	Operation ON input (field supply)
S4S	Operation OFF input (field supply)
SS1 (A1P,A5P)	Selector switch (emergency)
SS1 (A2P)	Selector switch (master/slave)
SS1 (A7P)	Selector switch (master/slave) (optional)
V1C,V2C	Ferrite core noise filter
X1M~X4M	Terminal strip
X801M (A*P)	PCB terminal strip (optional)
Z1F,Z2F (A*P)	Noise filter

#### 4.6.3. Installing the main switch handle

Open panel 1 (refer to "4.2.2. Opening the unit" on page 7) and mount the main switch handle parts as shown below. The handle of the main switch is mounted on panel 1.

- For EWA/YQ016~032 refer to figure 10.  
A Panel 1 (refer to "4.2.2. Opening the unit" on page 7)
- For EWA/YQ040~064 refer to figure 14.  
A Panel 1 (refer to "4.2.2. Opening the unit" on page 7)



#### NOTICE

When the main switch is in OFF position, it is possible to lock the main switch using a suitable padlock.

Refer to figure 13.

Keep in mind that in this case the padlock needs to be opened and removed before it is possible to turn the main switch to the ON position.

#### 4.6.4. System overview of field wiring

Field wiring consists out of power supply (always including earth) and communication (=transmission) wiring.

- Most field wiring on the unit is to be made on the terminal blocks inside the switch boxes. To gain access to the terminal blocks, remove switch box service panel. Refer to the instructions described in "4.2.2. Opening the unit" on page 7 how to remove this panel and gain access to the inside of the switch box.
- Cable tie mountings are provided at the wiring entries of the switch box. See "4.4.2. Main components of the hydro module" on page 8.



#### INFORMATION

- The electrical wiring diagram can be found on the inside of the switch box cover.
- Install the unit, power supply cable and communication cables at least 1 meter away from televisions or radios to prevent image interference or noise.  
(Depending on the radio waves, a distance of 1 meter may not be sufficient to eliminate the noise.)

#### 4.6.5. Connection of the unit power supply and communication cable(s)

The power supply must be protected with the required safety devices, i.e. a main switch, a slow blow fuse on each phase and an earth leakage protector in accordance with the applicable legislation.



#### NOTICE

Selection and sizing of the wiring should be done in accordance with the applicable legislation based on the information mentioned in the table below:

#### Cable requirements

Item	Cable bundle	Description	Required number of conductors	Maximum running current
1	PS	Power supply	4+GND	(b)
2	LV	Standard remote controller (F1/F2)	2	(c)
3	LV	Secondary remote controller (P1/P2) <sup>(a)</sup>	2	(c)
4	LV	Thermostat ON/OFF signal <sup>(a)</sup>	2	(c)
5	LV	Thermostat cooling/heating signal <sup>(a)</sup>	2	(c)
6	LV	Operation ON signal <sup>(a)</sup>	2	(c)
7	LV	Operation OFF signal <sup>(a)</sup>	2	(c)
8	HV	Cooling/heating output	2	0.3 A
9	HV	Operation ON/OFF output	2	0.3 A
10	HV	Error output	2	0.3 A
11	HV	Water piping heater output	2	1 A
12	HV	Pump ON/OFF output	2	0.3 A <sup>(d)</sup>

PS = Power supply (see "4.6.6. Routing" on page 14)

LV = Low voltage (see "4.6.6. Routing" on page 14)

HV = High voltage (see "4.6.6. Routing" on page 14)

(a) Optional

(b) Refer to the nameplate on the unit or to the technical data book.

(c) Minimum cable section 0.75 mm<sup>2</sup>.

(d) Only for models without pump (EWAQ\*BAW(P/H)\* and EWYQ\*BAW(P/H)\* units.)





### CAUTION

Select all cables and wire sizes in accordance with relevant local and national regulations.



### WARNING

After finishing the electric work, confirm that each electric part and terminal inside the electric parts box is connected securely.

### Procedure

- 1 Open the switch box cover.
- 2 Using the appropriate cable, connect the power supply and communication cable(s) to the appropriate terminals as shown on the wiring diagram and according to the figure of chapter "4.6.6. Routing" on page 14.



- To avoid receiving electric noise, be sure that the cables are put in the correct bundle and routed in the correct bundle tray as shown in the figure of chapter "4.6.6. Routing" on page 14.
- When wiring, route the cable bundles that are outside the unit away from each other by at least 25 mm in order to avoid receiving electric noise (external noise).

- 3 Fix the cables with cable ties to the cable tie mountings to ensure strain relief and to make sure that it does not come in contact with the piping and sharp edges. Never squeeze bundled cables.

Note: only relevant field wiring is shown in the figure of chapter "4.6.6. Routing" on page 14.

- 4 Close the switch box cover following the instructions described in "4.2.2. Opening the unit" on page 7 in reverse order.

### 4.6.6. Routing

It is important to keep the power supply and the low voltage wiring separated from each other. In order to avoid any electrical interference the distance between both wirings should always be at least 25 mm.

The wiring should be mounted as shown in figure 11.

PS = Power supply  
 LV = Low voltage  
 HV = High voltage

### 4.6.7. Installation of the remote controller

The unit is equipped with a remote controller offering a user-friendly way to set up, use and maintain the unit. Before operating the controller, follow this installation procedure.

### Wiring specifications

Wire specification	Value
Type	2 wire
Section	0.75~1.25 mm <sup>2</sup>
Maximum length	500 m



### NOTICE

The wiring for connection is not included.

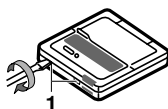
### Procedure



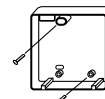
### NOTICE

The remote controller, delivered in a kit, has to be mounted indoors.

- 1 Remove the front part of the remote controller.  
Insert a slotted screwdriver into the slots (1) in the rear part of the remote controller, and remove the front part of the remote controller.



- 2 Fasten the remote controller on a flat surface.



### NOTICE

Be careful not to distort the shape of the lower part of the remote controller by over tightening the mounting screws.

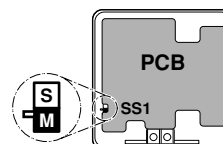
- 3 Wire the unit.



### INFORMATION

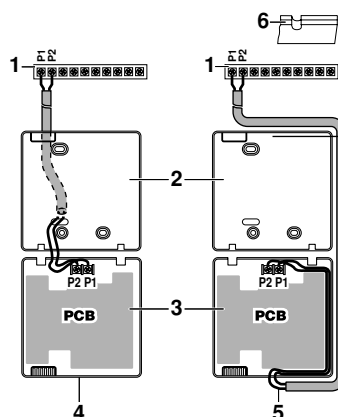
If next to the standard remote controller the optional remote controller is installed as well:

- Connect the electrical wires of both remote controllers in the same way like described below.
- Select a master and a slave remote controller by switching the SS1 selector switch.



S Slave  
 M Master

Only the remote controller set as master can work as room thermostat.



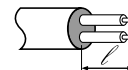
- 1 Unit
- 2 Rear part of the remote controller
- 3 Front part of the remote controller
- 4 Wired from the rear
- 5 Wired from the top
- 6 Use nippers to notch the part for the wiring to pass through

Connect the terminals of the remote controller and the terminals inside the unit (P1 to P1, P2 to P2) as shown in the figure above.



### NOTICE

- When wiring, run the wiring away from the power supply wiring in order to avoid receiving electric noise (external noise).
- Peel the shield for the part that has to pass through the inside of the remote controller case (1).



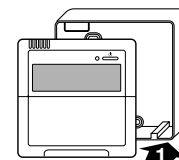
- 4 Reattach the upper part of the remote controller.



### CAUTION

Be careful not to pinch the wiring when attaching.

First begin fitting from the clips at the bottom.

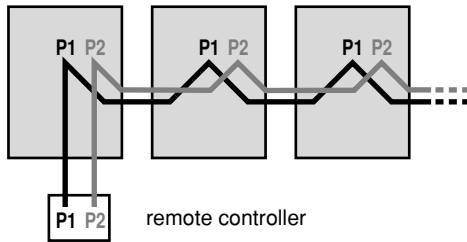






### INFORMATION

For multiple unit control, connect the remote controller to the unit as instructed above. For all other units to be controlled by this controller every next unit has to be connected as shown in the figure below (meaning: make a connection from P1 of the previous unit to P1 of the next unit, and make a connection from P2 of the previous unit to P2 of the next unit, and so on...).



Limitation: 16 PCB's EWA/YQ016~032 counts as 1 PCB  
EWA/YQ040~064 counts as 2 PCB's

## 4.7. Install optional equipment

For the installation of the optional equipment, refer to the installation manual which is delivered with the optional equipment or the addenda delivered with this chiller.

## 5. COMMISSIONING THE CHILLER

### 5.1. Verify completion of installation



#### WARNING

Switch off the power supply before making any connections.

After the installation of the unit, check the following:

- 1 **Field wiring**  
Make sure that the field wiring has been carried out according to the instructions described in the chapter "4.6.5. Connection of the unit power supply and communication cable(s)" on page 13, according to the wiring diagrams and according to European and national regulations.
- 2 **Fuses and protection devices**  
Check that the fuses and other locally installed protection devices are of the size and type specified in the chapter "Electrical specifications" on page 24. Make sure that neither a fuse nor a protection device has been bypassed.
- 3 **Earth wiring**  
Make sure that the earth wires have been connected properly and that the earth terminals are tightened.
- 4 **Internal wiring**  
Visually check the switch box and the inside of the unit on loose connections or damaged electrical components.
- 5 **Installation**  
Check that the unit is properly installed, to avoid abnormal noises and vibrations when starting up the unit.
- 6 **Damaged equipment**  
Check the inside of the unit on damaged components or squeezed pipes.

### 7 Refrigerant leak

Check the inside of the unit on refrigerant leakage. If there is a refrigerant leak try to repair the leak (recovery, repair, and vacuuming needed). If it is impossible to repair by yourself, call your local dealer.

Do not touch any refrigerant which has leaked out of refrigerant piping connections.

This may result in frostbite.

### 8 Water leak

Check the inside of the unit on water leakage. In case there is a water leakage try to repair the leak. If it is impossible to repair by yourself, close the water inlet and water outlet shut-off valves and call your local dealer.

### 9 Power supply voltage

Check the power supply voltage on the local supply panel. The voltage must correspond to the voltage on the identification label of the unit.

### 10 Air purge valve

Make sure the air purge valve of the unit is open (at least 2 turns). Refer to "[E-04] Pump only operation (air purge function)" on page 21.

### 11 Shut-off valves

Make sure that the shut-off valves are correctly installed and fully open.



#### NOTICE

Operating the system with closed valves will damage the pump!

Once all checks are fulfilled, the unit must be closed, only then can the unit be powered up. When the power supply to the unit is turned on, "88" is displayed on the remote controller during its initialization, which might take up to 30 seconds. During this process the remote controller can not be operated.

## 5.2. Configure the unit

### 5.2.1. Final air purging

To get rid of all the air in the system, the pump should be operated.

Therefore, change the field setting [E-04] as explained in the chapter "5.2.3. Field settings on the remote controller" on page 17. More details about setting "[E-04] Pump only operation (air purge function)" can be found on page 21.

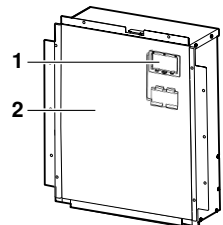
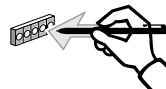
### 5.2.2. Field setting on outdoor module(s)

If required, carry out field settings according to the following instructions. Refer to the service manual for more details.

#### Opening the switch box and handling the switches

When carrying out field settings, remove the inspection cover (1).

Operate the push buttons with an insulated stick (such as a ball-point pen) to avoid touching live parts.



Make sure to re-attach the inspection cover (1) into the switch box cover (2) after the job is finished.



#### NOTICE

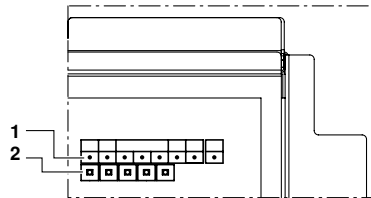
Make sure that all outside panels, except for the panel on the electric box, are closed while working.

Close the lid of the electric box firmly before turning on the power.



## Location of the dip switches, LEDs and buttons

- LED H1P~H8P
- Push button switches BS1~BS5



## LED state

Throughout the manual the state of the LEDs is indicated as follows:

- OFF
- ☀ ON
- ☀ Blinking

Function of the push button switch which is located on the outdoor unit PCB (A1P):

MODE	TEST: ☀	C/H SELECT				L.N.O.P	DEMAND	MULTI
	HWL: ☀	IND	MASTER	SLAVE				
● H1P	● H2P	☀ H3P	● H4P	● H5P	● H6P	● H7P		● H8P
BS1 MODE		BS2 SET	BS3 RETURN	BS4 TEST	BS5 RESET			

- BS1 MODE** For changing the set mode
- BS2 SET** For field setting
- BS3 RETURN** For field setting
- BS4 TEST** This push button has no function
- BS5 RESET** This push button has no function

LED display (Default status before delivery)		Micro- computer operation monitor  HAP	Mode  H1P	Ready/ Error  H2P	Cooling/Heating changeover			Low noise  H6P	Demand  H7P	Multi  H8P
					Indivi- dual  H3P	Bulk (master)  H4P	Bulk (slave)  H5P			
Single system <sup>(a)</sup>		☀	●	●	☀	●	●	●	●	●
Multiple system <sup>(a)</sup>	Left unit	☀	●	●	☀	●	●	●	●	☀
	Right unit	☀	●	●	●	●	●	●	●	☀

(a) EWA/YQ016~032 units are single system units,  
EWA/YQ040~064 units are multiple system units

## Setting the mode

The set mode can be changed with the **BS1 MODE** button according to the following procedure:

Press the **BS1 MODE** button for 5 seconds, until the H1P LED is on ☀.



### INFORMATION

If you get confused in the middle of the setting process, push the **BS1 MODE** button. Then it returns to setting mode 1 (H1P LED is off).

## Setting procedure

- Push the **BS2 SET** button according to the required function (A~E). The LED indication that matches the required function is shown below in the field marked  :

### Possible functions

- A** setting of high static pressure.
- B** automatic low noise operation setting at nighttime.
- C** low noise operation level setting (**L.N.O.P.**) via the external control adapter.
- D** power consumption limitation setting (**DEMAND**) via the external control adapter.
- E** enabling function of the low noise operation level setting (**L.N.O.P.**) and/or power consumption limitation setting (**DEMAND**) via the external control adapter (DTA104A62).

	H1P	H2P	H3P	H4P	H5P	H6P	H7P
A	☀	●	☀	●	●	☀	●
B	☀	●	☀	●	☀	☀	●
C	☀	●	☀	☀	●	●	☀
D	☀	●	☀	☀	☀	☀	●
E	☀	●	●	☀	☀	●	●

- When the **BS3 RETURN** button is pushed, the current setting is defined.
- Push the **BS2 SET** button according to the required setting possibility as shown below in the field marked  .
- 3.1 Possible settings for function A and E are **ON** (ON) or **OFF** (OFF).

	H1P	H2P	H3P	H4P	H5P	H6P	H7P
ON	☀	●	●	●	●	☀	●
OFF <sup>(a)</sup>	☀	●	●	●	●	●	☀

(a) This setting = factory setting

- 3.2 Possible settings for function B

The noise of level 3 < level 2 < level 1 (▲ 1).

	H1P	H2P	H3P	H4P	H5P	H6P	H7P
OFF <sup>(a)</sup>	☀	●	●	●	●	●	●
▲ 1	☀	●	●	●	●	●	☀
▲ 2	☀	●	●	●	●	☀	●
▲ 3	☀	●	●	●	●	☀	☀

(a) This setting = factory setting

- 3.3 Possible settings for function C and D

For function C (**L.N.O.P.**) only: the noise of level 3 < level 2 < level 1 (▲ 1).

For function D (**DEMAND**) only: the power consumption of level 1 < level 2 < level 3 (▲ 3).

	H1P	H2P	H3P	H4P	H5P	H6P	H7P
▲ 1	☀	●	●	●	●	●	☀
▲ 2 <sup>(a)</sup>	☀	●	●	●	●	☀	●
▲ 3	☀	●	●	●	☀	●	●

(a) This setting = factory setting

- 4 Push the **BS3 RETURN** button and the setting is defined.
- 5 When the **BS3 RETURN** button is pushed again, the operation starts according to the setting.

Refer to the service manual for more details and for other settings.



## Confirmation of the set mode

The following items can be confirmed by setting mode 1 (H1P LED is off)

Check the LED indication in the field marked

### 1 Indication of the present operation state

- , normal
- ☀, abnormal
- ☀, under preparation or under test operation

H1P	H2P	H3P	H4P	H5P	H6P	H7P
●	●	☀	●	●	●	●

### 2 Indication of low noise operation state L.N.O.P.

- standard operation (= factory setting)
- ☀ L.N.O.P. operation

H1P	H2P	H3P	H4P	H5P	H6P	H7P
●	●	☀	●	●	●	●

### 3 Indication of power consumption limitation setting DEMAND

- standard operation (= factory setting)
- ☀ DEMAND operation

H1P	H2P	H3P	H4P	H5P	H6P	H7P
●	●	☀	●	●	●	●

## 5.2.3. Field settings on the remote controller

The unit should be configured by the installer to match the installation environment (outdoor climate, installed options, etc.) and user demand. Therefore, a number of so called field settings are available. These field settings are accessible and programmable through the remote controller.

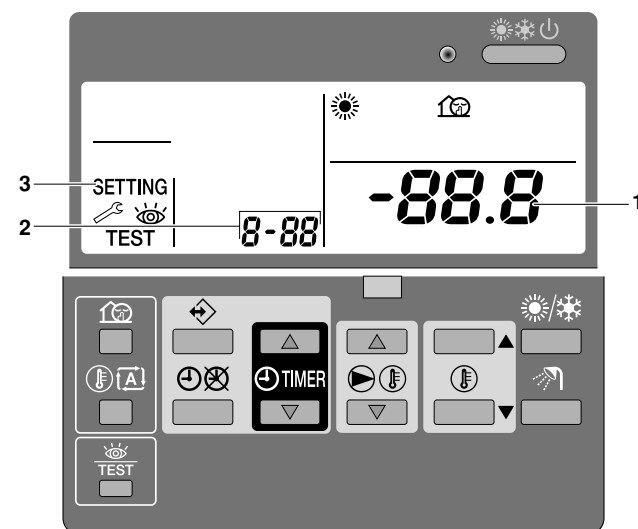
Each field setting is assigned a 3-digit number or code, for example [5-03], which is indicated on the remote controller display. The first digit [5] indicates the 'first code' or field setting group. The second and third digit [03] together indicate the 'second code'.

A list of all field settings and default values is given in the "6.1.1. Field settings table" on page 39. In this list we provided for 2 columns to register the date and value of altered field settings at variance with the default value.

A detailed description of each field setting is given under "5.2.5. Detailed description" on page 18.

## 5.2.4. Procedure

To change one or more field settings, proceed as follows.



- Press the button for a minimum of 5 seconds to enter FIELD SET MODE.  
The **SETTING** icon (3) will be displayed. The current selected field setting code is indicated **8-88** (2), with the set value displayed to the right **-88.8** (1).
- Press the button to select the appropriate field setting first code.
- Press the button to select the appropriate field setting second code.
- Press the button and button to change the set value of the select field setting.
- Save the new value by pressing the button.
- Repeat step 2 through 4 to change other field settings as required.
- When finished, press the button to exit FIELD SET MODE.



### INFORMATION

- Changes made to a specific field setting are only stored when the button is pressed. Navigating to a new field setting code or pressing the button will discard the change made.
- The field settings are grouped by their field setting first code.  
For example, field settings [0-00]; [0-01]; [0-02]; [0-03] are defined as "Group 0".  
When different values are changed within the same group, pressing the button will save all the values changed within this group.  
Be aware of this when changing field settings within the same group and pressing on the button.



### INFORMATION

- Before shipping, the set values have been set as shown under "6.1.1. Field settings table" on page 39.
- When exiting FIELD SET MODE, "88" may be displayed on the remote controller LCD while the unit initializes itself.



### 5.2.5. Detailed description

For a summary of all field settings refer to "6.1.1. Field settings table" on page 39.

#### [0] Remote control setup

##### ■ [0-00] User permission level

The remote controller can be programmed to make certain buttons and functions unavailable for the user. There are 2 permission levels defined. Both levels (level 2 and level 3) are basically the same, the only difference is that for level 3 no water temperature settings are possible (see table below).

	Permission	
	level 2	level 3
Operation ON/OFF	Operable	Operable
Setting the leaving water temperature	Operable	—
Setting the room temperature	Operable	Operable
Quiet mode ON/OFF	—	—
Weather dependent set point operation ON/OFF	Operable	—
Setting the clock	—	—
Programming the schedule timer	—	—
Schedule timer operation ON/OFF	Operable	Operable
Field settings	—	—
Error code display	Operable	Operable
Test operation	—	—

By default no level is defined so all buttons and functions are operable.

The actual permission level is determined by field setting. For permission level 2, set field setting [0-00] to 2, for permission level 3, set field setting [0-00] to 3.

Once the field setting is set, the chosen permission level is not yet active. Enabling the selected permission level is done by simultaneously pressing buttons  $\odot$   $\blacktriangle$  and  $\odot$   $\blacktriangledown$  immediately followed by simultaneously pressing buttons  $\text{F}$  and  $\text{A}$ , and keeping all 4 buttons pressed for at least 5 seconds. Note that no indication on the remote controller is given. After the procedure the blocked buttons will not be available anymore. Deactivating the selected permission level is done in the same way.

##### ■ [0-01] Room temperature compensation value

If needed, it is possible to adjust some thermistor value of the unit by a correction value. This can be used as countermeasure for thermistor tolerances or capacity shortage.

The compensated temperature (= measured temperature plus compensation value) is then used for controlling the system and will be displayed in the temperature read-out mode. See also "[9] Automatic temperature compensation" on page 21 for compensation values for leaving water temperature.

##### ■ [0-02] Setting not applicable

##### ■ [0-03] Status: defines whether the ON/OFF instruction can be used in the schedule timer for space heating.

Refer to the operation manual for details how to program the schedule timer.

The schedule timer for space heating can be programmed in 2 different ways: based on the temperature set point (both leaving water temperature and room temperature) and based on the ON/OFF instruction.



#### INFORMATION

By default space heating based on temperature set point (method 1) is enabled, so only temperature shifts are possible (no ON/OFF instruction).

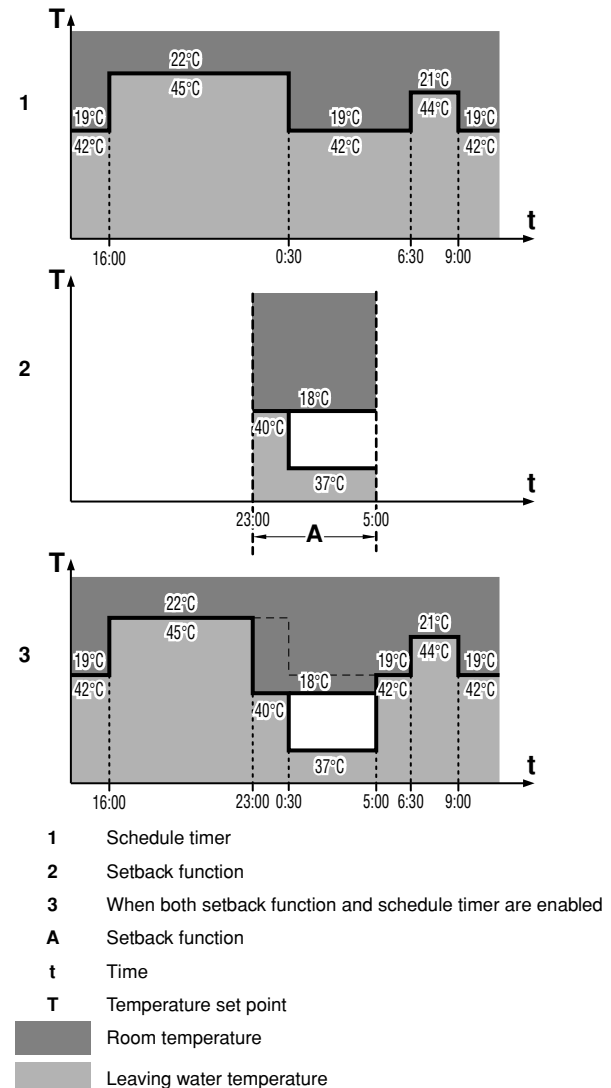
In the following tables both methods on how to interpret the schedule timer are shown.

Method 1	Space heating based on temperature set point <sup>(a)</sup>
During operation	During schedule timer operation the operation LED is lit continuously.
When pushing the $\text{**}$ button	The schedule timer for space heating will stop and will not start again. The controller will be switched off (operation LED will stop working).
When pushing the $\text{F}$ button	The schedule timer for space heating along with the quiet mode will be stopped and will not start again. The schedule timer icon will not be displayed anymore.

(a) For leaving water temperature and/or room temperature

**Operation example:** Schedule timer based on temperature set points.

When setback function (refer to "[2] Automatic setback function" on page 19) is enabled, the setback operation will have priority over the scheduled action in the schedule timer.

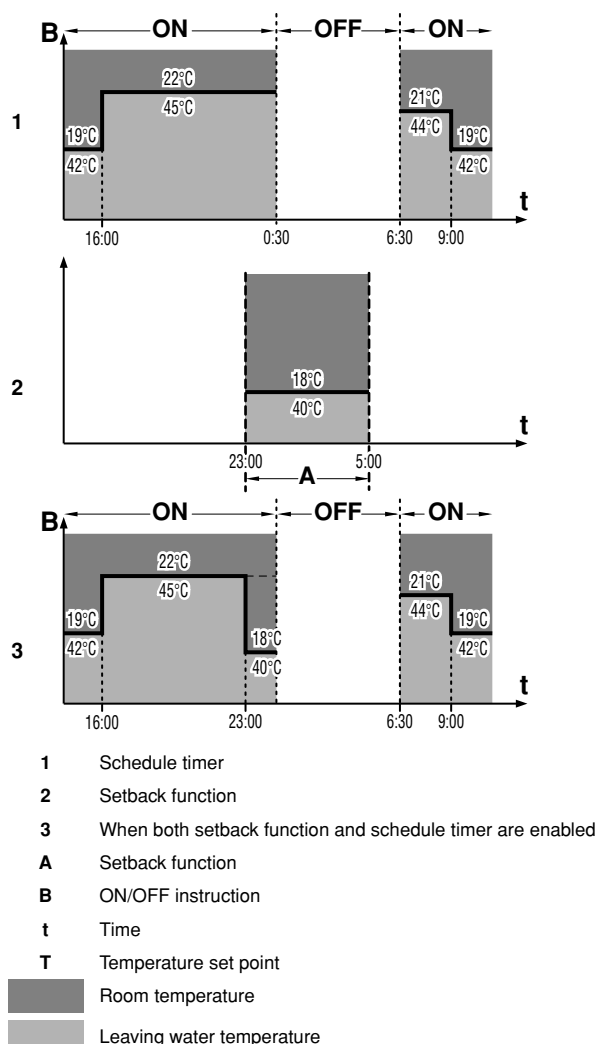




Method 2 Space heating based on ON/OFF instruction	
During operation	When the schedule timer switches space heating OFF, the controller will be switched off (operation LED will stop working).
When pushing the <b>ON/OFF</b> button	<p>The schedule timer for space heating will stop (when active at that moment) and will start again at the next scheduled ON function.</p> <p>The "last" programmed command overrules the "preceding" programmed command and will remain active until the "next" programmed command occurs.</p> <p>Example: imagine the actual time is 17:30 and actions are programmed at 13:00, 16:00 and 19:00. The "last" programmed command (16:00) overruled the "previous" programmed command (13:00) and will remain active until the "next" programmed command (19:00) occurs.</p> <p>So in order to know the actual setting, one should consult the last programmed command. It is clear that the "last" programmed command may date from the day before. Refer to the operation manual.</p> <p>The controller will be switched off (operation LED will stop working). However the schedule timer icon will stay displayed.</p>
When pushing the <b>STOP</b> button	The schedule timer for space heating along with the quiet mode will be stopped and will not start again. The schedule timer icon will not be displayed anymore.

**Operation example:** Schedule timer based on ON/OFF instruction.

When setback function (refer to "[2] Automatic setback function" on page 19) is enabled, the setback operation will have priority over the scheduled action in the schedule timer if ON instruction is active. If OFF instruction is active this will have priority over the setback function. At any time the OFF instruction will have the highest priority.



- **[0-04] Status:** defines whether the ON/OFF instruction can be used in the schedule timer for cooling. Same as for [0-03] but for cooling schedule timer. For cooling, no setback function is available.

## [1] Settings are not applicable

## [2] Automatic setback function



### INFORMATION

Only for EWYQ units operating in heating mode.

Setback function for cooling does not exist.

Setback function provides the possibility to lower the room temperature. The setback function can for instance be activated during the night because the temperature demands during night and day are not the same.



### INFORMATION

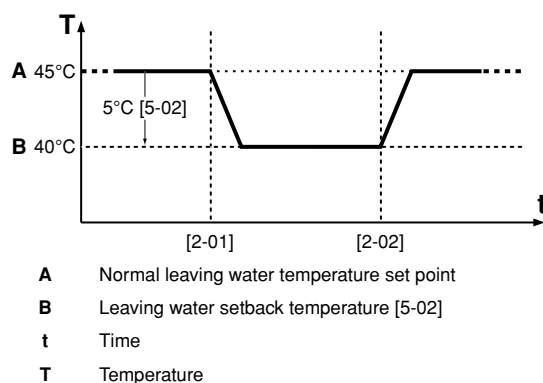
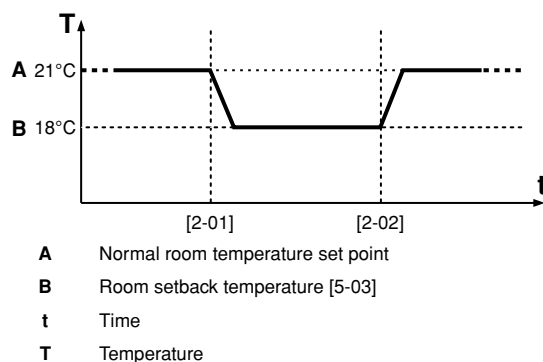
- By default the setback function is enabled.
- The setback function can be combined with the automatic weather dependent set point operation.
- Setback function is an automatic daily scheduled function.

- **[2-00] Status:** defines whether the setback function is turned ON (1) or OFF (0)

- **[2-01] Start time:** time at which setback is started

- **[2-02] Stop time:** time at which setback is stopped

Setback can be configured for both room temperature control and leaving water temperature control.



Refer to "[5] Automatic setback" on page 20 for temperature set points.



### [3] Weather dependent set point



#### INFORMATION

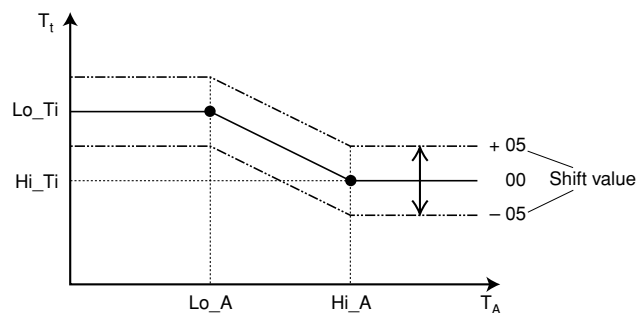
Only for EWYQ units operating in heating mode.

Setback function for cooling does not exist.

When weather dependent operation is active, the leaving water temperature is determined automatically depending on the outdoor temperature: colder outdoor temperatures will result in warmer water and vice versa. The unit has a floating set point. Activating this operation will result in a lower power consumption than use with a manually fixed leaving water set point.

During weather dependent operation, the user has the possibility to shift up or down the target water temperature by a maximum of 5°C. This "Shift value" is the temperature difference between the temperature set point calculated by the controller and the real set point. E.g. a positive shift value means that the real temperature set point will be higher than the calculated set point.

It is advised to use the weather dependent set point because it adjusts the water temperature to the actual needs for space heating. It will prevent the unit from switching too much between thermo ON operation and thermo OFF operation when using the remote controller room thermostat or external room thermostat.



$T_t$  Target water temperature

$T_A$  Ambient (outdoor) temperature

Shift value = Shift value

- [3-00] Low ambient temperature (Lo\_A): low outdoor temperature.
- [3-01] High ambient temperature (Hi\_A): high outdoor temperature.
- [3-02] Set point at low ambient temperature (Lo\_Ti): the target outgoing water temperature when the outdoor temperature equals or drops below the low ambient temperature (Lo\_A). Note that the Lo\_Ti value should be higher than Hi\_Ti, as for colder outdoor temperatures (i.e. Lo\_A) warmer water is required.
- [3-03] Set point at high ambient temperature (Hi\_Ti): the target outgoing water temperature when the outdoor temperature equals or rises above the high ambient temperature (Hi\_A). Note that the Hi\_Ti value should be lower than Lo\_Ti, as for warmer outdoor temperatures (i.e. Hi\_A) less warm water suffices.



#### INFORMATION

If by mistake the value of [3-03] is set higher than the value of [3-02], the value of [3-03] will always be used.

### [4] Settings are not applicable

#### [5] Automatic setback

- [5-00] Setting is not applicable.
- [5-01] Setting is not applicable.
- [5-02] Leaving water setback temperature.
- [5-03] Room temperature setback.
- [5-04] Setting is not applicable.

### [6] Option setup

#### ■ [6-01] External room thermostat option

If the optional external room thermostat is installed, its operation must be enabled by field setting. Default [6-01]=0, which means no external room thermostat is installed. Set [6-01] to 1 or 2 if the optional external room thermostat is installed.

The external room thermostat only gives an ON/OFF signal to the heat pump based on the room temperature. Because it does not give continuous feedback information to the heat pump, it is supplementary to the remote controller room thermostat function. To have a good control of the system and avoiding frequent ON/OFF it is advised to use the automatic weather dependent set point operation.

#### ■ [6-01]=1

Room thermostat input 1 = heating operation ON (1)/OFF (0)

Room thermostat input 2 = cooling operation ON (1)/OFF (0)

#### ■ [6-01]=2

Room thermostat input 1 = operation ON (1)/OFF (0)

Room thermostat input 2 = cooling (1)/heating (0) selection

#### ■ [6-03] Negative leaving water temperature setting

This setting is only applicable for units with a low temperature cooling option below 0°C ([A-04]=1).

It is not possible to set negative leaving water temperature settings directly on the remote controller. This has to be done through this setting.

Example: [6-03]=-5 sets negative leaving water temperature set point to -5°C.



#### INFORMATION

The unit will only accept this negative leaving water set point when leaving water set point on the remote controller display is set to 0°C (after changing [C-03] to 0) and the field setting [A-04]=1.

### [7] Option setup

#### ■ [7-00] Forced pump operation

■ [7-00]=0 the pump performs intermittent sampling during thermo off conditions. This setting is often used when the unit is controlled by a room thermostat.

■ [7-00]=1 the pump continues operation during thermo off conditions (default)

### [8] Option setup

#### ■ [8-00] Remote controller temperature control

■ [8-00]=0 the unit operates in leaving water temperature control. This is the default setting.

■ [8-00]=1 the unit operates in room temperature control. This means that the remote controller is used as room thermostat, so the remote controller can be placed in the living room to control the room temperature.

#### ■ [8-01] Setting is not applicable

#### ■ [8-03] Setting is not applicable.



#### ■ [8-04] Freeze-up prevention

The unit has a freeze-up prevention functionality for which 3 levels can be selected:

■ [8-04]=0 prevention level 0 (default: no prevention)

■ [8-04]=1 prevention level 1

■ [8-04]=2 prevention level 2

The freeze-up prevention is only active when the unit is in thermo OFF condition. If prevention level 1 is enabled, the freeze-up prevention will start if the outdoor ambient temperature  $<4^{\circ}\text{C}$  and if leaving or return water temperature  $<7^{\circ}\text{C}$ . For prevention level 2, the freeze-up prevention will start as soon as the ambient temperature  $<4^{\circ}\text{C}$ .

For both cases the pump will operate and if leaving or return water  $<5^{\circ}\text{C}$  for 5 minutes the unit will start up to prevent too low temperatures.

This function can be enabled when there is no optional heater tape or glycol in the system and when heat can be used from an application.

#### [9] Automatic temperature compensation

If needed, it is possible to adjust some thermistor value of the unit by a correction value. This can be used as countermeasure for thermistor tolerances or capacity shortage.

The compensated temperature (= measured temperature plus compensation value) is then used for controlling the system and will be displayed in the temperature read-out mode.

■ [9-00] Leaving water temperature compensation value for heating operation.

■ [9-01] Leaving water thermistor auto corrective function.  
When enabled, this function will take into account the outdoor ambient conditions and correct the measured value which will be used for the logic.

Eg. when the ambient temperature is high during cooling mode, the logic will correct the measured value of the leaving water thermistor to a lower value to take into account influence of high ambient temperatures in the measurement.

■ [9-02] Setting is not applicable

■ [9-03] Leaving water temperature compensation value for cooling operation.

■ [9-04] Setting not applicable

#### [A] Option setup

■ [A-00] Setting is not applicable.

■ [A-01] Setting is not applicable.

■ [A-02] Setting is not applicable.

■ [A-03] Leaving water temperature overshoot/undershoot value  
This setting makes it possible to set the allowable overshoot (heating)/undershoot (cooling) when operating the unit during leaving water control.

■ [A-04] Glycol concentration setting

This setting is only applicable for units with a low temperature cooling option.

When changing this setting, the freeze prevention parameters will be changed in relation with the glycol concentration.

■ [A-04]=0= 30% glycol, minimum leaving water= $0^{\circ}\text{C}$

■ [A-04]=1= 40% glycol, minimum leaving water= $-10^{\circ}\text{C}$



#### CAUTION

Glycol concentrations lower than the set parameter will cause freezing of the liquid.

To set leaving water temperatures  $<0^{\circ}\text{C}$  see "[6-03] Negative leaving water temperature setting" on page 20.

[b] Settings are not applicable

#### [C] Leaving water temperature limits

■ [C-00] Maximum leaving water set point in heating operation

■ [C-01] Minimum leaving water set point in heating operation

■ [C-02] Maximum leaving water set point in cooling operation

■ [C-03] Minimum leaving water set point in cooling operation (depends on [A-04] Glycol concentration setting)

■ [C-04] Setting is not applicable.

[d] Settings are not applicable

#### [E] Service mode

■ [E-00] Setting is not applicable.

■ [E-01] Setting is not applicable.

■ [E-02] Setting is not applicable.

■ [E-03] Setting is not applicable.

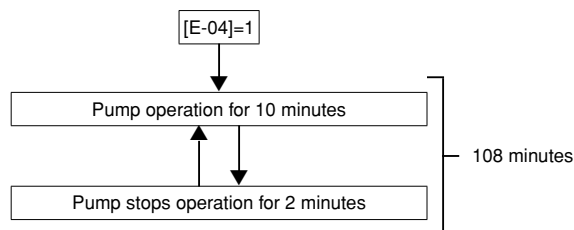
■ [E-04] Pump only operation (air purge function)

When installing and commissioning the unit it is very important to get all air out of the water circuit.

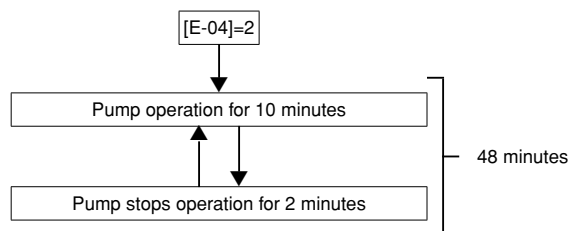
Through this field setting the pump can be operated without actual operation of the unit. By doing so this will enhance the air removal from the unit.

■ [E-04]=0 normal operation of the unit (default).

■ [E-04]=1 program 1 the unit will perform the automatic air purge operation for 108 minutes.



■ [E-04]=2 program 2 the unit will perform the automatic air purge operation for 48 minutes.



[F] Settings are not applicable



### 5.3. Final check and test run

#### 5.3.1. Final check

Before switching on the unit, read the following recommendations:

- When the complete installation and all necessary settings have been carried out, be sure that all panels of the unit are closed. If this is not the case, inserting your hand through the remaining openings can cause serious injury due to electrical and hot parts inside the unit.
- The service panel of the switch box may only be opened by a licensed electrician for maintenance purposes.



#### **DANGER**

Never leave the unit unattended during installation or servicing. When the service panel is removed live parts can be easily touched by accident.



#### **INFORMATION**

Note that during the first running period of the unit, required power input may be higher than stated on the nameplate of the unit. This phenomenon originates from the compressor that needs elapse of a 48 hours run in period before reaching smooth operation and stable power consumption.

#### 5.3.2. Unit test run



#### **INFORMATION**

When the unit is powered on for the first time, an initialisation takes place. This will take maximum 12 minutes.

When using the remote controller during the initialisation, an error code (UH) can be displayed.

The installer is obliged to verify correct operation of the system after installation. Therefore a test run must be performed according to the procedures described below. At any time it is possible to check correct operation and space heating.

















#### **INFORMATION**





During the first start up of the unit (the first 48 hours of compressor running), it might happen that the noise level of the unit is higher than mentioned in the technical specifications. This is not an abnormal event.

#### Temperature read-out mode

On the remote controller, the actual temperatures can be displayed.



- 1 Push and hold the  button for 5 seconds.  
The leaving water temperature is displayed (icons  and  and  are blinking).
- 2 Use the  and  buttons to display:
  - The entering water temperature (icons  and  are blinking and the  icon is flashing slowly).
  - The indoor temperature (icons  and  are blinking).
  - The outdoor temperature (icons  and  are blinking).
- 3 Push the  button again to leave this mode. If no button is pressed, the remote controller leaves the display mode after 10 seconds.

#### Procedure for space heating/cooling

- 1 Check the leaving water and entering water temperature through the remote controller read-out mode and write down the displayed values. See "Temperature read-out mode" on page 22.
- 2 Select the operation mode: heating or cooling.
- 3 Push the  button 4 times so the TEST icon will be displayed.
- 4 Perform the test as follows (when no action is performed, the remote controller will return to normal mode after 10 seconds or by pressing the  button once):  
To test the space heating/cooling operation push the  button to start the test run operation.
- 5 The test run operation will end automatically after 30 minutes or when reaching the set temperature. The test run operation can be stopped manually by pressing the  button once. If there are misconnections or malfunctions, an error code will be displayed on the remote controller. Otherwise, the remote controller will return to normal operation.
- 6 To resolve the error codes, see "5.5.2. Error codes" on page 23.
- 7 Check the leaving water and entering water temperature through the remote controller read-out mode and compare them with the values noted with step 1. After 20 minutes of operation an increase/decrease of the values should confirm the space heating/cooling operation.




#### **INFORMATION**

To display the last resolved error code, push the  button 1 time. Push the  button again 4 times to return to normal mode.



#### **INFORMATION**

It is not possible to perform a test run if a forced operation from the unit is in progress. Should forced operation be started during a test run, the test run will be aborted. The external control icon  will appear.

#### 5.4. Handover to the user

Once the test run is finished and the unit operates properly, fill-in the sheet "Handover of the installation to the user" which is in "Annex" on page 24.



## 5.5. Service and maintenance

In order to ensure optimal operation of the unit, a number of checks and inspections on the unit and the field wiring have to be carried out at regular intervals.

This maintenance should be carried out by your local installer.

To execute maintenance first remove the panels as shown in "4.2.2. Opening the unit" on page 7.

### 5.5.1. Maintenance activities



#### DANGER: ELECTRICAL SHOCK

See "2. Precautions for installation" on page 3.



#### WARNING: ELECTRIC SHOCK



- Before carrying out any maintenance or repair activity, always switch off the circuit breaker on the supply panel, remove the fuses or open the protection devices of the unit.
- Do not touch live parts for 10 minutes after the power supply is turned off because of high voltage risk.
- Please note that some sections of the electric component box are hot.
- Make sure you do not touch a conductive section.
- Do not rinse the unit. This may cause electric shocks or fire.



#### Play it safe!

Touch a metal part by hand (such as the stop valve) in order to eliminate static electricity and to protect the PCB before performing service.

### Checks

The described checks must be executed at least **once a year** by qualified personnel.

- 1 Pressure relief valve hose (if present)  
Check that the pressure relief valve hose is positioned appropriately to drain the water.
- 2 Water pressure relief valve  
Check for correct operation of the pressure relief valve by turning the red knob on the valve counter-clockwise:
  - If you do not hear a clacking sound, contact your local dealer.
  - In case the water keeps running out of the unit, close both the water inlet and outlet shut-off valves first and then contact your local dealer.
- 3 Switch box  
Carry out a thorough visual inspection of the switch box and look for obvious defects such as loose connections or defective wiring.
- 4 Water pressure  
Check if the water pressure is above 1 bar.  
If necessary add water.
- 5 Water filter  
Clean the water filter.

- 6 In case of use of glycol

(Refer to Caution: "Use of glycol" on page 11)

Document the glycol concentration and the pH-value in the system at least once a year.

- A pH-value below 8.0 indicates that a significant portion of the inhibitor has been depleted and that more inhibitor needs to be added.

- When the pH-value is below 7.0 then oxidation of the glycol occurred, the system should be drained and flushed thoroughly before severe damage occurs.

Make sure that the disposal of the glycol solution is done in accordance with the applicable legislation.

### 5.5.2. Error codes

Error code	Failure cause	Corrective action
R1	Failure of writing memory (EEPROM error)	Contact your local dealer.
R6	Malfunction water circuit	<ul style="list-style-type: none"><li>• Make sure waterflow is possible (open all valves in the circuit).</li><li>• Force clean water through the unit.</li></ul>
R9	R410A expansion valve error (K11E/K21E)	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
RE	Water system warning	<ul style="list-style-type: none"><li>• Check filter.</li><li>• Make sure all valves are open.</li><li>• Contact your local dealer.</li></ul>
RI	Capacity error	Contact your local dealer.
C1	Bad ACS communication	Contact your local dealer.
C4	R410A liquid thermistor error (R13T/R23T)	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
C9	Returning water thermistor error (R12T/R22T)	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
CR	Heating leaving water thermistor error (R11T/R12T)	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
CJ	Remote controller thermostat thermistor error	Contact your local dealer.
E3	High pressure error (SENP/S1PH)	<ul style="list-style-type: none"><li>• Make sure the circuit is filled with water (no air inside, e.g. is the air purge open?).</li><li>• Make sure water flow is possible (open all valves in the circuit).</li><li>• Make sure the water filter is not blocked.</li><li>• Make sure all refrigerant stop valves are open.</li><li>• Contact your local dealer.</li></ul>
E4	Low pressure error (SENPL)	Contact your local dealer.
J7	R410A suction thermistor error (R14T/R24T)	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
U1	The phases of the power to the unit is reversed.	Exchange two of the three phases (L1, L2, L3) to make a positive phase connection.
U2	Power supply error	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
UR	Type connection problem	<ul style="list-style-type: none"><li>• Wait till initialisation between outdoor module and hydro module finished (after power ON, wait at least 12 minutes).</li><li>• Contact your local dealer.</li></ul>
UH	Address error	Contact your local dealer.

### 5.5.3. Important information regarding the refrigerant used

This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. Do not vent gases into the atmosphere.

Refrigerant type: R410A

GWP<sup>(1)</sup> value: 1975

<sup>(1)</sup> GWP = global warming potential



## 6. UNIT SPECIFICATIONS

### 6.1. Technical specifications

EWAQ/EWYQ							
	016	021	025	032	040	050	064
Dimensions (HxWxD) (mm)	1684x 1340x 775			1684x 1650x 775	1684x 2320x 780	1684x 2940x 780	
Weight							
• machine (kg)	285	340	385	420	610	705	775
• operation (kg)	290	345	390	425	620	715	785
Connections	G 1-1/4" female				G 2" female		
Expansion vessel volume (l)	12 l						
Safety valve water circuit (bar)	3 bar						
External static pressure (ESP)							
• EWA/YQ*BAWP				See figure 15 <sup>(a)</sup>			
• EWA/YQ*BAWH				See figure 16 <sup>(a)</sup>			
Pressure drop EWA/YQ*BAWN	See figure 17 <sup>(b)</sup>						
Operation range							
• cooling mode	EWAQ/EWYQ See figure 18 <sup>(c)</sup>						
• heating mode	EWYQ See figure 19 <sup>(c)</sup>						
Sound pressure level (dBA)	58	58	60	60	61	63	63

- (a) External static pressure=External static pressure  
Water flow=Water flow
- (b) Pressure drop=Pressure drop  
Water flow=Water flow
- (c) T<sub>A</sub>=Ambient temperature °C DB (dry bulb)  
LWE=Leaving water evaporator temperature  
LWC=Leaving water condenser temperature  
EWC=Entering water condenser temperature  
A=Optional water + glycol operation range  
B=Standard water operation range  
C=Pull down area  
D=Pull up area  
E=Protect the system against freezing by installing an optional water piping heater tape or by filling up the system with a glycol solution.

### 6.2. Electrical specifications

EWAQ/EWYQ							
	016	021	025	032	040	050	064
Phase	3N~						
Frequency	50 Hz						
Voltage	400 V (±10%)						
Maximum running current	for details see technical data book						
Maximum starting current	for details see technical data book						
Recommended fuses	for details see technical data book						

## ANNEX

### Handover of the installation to the user

To be filled in by the installer once the test run is finished and the unit operates properly

Tick ✓ when checked	
<input type="checkbox"/>	Explain to the user what system is installed on site. Complete the fill-in below for each unit. The information may be useful for the user in future servicing.

Place of installation:
Model name (see nameplate of the unit)
Optional equipment

<input type="checkbox"/>	Ensure that the user has a printed version of the installation and operation manual and ask him/her to keep it for future reference.
<input type="checkbox"/>	Explain the user how to properly operate the system and what he/she has to do in case of problems.
<input type="checkbox"/>	Show the user what jobs he/she has to do in relation to maintenance of the unit.

Date:
Signature:
Your product was installed by:



# OPERATION MANUAL

## 1. DEFINITIONS

### 1.1. Meaning of warnings and symbols

Warnings in this manual are classified according to their severity and probability of occurrence.



#### **DANGER**

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



#### **WARNING**

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



#### **CAUTION**

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



#### **NOTICE**

Indicates situations that may result in equipment or property-damage accidents only.



#### **INFORMATION**

This symbol identifies useful tips or additional information.

Some types of danger are represented by special symbols:



Electric current.



Danger of burning and scalding.

### 1.2. Meaning of used terms

#### **Installation manual:**

Instruction manual specified for a certain product or application, explaining how to install, configure and maintain it.

#### **Operation manual:**

Instruction manual specified for a certain product or application, explaining how to operate it.

#### **Maintenance instructions:**

Instruction manual specified for a certain product or application, which explains (if relevant) how to install, configure, operate and/or maintain the product or application.

#### **Dealer:**

Sales distributor for products as per the subject of this manual.

#### **Installer:**

Technical skilled person who is qualified to install products as per the subject of this manual.

#### **User:**

Person who is owner of the product and/or operates the product.

#### **Service company:**

Qualified company which can perform or coordinate the required service to the unit.

#### **Applicable legislation:**

All international, European, national and local directives, laws, regulations and/or codes which are relevant and applicable for a certain product or domain.

#### **Accessories:**

Equipment which is delivered with the unit and which needs to be installed according to instructions in the documentation.

#### **Optional equipment:**

Equipment which can optionally be combined to the products as per the subject of this manual.

#### **Field supply:**

Equipment which needs to be installed according to instructions in this manual, but which are not supplied by Daikin.

## 2. GENERAL SAFETY PRECAUTIONS

This appliance is not intended for use by persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

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



#### **WARNING**

Before operating the unit, be sure the installation has been carried out correctly by an installer.

If you feel unsure about operation, contact your installer for advice and information.

## 3. INTRODUCTION

### 3.1. General information

The unit is designed for outdoor installation and can be combined with Daikin fan coil units for airconditioning purposes. They can also be used for supplying water for process cooling.

Refer to the installation manual for the list of options.

### 3.2. Scope of this manual

This manual has been prepared to ensure adequate operation of the unit.



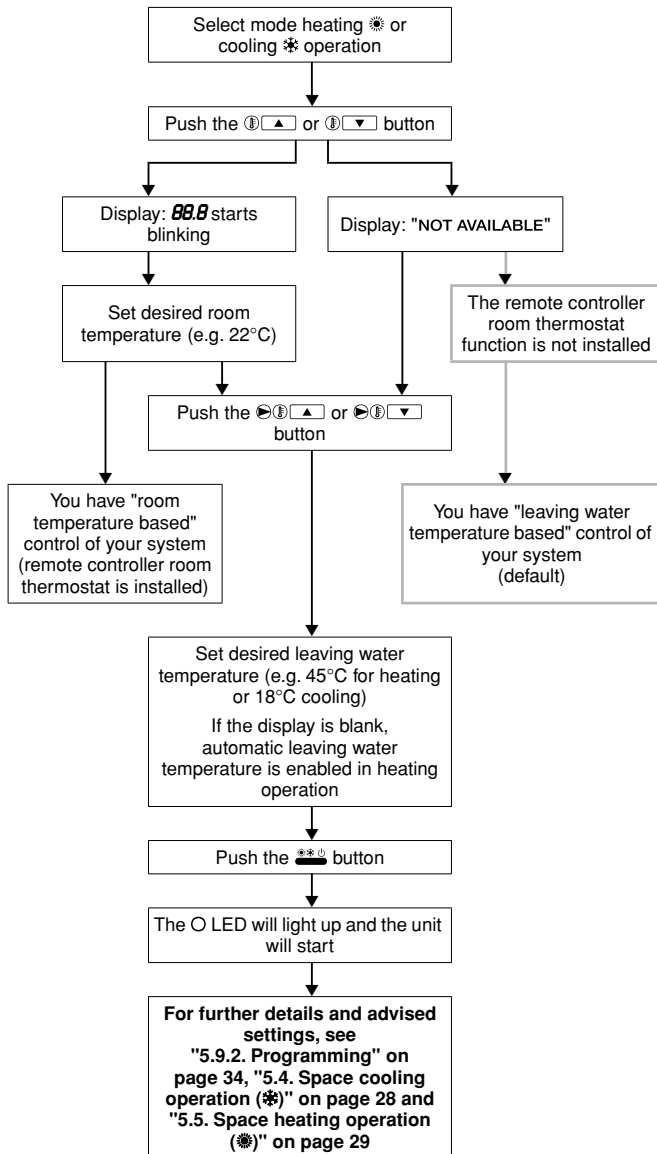
## 4. QUICK START-UP OF THE UNIT

In this chapter the step-by-step procedure is explained for starting up space cooling/heating.

The more detailed information of how the unit must be operated is explained in the chapter "5. Operating the unit" on page 26.

The quick start-up offers the user the possibility to start up the system before reading the entire manual.

### 4.1. Space cooling/heating operation



## 5. OPERATING THE UNIT



### CAUTION

- Do not rinse the unit. This may cause electric shock or fire.
- Do not climb, sit or stand on top of the unit.
- Do not place any objects or equipment on the unit top plate.

### 5.1. Operating the remote controller

The remote controller offers full control over your installation. It can control all applications which vary in capacity, electrical supply and installed equipment (options). Operating the EWAQ/EWYQ unit comes down to operating the remote controller.



### CAUTION

- Never let the remote controller get wet. This may cause an electric shock or fire.
- Never press the buttons of the remote controller with a hard, pointed object. This may damage the remote controller.
- Never inspect or service the remote controller yourself, ask a qualified service person to do this.

#### 5.1.1. Features and functions

The remote controller is a state of the art controller that offers full control over your installation.

#### 5.1.2. Basic controller functions

The basic controller functions are:

- Turning the unit ON/OFF.
- Selection of features:
  - quiet mode (refer to page 31),
  - weather dependent control.
- Temperature set point adjustment.

The remote controller supports a power cut off of maximum 2 hours. When autorestart is enabled (see "6. Field settings" on page 38) this allows a power supply shut down of 2 hours without user intervention.

#### 5.1.3. Clock function

The clock functions are:

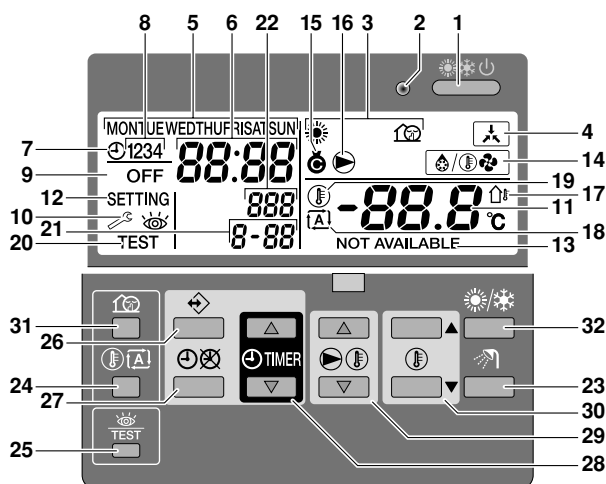
- 24 hour real time clock.
- Day of the week indicator.

#### 5.1.4. Schedule timer function

The schedule timer function allows the user to schedule the operation of the installation according to a daily or a weekly program.



## 5.2. Name and function of buttons and icons



### 1. ON/OFF BUTTON

The ON/OFF button starts or stops the space cooling/heating. Pressing the ON/OFF button consecutively too many times may cause malfunction of the system (maximum 20 times per hour).

### 2. OPERATION LED

The operation LED is lit during space heating operation. The LED blinks if a malfunction occurs. When the LED is OFF, space heating is inactive while the other operation modes can still be active.

### 3. OPERATION MODE ICONS

These icons indicate the current operation mode(s): heating () , cooling () or quiet mode () .

### 4. EXTERNAL CONTROL ICON

This icon indicates that the unit is working in a forced operation. As long as this icon is displayed, the remote controller cannot be operated.

### 5. DAY OF THE WEEK INDICATOR MONTUEWEDTHUFRISATSUN

This indicator shows the current day of the week. When reading or programming the schedule timer, the indicator shows the set day.

### 6. CLOCK DISPLAY 88:88

The clock display shows the current time. When reading or programming the schedule timer, the clock display shows the action time.

### 7. SCHEDULE TIMER ICON

This icon indicates that the schedule timer is enabled.

### 8. ACTION ICONS 1234

These icons indicate the programming actions for each day of the schedule timer.

### 9. OFF ICON OFF

This icon indicates that the OFF action is selected when programming the schedule timer.

### 10. INSPECTION REQUIRED and

These icons indicate that inspection is required on the installation. Consult your dealer.

### 11. TEMPERATURE DISPLAY -88.8°C

The display shows the current temperature of the installation either leaving water temperature or actual room temperature. When changing the room temperature set point, the set point will be flashing for 5 seconds and then return to the actual room temperature.

### 12. SETTING SETTING

This icon is displayed whenever the field setting mode is entered.

### 13. NOT AVAILABLE NOT AVAILABLE

This icon is displayed whenever a non-installed option is addressed or a function is not available. A function not available can mean insufficient permission level or can mean that a slave remote controller is used (see installation manual).

	Permission			
	Master	Slave	level 2	level 3
Operation ON/OFF	✓	✓	✓	✓
Setting the leaving water temperature	✓	✓	✓	—
Setting the room temperature	✓	✓	✓	✓
Quiet mode ON/OFF	✓	✓	—	—
Weather dependent set point operation ON/OFF	✓	✓	✓	—
Setting the clock	✓	✓	—	—
Programming the schedule timer	✓	—	—	—
Schedule timer operation ON/OFF	✓	—	✓	✓
Field settings	✓	—	—	—
Error code display	✓	✓	✓	✓
Test operation	✓	✓	—	—

✓ = operable

### 14. DEFROST/START UP MODE ICON (for EWYQ units only)

This icon indicates that the defrost/start up mode is active.

### 15. COMPRESSOR ICON

This icon indicates that the compressor in the unit of the installation is active.

### 16. PUMP ICON

This icon indicates that the circulation pump is active.

### 17. OUTDOOR TEMPERATURE DISPLAY

When this icon is flashing, the outdoor ambient temperature is displayed. Refer to "5.7. Temperature read-out mode" on page 31 for more information.

### 18. WEATHER DEPENDENT SET POINT ICON (for EWYQ units only)

This icon indicates that the controller will adapt the leaving water temperature set point automatically, based on the outdoor ambient temperature.

### 19. TEMPERATURE ICON

This icon is displayed when the actual room temperature or room temperature set point are shown.

The icon is also displayed when the temperature set point is set in schedule timer programming mode. Refer to "5.7. Temperature read-out mode" on page 31 for more information.

### 20. TEST OPERATION ICON TEST

This icon indicates that the unit runs in test mode.

### 21. FIELD SET CODE 8-88

This code represents the code from the field set list. Refer to the "6.1.1. Field settings table" on page 39.

### 22. ERROR CODE 888

This code refers to the error code list and is for service purposes only. Refer to the error code list "5.5.2. Error codes" on page 23.

### 23. BUTTON

This button has no function.

### 24. WEATHER DEPENDENT SET POINT BUTTON (for EWYQ units only)

This button enables or disables the weather dependent set point function which is available in space heating operation.

If the controller is set to permission level 3 (refer to "Field settings" in the installation manual), the weather dependent set point button will not be operable.

### 25. INSPECTION/TEST OPERATION BUTTON

This button is used for installation purposes and changing field settings. Refer to "6. Field settings" on page 38.



## 26. PROGRAMMING BUTTON

This multi-purpose button is used to program the controller. The function of the button depends on the actual status of the controller or on previous actions carried out by the operator.

## 27. SCHEDULE TIMER BUTTON

The main function of this multi-purpose button is to enable/disable the schedule timer.

The button is also used to set the clock and to program the controller. The function of the button depends on the actual status of the controller or on previous actions carried out by the operator.


## 28. TIME ADJUST BUTTONS and

These multi-purpose buttons are used to adjust the clock, to toggle between temperatures (water inlet/outlet temperature of the unit, outdoor ambient temperature, actual room temperature) and in schedule timer programming mode.

## 29. LEAVING WATER TEMPERATURE ADJUST BUTTONS and

These buttons are used to adjust the leaving water temperature set point in normal operation mode or in schedule timer programming mode.

If the controller is set to permission level 3 (refer to "Field settings" in the installation manual), the leaving water temperature adjust button will not be operable.

In case the weather dependent set point operation is selected, the unit has a floating set point. In this case, the  icon as well as the shift value (in case not zero) will display.

## 30. ROOM TEMPERATURE ADJUST BUTTONS and

These multi-purpose buttons are used to adjust the current room temperature set point in normal operation mode or in schedule timer programming mode.

When changing the room temperature set point, the set point value on the display will be flashing. After 5 seconds the display will show to the actual room temperature.

## 31. QUIET MODE BUTTON

This button enables or disables quiet mode.

If the controller is set to permission level 2 or 3 (refer to "Field settings" in the installation manual), the quiet mode button will not be operable.














## 32. The button is used to select the operation mode: space heating () or space cooling (.

## 5.3. Setting up the controller

After initial installation, the user can set the clock and day of the week.

The controller is equipped with a schedule timer that enables the user to schedule operations. Setting the clock and day of the week is required to be able to use the schedule timer.

### 5.3.1. Setting the clock

- 1 Hold down the  button for 5 seconds.  
The clock read-out and the day of week indicator start flashing.
- 2 Use the  and  buttons to adjust the clock.  
Each time the  or  button is pressed, the time will increase/decrease by 1 minute. Keeping the  or  button pressed will increase/decrease the time by 10 minutes.
- 3 Use the  or  button to adjust the day of the week.  
Each time the  or  button is pressed the next or previous day is displayed.
- 4 Press the  button to confirm the current set time and day of the week.  
  
To leave this procedure without saving, press the  button.  
If no button is pressed for 5 minutes the clock and day of the week will return to their previous setting.



## INFORMATION

- The clock needs to be set manually. Adjust the setting when switching from summertime to wintertime and vice versa.
- If the controller is set to permission level 2 or 3 (refer to "Field settings" in the installation manual), setting the clock will not be possible.
- A power failure exceeding 2 hours will reset the clock and the day of the week. The schedule timer will continue operation, but with a disordered clock. Therefore it will be needed to correct the clock and the day of the week.

### 5.3.2. Setting the schedule timer

To set the schedule timer, refer to chapter "5.9. Programming and consulting the schedule timer" on page 33.

## 5.4. Space cooling operation

Space cooling operation can be controlled in two different ways:

- based on room temperature,
- based on leaving water temperature (default).

The purpose of each operation and how the configuration is done, is explained below.

### 5.4.1. Room temperature control

In this mode, cooling will be activated as required by the room temperature set point. The set point can be set manually or through the schedule timer.











## INFORMATION

When using room temperature control, space cooling operation based on room temperature will have priority over leaving water control.

Note that it is possible that the leaving water temperature becomes lower than the set point if the unit is controlled by room temperature.

### Selecting space cooling operation




- 1 Use the  button to switch ON/OFF space cooling ().  
Icon  appears on the display as well as the corresponding actual room temperature.  
The operation LED  lights up.
- 2 Use the  and  buttons to set the desired room temperature.  
Temperature range for cooling: 16°C~32°C (room temperature)  
Refer to "5.9. Programming and consulting the schedule timer" on page 33 for setup of the schedule timer function.
- 3 Use the  and  buttons to select the leaving water temperature which you want to be used to cool down your system (for detailed information see "5.5.2. Leaving water temperature control (default)" on page 30).



## 5.4.2. Leaving water temperature control (default)

In this mode, cooling will be activated as required by the water temperature set point. The set point can be set manually or through the schedule timer.

### Selecting space cooling operation

- 1 Use the  button to switch ON/OFF space cooling (❄️).  
Icon ❄️ appears on the display as well as the corresponding water temperature set point.  
The operation LED ○ lights up.
- 2 Use the  and  buttons to set the desired leaving water temperature.  
Temperature range for cooling: 20°C~5°C (leaving water temperature).  
In case the unit has the low temperature cooling option, lower leaving water temperatures (<5°C) are possible, depending on the [A-04] Glycol concentration setting. For more information refer to "[6-03] Negative leaving water temperature setting" on page 20 and "[A-04] Glycol concentration setting" on page 21.

Refer to "Programming space" on page 34, "Programming space heating" on page 35 and "Programming quiet mode" on page 36 for setup of the schedule timer function.

### INFORMATION

- When an external room thermostat is installed, the thermo ON/OFF is determined by the external room thermostat. The remote controller is then operated in the leaving control mode and is not functioning as a room thermostat.
- The remote controller ON/OFF status always has priority over the external room thermostat!
- Setback operation and weather dependent set point are not available in cooling operation.

## 5.5. Space heating operation (🔥) (for EWYQ units only)

Space heating operation can be controlled on two different ways:

- based on room temperature,
- based on leaving water temperature (default).

The purpose of each operation and how the configuration is done, is explained below.

## 5.5.1. Room temperature control






In this mode, heating will be activated as required by the room temperature set point. The set point can be set manually or through the schedule timer.

### INFORMATION

When using room temperature control, space heating operation based on room temperature will have priority over leaving water control.

Note that it is possible that the leaving water temperature becomes higher than the set point if the unit is controlled by room temperature.


### Selecting space heating operation

- 1 Use the  button to switch ON/OFF space heating (🔥).  
Icon 🔥 appears on the display as well as the corresponding actual room temperature set point.  
The operation LED ○ lights up.
- 2 Use the  and  buttons to set the desired room temperature.  
Temperature range for heating: 16°C~32°C (room temperature)  
In order to avoid overheating, space heating is not operable when the outdoor ambient temperature rises above a certain temperature (see operation range).  
Refer to "5.9. Programming and consulting the schedule timer" on page 33 for setup of the schedule timer function.
- 3 Use the  and  buttons to select the leaving water temperature which you want to be used to heat up your system (for detailed information see "5.5.2. Leaving water temperature control (default)" on page 30).

### Automatic setback function

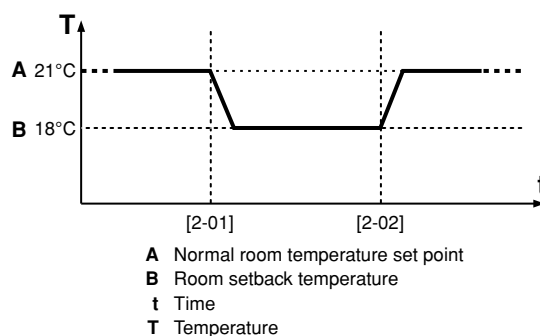
Setback function provides the possibility to lower the room temperature. The setback function can for instance be activated during the night because the temperature demands during night and day are not the same.

### INFORMATION

- Remark that the  icon will be flashing during setback operation.
- By default the setback function is enabled.
- The setback function can be combined with the automatic weather dependent set point operation.
- Setback function is an automatic daily scheduled function.

The setback function is configured through field settings. Refer to the chapter "6. Field settings" on page 38 for a detailed description how to set one or more field settings.

- [2-00] Status: defines whether the setback function is turned ON (1) or OFF (0)
- [2-01] Start time: time at which setback is started
- [2-02] Stop time: time at which setback is stopped
- [5-03] Room setback temperature







## INFORMATION

- While room temperature setback function is active, leaving water setback operation is also performed (see "5.5.2. Leaving water temperature control (default)" on page 30).
- Pay attention not to set the setback value too low, especially during colder periods (e.g. winter time). It is possible that the room temperature can not be reached (or it will take a much longer time) because of the big temperature difference.

### 5.5.2. Leaving water temperature control (default)

In this mode, heating will be activated as required by the water temperature set point. The set point can be set manually, through the schedule timer or weather dependent (automatic).

#### Selecting space heating operation

- Use the button to switch ON/OFF space heating ().  
Icon appears on the display as well as the corresponding water temperature set point.  
The operation LED lights up.
- Use the and buttons to set the desired leaving water temperature.  
Temperature range for heating: 25°C~50°C (leaving water temperature)  
In order to avoid overheating, space heating is not operable when the outdoor ambient temperature rises above a certain temperature (see operation range).

Refer to "Remote controller schedule timer" for setup of the schedule timer function.



## NOTICE

- When an external room thermostat is installed, the thermo ON/OFF is determined by the external room thermostat. The remote controller is then operated in the leaving control mode and is not functioning as a room thermostat.
- The remote controller ON/OFF status always has priority over the external room thermostat!

#### Selecting weather dependent set point operation

When weather dependent operation is active, the leaving water temperature is determined automatically depending on the outdoor temperature: colder outdoor temperatures will result in warmer water and vice versa. The unit has a floating set point. Activating this operation will result in a lower power consumption than use with a manually fixed leaving water set point.

During weather dependent operation, the user has the possibility to shift up or down the target water temperature by a maximum of 5°C. This shift value is the temperature difference between the temperature set point calculated by the controller and the real set point. E.g. a positive shift value means that the real temperature set point will be higher than the calculated set point.

It is advised to use the weather dependent set point because it adjusts the water temperature to the actual needs for space heating. It will prevent the unit from switching too much between thermo ON operation and thermo OFF operation when using the remote controller room thermostat or external room thermostat.



## INFORMATION

During this operation, instead of showing the water temperature set point, the controller shows the shift value which can be set by the user.

- Press the button 1 time to select weather dependent set point operation (or 2 times when the remote controller room thermostat function is used).

Icon appears on the display as well as the shift value. The shift value is not shown in case it is 0.

- Use the and buttons to set the shift value.

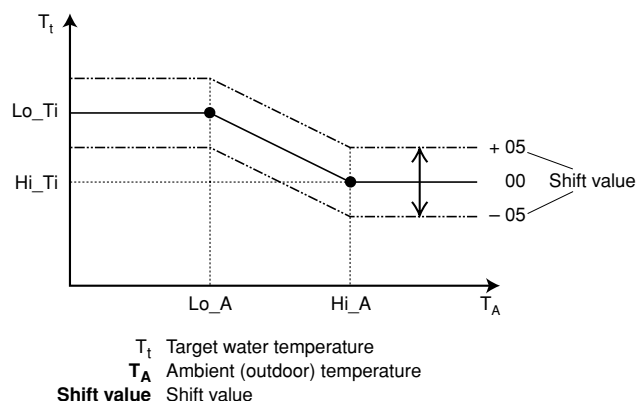
Range for the shift value: -5°C to +5°C

Icon will be displayed as long as the weather dependent set point operation is enabled.

- Press the button to deactivate weather dependent set point operation.

The and buttons are used to set the leaving water temperature.

Field settings define the parameters for the weather dependent operation of the unit. Refer to the chapter "6. Field settings" on page 38 for a detailed description how to set one or more field settings.



- [3-00] Low ambient temperature ( $Lo\_A$ ): low outdoor temperature.
- [3-01] High ambient temperature ( $Hi\_A$ ): high outdoor temperature.
- [3-02] Set point at low ambient temperature ( $Lo\_Ti$ ): the target outgoing water temperature when the outdoor temperature equals or drops below the low ambient temperature ( $Lo\_A$ ).  
Note that the  $Lo\_Ti$  value should be higher than  $Hi\_Ti$ , as for colder outdoor temperatures (i.e.  $Lo\_A$ ) warmer water is required.
- [3-03] Set point at high ambient temperature ( $Hi\_Ti$ ): the target outgoing water temperature when the outdoor temperature equals or rises above the high ambient temperature ( $Hi\_A$ ).  
Note that the  $Hi\_Ti$  value should be lower than  $Lo\_Ti$ , as for warmer outdoor temperatures (i.e.  $Hi\_A$ ) less warm water suffices.



## INFORMATION

If by mistake the value of [3-03] is set higher than the value of [3-02], the value of [3-03] will always be used.



## Automatic setback function

Setback function provides the possibility to lower the room temperature. The setback function can for instance be activated during the night because the temperature demands during night and day are not the same.

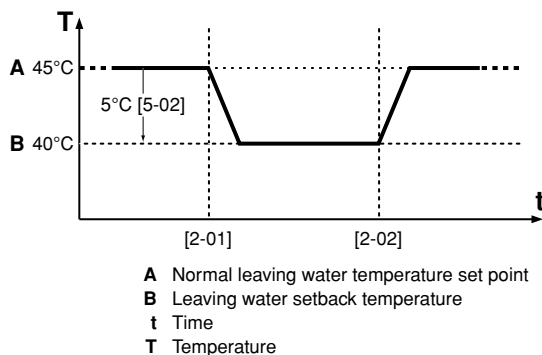


### INFORMATION

- Remark that the icon will be flashing during setback operation.
- By default the setback function is enabled.
- The setback function can be combined with the automatic weather dependent set point operation.
- Setback function is an automatic daily scheduled function.

The setback function is configured through field settings. Refer to the chapter "6. Field settings" on page 38 for a detailed description how to set one or more field settings.

- [2-00] Status: defines whether the setback function is turned ON (1) or OFF (0)
- [2-01] Start time: time at which setback is started
- [2-02] Stop time: time at which setback is stopped
- [5-02] Leaving water setback temperature (temperature drop)



## 5.6. Other operation modes

### 5.6.1. Start up operation ()

During start up, the icon displays, indicating that the heat pump is starting up and is not working in a steady state condition.

### 5.6.2. Defrost operation () (only for EWYQ units)

In space heating operation, freezing of the outdoor heat exchanger may occur due to low outdoor temperature. If this risk occurs, the system goes into defrost operation. It reverses the cycle and takes heat from the water system to prevent freezing of the outdoor system. After a maximum of 15 minutes of defrost operation, the system returns to space heating operation. During defrost operation, space heating operation is not possible.

### 5.6.3. Quiet mode operation ()

Quiet mode operation means that the unit works at reduced compressor speed so that the noise produced by the unit drops. This implies that it will take longer till the required temperature set point is reached. Beware of this when a certain level of heating is required indoors.

#### Selecting quiet mode operation

- 1 Use the button to activate quiet mode operation.

The icon displays.

If the controller is set to permission level 2 or 3 (refer to "Field settings" in the installation manual), the button is not operable.

- 2 Press the button again to deactivate quiet mode operation.

The icon disappears.

There are 3 different levels of quiet mode operation. The desired quiet mode is set through a field setting. Refer to the chapter "6. Field settings" on page 38 for a detailed description how to set one or more field settings.

## 5.7. Temperature read-out mode

On the remote controller, the actual temperatures can be displayed.

- 1 Push and hold the button for 5 seconds.

The leaving water temperature is displayed (icons and are blinking).

- 2 Use the and buttons to display:

- The entering water temperature (icons and are blinking and the icon is flashing slowly).

- The indoor temperature (icons and are blinking).

- The outdoor temperature (icons and are blinking).

- 3 Push the button again to leave this mode. If no button is pressed, the remote controller leaves the display mode after 10 seconds.



## 5.8. Schedule timer operation

In schedule timer operation, the installation is controlled by the schedule timer. The actions programmed in the schedule timer will be executed automatically.

The schedule timer is enabled (⊕ icon displayed) or disabled (⊖ icon not displayed) by pressing the ⊕/⊖ button.

### 5.8.1. Space cooling

Refer to "Programming space" on page 34.

4 actions can be programmed, these actions are repeated daily.

The space cooling schedule timer can be programmed in 2 different ways:

- based on the temperature set point (leaving water temperature and room temperature)
- based on the ON/OFF instruction.

The desired method is set through field setting. Refer to "6. Field settings" on page 38 for a detailed description how to set one or more field settings.

- **[0-04] Status:** defines whether ON/OFF instruction can be used in the schedule timer for space cooling.

The implementation and meaning of setting [0-04] and schedule settings are the same as for heating operation. See "Operation example: Schedule timer based on temperature set points" on page 32 and "Operation example: Schedule timer based on ON/OFF instruction" on page 33.

For cooling, no setback function is available.



#### INFORMATION

By default space cooling based on temperature set point (method 1) is enabled, so only temperature shifts are possible (no ON/OFF instruction).

### 5.8.2. Space heating

Refer to "Programming space heating" on page 35.

Four actions per day of the week can be programmed, totalling 28 actions.

The space heating schedule timer can be programmed in 2 different ways: based on the temperature set point (both leaving water temperature and room temperature) and based on the ON/OFF instruction.

The desired method is set through field setting. Refer to the chapter "6. Field settings" on page 38 for a detailed description how to set one or more field settings.

- **[0-03] Status:** defines whether ON/OFF instruction can be used in the schedule timer for space heating.



#### INFORMATION

By default space heating based on temperature set point (method 1) is enabled, so only temperature shifts are possible (no ON/OFF instruction).

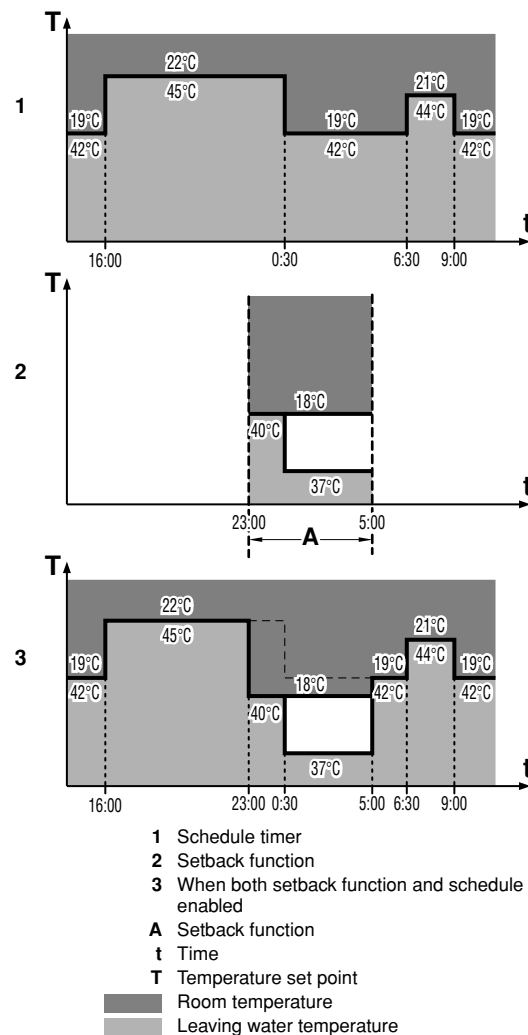
In the following tables both methods on how to interpret the schedule timer are shown.

Method 1 [0-03]=1 (default) Space heating based on temperature set point <sup>(a)</sup>	
During operation	During schedule timer operation the operation LED is lit continuously.
When pushing the ⊕/⊖ button	The schedule timer for space heating will stop and will not start again. The controller will be switched off (operation LED will stop working).
When pushing the ⊕/⊖ button	The schedule timer for space heating along with the quiet mode will be stopped and will not start again. The schedule timer icon will not be displayed anymore.

(a) For leaving water temperature and/or room temperature

**Operation example:** Schedule timer based on temperature set points

When setback function is enabled, the setback operation will have priority over the scheduled action in the schedule timer.

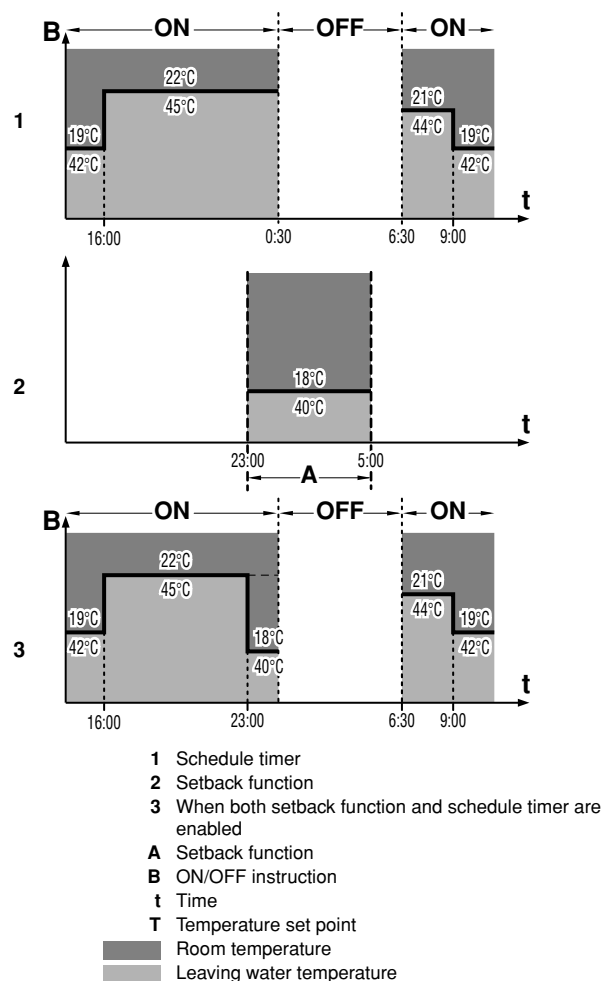


Method 2 [0-03]=0 Space heating based on ON/OFF instruction	
During operation	When the schedule timer switches space heating OFF, the controller will be switched off (operation LED will stop working).
When pushing the ⊕/⊖ button	The schedule timer for space heating will stop (when active at that moment) and will start again at the next scheduled ON function. The "last" programmed command overrules the "preceding" programmed command and will remain active until the "next" programmed command occurs. Example: imagine the actual time is 17:30 and actions are programmed at 13:00, 16:00 and 19:00. The "last" programmed command (16:00) overruled the "previous" programmed command (13:00) and will remain active until the "next" programmed command (19:00) occurs. So in order to know the actual setting, one should consult the last programmed command. It is clear that the "last" programmed command may date from the day before. Refer to "5.9.3. Consulting programmed actions" on page 36. The controller will be switched off (operation LED will stop working). However the schedule timer icon will stay displayed.
When pushing the ⊕/⊖ button	The schedule timer for space heating along with the quiet mode will be stopped and will not start again. The schedule timer icon will not be displayed anymore.



### Operation example: Schedule timer based on ON/OFF instruction

When setback function is enabled, the setback operation will have priority over the scheduled action in the schedule timer if ON instruction is active. If OFF instruction is active this will have priority over the setback function. At any time the OFF instruction will have the highest priority.



### 5.8.3. Quiet mode

Refer to "Programming quiet mode" on page 36.

Switch the mode on or off at a scheduled time. Four actions can be programmed per mode. These actions are repeated daily.

### INFORMATION

- When power returns after a power supply failure, the auto restart function reapplies the remote controller settings at the time of the power supply failure (if time is shorter than 2 hours). It is therefore recommended to leave the auto restart function enabled.
- The programmed schedule is time driven. Therefore, it is essential to set the clock and the day of the week correctly.  
Refer to "5.3. Setting up the controller" on page 28.
- When the schedule timer is not enabled (⊖ icon not displayed), schedule timer actions will not be executed!
- The programmed actions are not stored according to their timing but according to the time of programming. This means that the action that was programmed first gets action number 1, even though it is executed after other programmed action numbers.

## 5.9. Programming and consulting the schedule timer

### 5.9.1. Getting started

Programming the schedule timer is flexible (you can add, remove or alter programmed actions whenever required) and straightforward (programming steps are limited to a minimum). However, before programming the schedule timer, remind:

- Familiarise yourself with the icons and the buttons. You will need them when programming. Refer to "5.2. Name and function of buttons and icons" on page 27.
- Fill out the form at the very end of this manual. This form can help you define the required actions for each day.
- Take your time to enter all data accurately.
- Try to program the actions in a chronological way: start with action 1 for the first action and end with the highest number for the last action. This is not a requirement but will simplify the interpretation of the program later.
- If 2 or more actions are programmed for the same day and at the same time, only the action with the highest action number will be executed.

#### Example:

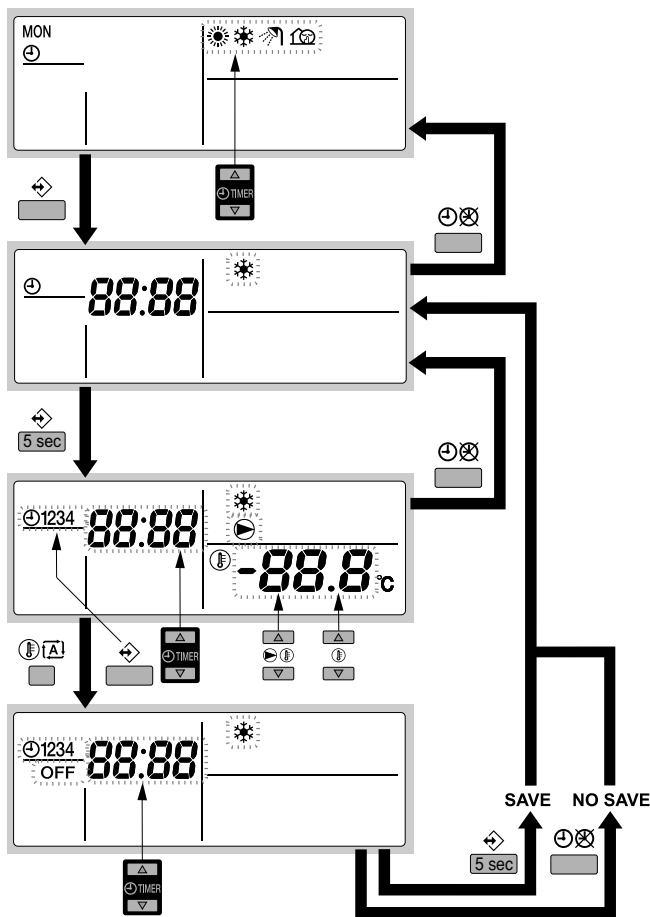
Programmed actions				Executed actions			
	Time (hour)	Temperature (°C)			Time (hour)	Temperature (°C)	
4	18:00	—	OFF	1	06:00	—	21
5	08:00	—	23	2	08:00	—	23
6	06:00	—	21	3	18:00	—	OFF
7	18:00	—	26				

- You can always alter, add or remove the programmed actions later.



## 5.9.2. Programming

### Programming space



Programming space cooling is carried out as follows:



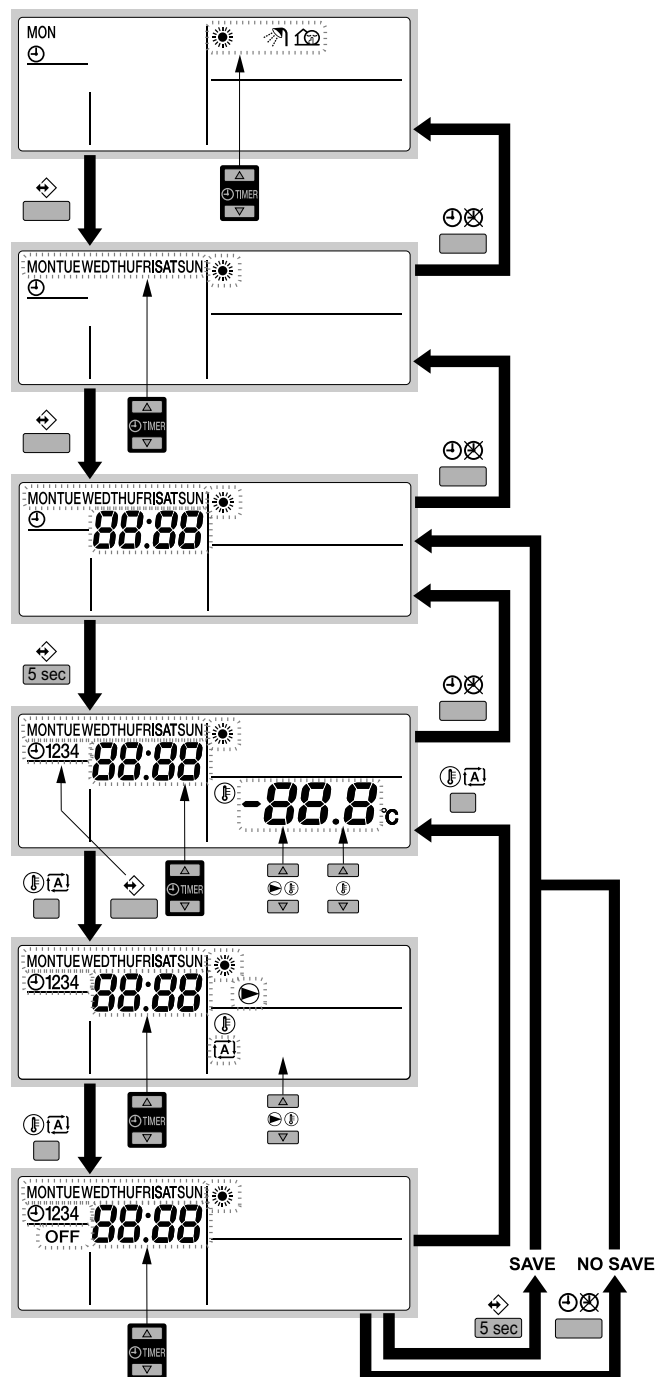
#### INFORMATION

Returning to previous steps in the programming procedure without saving modified settings is done by pressing the button.

- 1 Press the button to enter the programming/consulting mode.
- 2 Select the operation mode you would like to program by means of the and buttons.  
The actual mode is blinking.
- 3 Press the button to confirm the selected mode.  
The time is blinking.
- 4 Consult the action by means of the and buttons.
- 5 Hold down the button for 5 seconds to program the detailed actions.  
The first programmed action appears.
- 6 Use the button to select the action number you would like to program or to modify.
- 7 Use the and buttons to set the correct action time.
- 8 Use the and buttons to set the leaving water temperature.
- 9 Use the and buttons to set the room temperature.
- 10 Use the button to select **OFF** to switch cooling and the remote controller off.
- 11 Repeat steps 6 to 10 to program the other actions.  
When all actions have been programmed, make sure that the display shows the highest action number you would like to save.
- 12 Press the button for 5 seconds to store the programmed actions.  
If the button is pressed when action number 3 is displayed, actions 1, 2 and 3 are stored but 4 is deleted.  
You automatically return to step 5.  
By pressing the button several times, you return to previous steps in this procedure and finally return to normal operation.
- 13 You automatically return to step 5, start again to program the following day.



## Programming space heating



Programming space heating is carried out as follows:



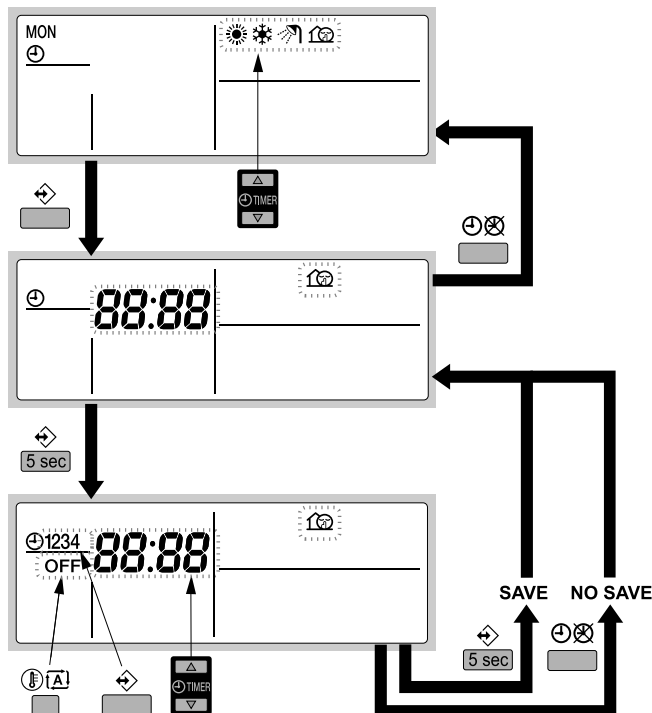
### INFORMATION

Returning to previous steps in the programming procedure without saving modified settings is done by pressing the button.

- 1 Press the button to enter the programming/consulting mode.
- 2 Select the operation mode you would like to program by means of the and buttons.  
The actual mode is blinking.
- 3 Press the button to confirm the selected mode.  
The actual day is blinking.
- 4 Select the day you would like to consult or to program by means of the and buttons.  
The selected day is blinking.
- 5 Press the button to confirm the selected day.
- 6 Hold down the button for 5 seconds to program the detailed actions.  
The first programmed action of the selected day appears.
- 7 Use the button to select the action number you would like to program or to modify.
- 8 Use the and buttons to set the correct action time.
- 9 Use the and buttons to set the leaving water temperature.
- 10 Use the and buttons to set the room temperature.
- 11 Use the and buttons to select:
  - OFF: to switch heating and the remote controller off.
  - : to select automatic temperature calculation for leaving water temperature
 Use the and buttons to set the appropriate shift value (refer to "5.3.2. Setting the schedule timer" on page 28 for more information about weather dependent set point).
- 12 Repeat steps 7 to 11 to program the other actions of the selected day.  
When all actions have been programmed, make sure that the display shows the highest action number you would like to save.
- 13 Press the button for 5 seconds to store the programmed actions.  
If the button is pressed when action number 3 is displayed, actions 1, 2 and 3 are stored but 4 is deleted.  
You automatically return to step 6.  
By pressing the button several times, you return to previous steps in this procedure and finally return to normal operation.
- 14 You automatically return to step 6, start again to program the following day.



## Programming quiet mode



Programming quiet mode is carried out as follows:



### INFORMATION

Returning to previous steps in the programming procedure without saving modified settings is done by pressing the button.

- 1 Press the button to enter the programming/consulting mode.
- 2 Select the operation mode you would like to program by means of the and buttons.  
The actual mode is blinking.
- 3 Press the button to confirm the selected mode.
- 4 Consult the actions by means of the and buttons.
- 5 Hold down the button for 5 seconds to program the detailed actions  
The first programmed action appears.
- 6 Use the button to select the action number you would like to program or to modify.
- 7 Use the and buttons to set the correct action time.
- 8 Use the button to select or deselect OFF as action.
- 9 Repeat steps 6 to 8 to program the other actions of the selected mode.  
When all actions have been programmed, make sure that the display shows the highest action number you would like to save.
- 10 Press the button for 5 seconds to store the programmed actions.  
If the button is pressed when action number 3 is displayed, actions 1, 2 and 3 are stored but 4 is deleted.  
By pressing the button several times, you return to previous steps in this procedure and finally return to normal operation.
- 11 You automatically return to step 5, start again to program the following day.

## 5.9.3. Consulting programmed actions

### Consulting space heating actions

Consulting space cooling heating, space heating or quiet mode is carried out as follows.



### INFORMATION

Returning to previous steps in this procedure is done by pressing the button.

- 1 Press the button to enter the programming/consulting mode.
- 2 Select the operation mode you would like to consult by means of the and buttons.  
The actual mode is blinking.
- 3 Press the button to confirm the selected mode.  
The actual day is blinking.
- 4 Select the day you would like to consult by means of the and buttons.  
The selected day is blinking.
- 5 Press the button to confirm the selected day.  
The first programmed action of the selected day appears.
- 6 Use the and buttons to consult the other programmed actions of that day.  
This is called the readout mode. Empty program actions (e.g. 4) is not displayed.  
By pressing the button several times, you return to previous steps in this procedure and finally return to normal operation.

## 5.9.4. Tips and tricks

### Programming the next day(s)

After confirming the programmed actions of a specific day (i.e. after pressing the button for 5 seconds), press the button once. You can now select another day by using the and buttons and restart consulting and programming.

### Copying programmed actions to next day

In space heating program it is possible to copy all programmed actions of a specific day to the next day (e.g. copy all programmed actions from "MON" to "TUE").


To copy programmed actions to the next day, proceed as follows:


- 1 Press the button.  
The actual mode is blinking.
- 2 Use the and buttons to select the mode you want to program.  
The selected mode is blinking.  
You can leave programming by pressing the button.
- 3 Press the button to confirm the selected mode.  
The actual day is blinking.
- 4 Select the day you would like to copy to the next day by means of the and buttons.  
The selected day is blinking.  
You can return to step 2 by pressing the button.
- 5 Press the and buttons simultaneously for 5 seconds.  
After 5 seconds the display will show the next day (e.g. "TUE" if "MON" was selected first). This indicates that the day has been copied.  
You can return to step 2 by pressing the button.








### Deleting one or more programmed actions

Deleting one or more programmed actions is done at the same time as storing the programmed actions.









When all actions for one day have been programmed, make sure that the display shows the highest action number you would like to save. By pressing the  button for 5 seconds, you store all actions except those with a higher action number than the one that is displayed.

E.g. when the  button is pressed when action number 3 is displayed, actions 1, 2 and 3 are stored but 4 is deleted.

### Deleting a mode

- 1 Press the  button.  
The actual mode is blinking.
- 2 Use the  and  buttons to select the mode you want to delete.  
The selected mode is blinking.
- 3 Press the  and  button simultaneously for 5 seconds to delete the selected mode.

### Deleting a day of the week

- 1 Press the  button.  
The actual mode is blinking.
- 2 Use the  and  buttons to select the mode you want to delete.  
The selected mode is blinking.
- 3 Press the  button to confirm the selected mode.  
The actual day is blinking.
- 4 Select the day you would like to delete by means of the  and  buttons.  
The selected day is blinking.
- 5 Press the  and  button simultaneously for 5 seconds to delete the selected day.

## 5.10. Operating the optional demand PCB

An optional PCB EKR1AHTA can be connected to the unit and be used to remotely control the unit

There are 3 inputs that allow

- remotely switching between cooling and heating
- remote thermo on - off
- remote unit on - off

For more details about this option kit, refer to the wiring diagram of the unit



### INFORMATION

- See also setting [6-01] in "[6] Option setup" on page 20 for setting the function of your preference.
- Signal (voltage free) must take at least 50 ms.

## 5.11. Operating the optional external control adapter

An optional control adapter PCB DTA104A62 can be connected to the unit and be used to remotely control 1 or more units

By short circuiting contacts on the option kit PCB, you can

- reduce capacity to about 70%,
- reduce capacity to about 40%,
- force thermo off,
- capacity save (fan low speed turn, compressor frequency control).

For more details about this option kit, refer to a separate instruction that is delivered with the unit

## 5.12. Operating the optional remote controller

If besides the main remote controller the optional remote controller is installed as well, the main remote controller (master) can access all settings while the second remote controller (slave) can not access schedule settings and parameter settings.

Refer to the installation manual for more details.



## 6. FIELD SETTINGS



### NOTICE

The default values mentioned in "6.1.1. Field settings table" on page 39 are the values from factory. The actual initial values shall be selected according to your application. These values shall be confirmed by your installer.



### CAUTION

- The field settings [4] and [5] depend on the applicable legislation.
- Before changing these settings, the new values shall be confirmed by the installer and/or shall be according to the applicable legislation.

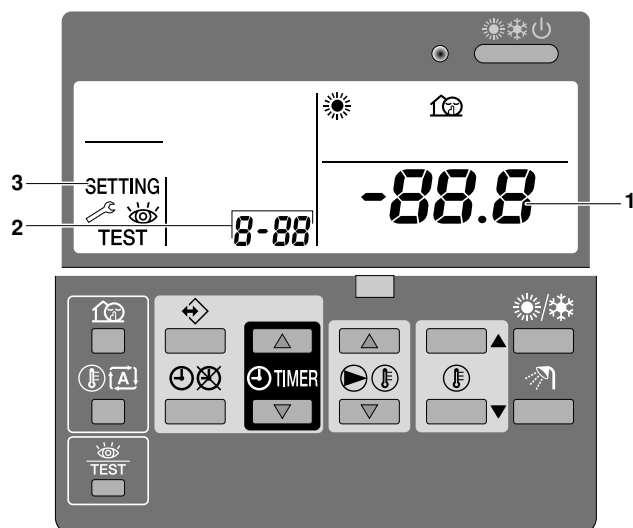
The unit shall be configured by the installer to match the installation environment (outdoor climate, installed options, etc.) and user demand. However, the field settings mentioned in "6.1.1. Field settings table" on page 39 can be modified to customer preferences. Thereto, a number of so called field settings are available. These field settings are accessible and programmable through the remote controller.

Each field setting is assigned a 3-digit number or code, for example [1-03], which is indicated on the remote controller display. The first digit [1] indicates the 'first code' or field setting group. The second and third digit [03] together indicate the 'second code'.

A list of all field settings and default values is given under "6.1.1. Field settings table" on page 39. In this same list, we provided for 2 columns to register the date and value of altered field settings at variance with the default value.

## 6.1. Procedure

To change one or more field settings, proceed as follows.



- 1 Press the button for a minimum of 5 seconds to enter FIELD SET MODE.  
The **SETTING** icon (3) will be displayed. The current selected field setting code is indicated **8-88** (2), with the set value displayed to the right **-88.8** (1).
- 2 Press the button to select the appropriate field setting first code.
- 3 Press the button to select the appropriate field setting second code.
- 4 Press the button and button to change the set value of the select field setting.
- 5 Save the new value by pressing the button.
- 6 Repeat step 2 through 4 to change other field settings as required.
- 7 When finished, press the button to exit FIELD SET MODE.



### NOTICE

Changes made to a specific field setting are only stored when the button is pressed. Navigating to a new field setting code or pressing the button will discard the change made.



### INFORMATION

- Before shipping, the set values have been set as shown under "6.1.1. Field settings table" on page 39.
- When exiting FIELD SET MODE, "88" may be displayed on the remote controller LCD while the unit initialises itself.



### NOTICE

- When running through the field settings you may notice that there are some more field settings as there are mentioned in the "6.1.1. Field settings table" on page 39. **These field settings are not applicable and may not be changed!**
- For more information about installation related setting, see installation manual of the unit. For settings different from the default value, contact your installer.



## 6.1.1. Field settings table

First code	Second code	Setting name	Installer setting at variance with default value				Default value	Range	Step	Unit
			Date	Value	Date	Value				
0	Remote control setup									
	00	User permission level					2	2~3	1	—
	01	Room temperature compensation value					0	-5~5	0.5	°C
	02	Not applicable. Do not change the default value.					1	—	—	—
	03	Status: space heating schedule timer mode Method 1=1 / Method 2=0					1 (ON)	0/1	—	—
	04	Status: space cooling schedule timer mode Method 1=1 / Method 2=0					1 (ON)	0/1	—	—
1	Settings are not applicable									
	00	Not applicable. Do not change the default value.					1	—	—	—
	01	Not applicable. Do not change the default value.					1:00	—	—	—
	02	Not applicable. Do not change the default value.					0	—	—	—
	03	Not applicable. Do not change the default value.					15:00	—	—	—
2	Automatic setback function									
	00	Status: setback operation					1 (ON)	0/1	—	—
	01	Setback operation start time					23:00	0:00~23:00	1:00	hour
	02	Setback operation stop time					5:00	0:00~23:00	1:00	hour
3	Weather dependent set point									
	00	Low ambient temperature (Lo_A)					-10	-20~5	1	°C
	01	High ambient temperature (Hi_A)					15	10~20	1	°C
	02	Set point at low ambient temperature (Lo_Ti)					40	25~80	1	°C
	03	Set point at high ambient temperature (Hi_Ti)					25	25~80	1	°C
4	Settings are not applicable									
	00	Not applicable. Do not change the default value.					1	—	—	—
	01	Not applicable. Do not change the default value.					Fri	—	—	—
	02	Not applicable. Do not change the default value.					23:00	—	—	—
5	Automatic setback and disinfection set point									
	00	Not applicable. Do not change the default value.					70	—	—	—
	01	Not applicable. Do not change the default value.					10	—	—	—
	02	Leaving water setback temperature					5	0~10	1	°C
	03	Room setback temperature					18	17~23	1	°C
	04	Not applicable. Do not change the default value.					1	—	—	—
6	Option setup									
	01	Optional room thermostat installed					0	0~2	—	—
	03	Negative leaving water temperature setting					0	0~-10	-1	°C
7	Option setup									
	00	Forced pump operation					1 (ON)	0/1	—	—
8	Option setup									
	00	Remote controller temperature control					0 (OFF)	0/1	—	—
	01	Not applicable. Do not change the default value.					1	—	—	—
	03	Not applicable. Do not change the default value.					1	—	—	—
	04	Status: freeze-up prevention					0	0~2	1	—
9	Automatic temperature compensation									
	00	Leaving water temperature compensation value (heating)					0	-2~2	0.2	°C
	01	Leaving water thermistor auto corrective function					1 (ON)	0/1	1	—
	02	Not applicable. Do not change the default value.					0	—	—	—
	03	Leaving water temperature compensation value (cooling)					0	-2~2	0.2	°C
	04	Not applicable. Do not change the default value.					0	—	—	—



First code	Second code	Setting name	Installer setting at variance with default value				Default value	Range	Step	Unit
			Date	Value	Date	Value				
A	Option setup									
	00	Not applicable. Do not change the default value.					0	—	—	—
	01	Not applicable. Do not change the default value.					0	—	—	—
	02	Not applicable. Do not change the default value.					5	—	—	—
	03	Allowable overshoot on leaving water					3	1~5	0.5	°C
	04	Ethylene glycol concentration					0	0~1	1	—
b	Settings are not applicable									
	00	Not applicable. Do not change the default value.					35	—	—	—
	01	Not applicable. Do not change the default value.					45	—	—	—
	02	Not applicable. Do not change the default value.					1	—	—	—
	03	Not applicable. Do not change the default value.					70	—	—	—
	04	Not applicable. Do not change the default value.					70	—	—	—
C	Leaving water temperature limits									
	00	Set point: heating leaving water maximum temperature					50	37~50	1	°C
	01	Set point: heating leaving water minimum temperature					25	25~37	1	°C
	02	Set point: cooling leaving water maximum temperature					20	18~22	1	°C
	03	Set point: cooling leaving water minimum temperature					5	Q <sup>(a)</sup> ~18	1	°C
	04	Not applicable. Do not change the default value.					0	—	—	—
d	Settings are not applicable									
	00	Not applicable. Do not change the default value.					10	—	—	—
	01	Not applicable. Do not change the default value.					30	—	—	—
	02	Not applicable. Do not change the default value.					15	—	—	—
	03	Not applicable. Do not change the default value.					15	—	—	—
	04	Not applicable. Do not change the default value.					40	—	—	—
E	Service mode									
	00	Not applicable. Do not change the default value.					0	—	—	—
	01	Not applicable. Do not change the default value.					0	—	—	—
	02	Not applicable. Do not change the default value.					0	—	—	—
	03	Not applicable. Do not change the default value.					1	—	—	—
	04	Pump only operation					0	0~25	1	—
F	Settings are not applicable									
	00	Not applicable. Do not change the default value.					5	—	—	—
	01	Not applicable. Do not change the default value.					0	—	—	—
	02	Not applicable. Do not change the default value.					1	—	—	—
	03	Not applicable. Do not change the default value.					10	—	—	—
	04	Not applicable. Do not change the default value.					50	—	—	—

(a) Refer to page 21 where [C-03] is explained.



## 7. MAINTENANCE

### 7.1. Important information regarding the refrigerant used

This product contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Refrigerant type: R410A

GWP<sup>(1)</sup> value: 1975

<sup>(1)</sup> GWP = global warming potential

Periodical inspections for refrigerant leaks may be required depending on the applicable legislation. Please contact your local dealer for more information.

### 7.2. Maintenance activities

In order to ensure optimal availability of the unit, a number of checks and inspections on the unit and the field wiring have to be carried out at regular intervals, preferably yearly. This maintenance should be carried out by your local Daikin technician (see installation manual).

The only maintenance which may be required by the operator is:

- keeping the remote controller clean by means of a soft damp cloth,
- checking if the water pressure indicated on the manometer is above 1 bar.



#### CAUTION

If the supply cord is damaged, it must be replaced by the manufacturer, its agent or similar qualified persons in order to avoid hazards.

### 7.3. Standstill



#### NOTICE

During longer periods of standstill, e.g. during winter with a cooling only application and option heater tape installed (refer to "3.1. Check that you have all optional equipment" on page 3) DO NOT switch off the power supply to the unit. Otherwise power supply to the heater tape is cut off and the piping will freeze.

See "4.5.5. Protecting the water circuit against freezing" on page 11 if you want to cut off power supply during winter stand still.

## 8.1. Error codes

Error code	Failure cause	Corrective action
R1	Failure of writing memory (EEPROM error)	Contact your local dealer.
R6	Malfunction water circuit	<ul style="list-style-type: none"><li>• Make sure waterflow is possible (open all valves in the circuit).</li><li>• Force clean water through the unit.</li></ul>
R9	R410A expansion valve error (K11E/K21E)	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
RE	Water system warning	<ul style="list-style-type: none"><li>• Check filter.</li><li>• Make sure all valves are open.</li><li>• Contact your local dealer.</li></ul>
RJ	Capacity error	Contact your local dealer.
C1	Bad ACS communication	Contact your local dealer.
C4	R410A liquid thermistor error (R13T/R23T)	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
C9	Returning water thermistor error (R12T/R22T)	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
CR	Heating leaving water thermistor error (R11T/R12T)	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
CJ	Remote controller thermostat thermistor error	Contact your local dealer.
E3	High pressure error (SENPH/S1PH)	<ul style="list-style-type: none"><li>• Make sure the circuit is filled with water (no air inside, e.g. is the air purge open?)</li><li>• Make sure water flow is possible (open all valves in the circuit).</li><li>• Make sure the water filter is not blocked.</li><li>• Make sure all refrigerant stop valves are open.</li><li>• Contact your local dealer.</li></ul>
E4	Low pressure error (SENPL)	Contact your local dealer.
J7	R410A suction thermistor error (R14T/R24T)	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
U1	The phases of the power to the unit is reversed.	Exchange two of the three phases (L1, L2, L3) to make a positive phase connection.
U2	Power supply error	<ul style="list-style-type: none"><li>• Check wiring connections.</li><li>• Contact your local dealer.</li></ul>
UR	Type connection problem	<ul style="list-style-type: none"><li>• Wait till initialisation between outdoor module and hydro module finished (after power ON, wait at least 12 minutes).</li><li>• Contact your local dealer.</li></ul>
UH	Address error	Contact your local dealer.

## 8. TROUBLESHOOTING

The guidelines below might help to solve your problem. If you cannot solve the problem, consult your installer.

POSSIBLE CAUSES	CORRECTIVE ACTIONS
No readings on the remote controller (blank display)	<ul style="list-style-type: none"><li>• Check if the mains power is still connected to your installation.</li><li>• The benefit kWh rate power supply is active (see installation manual).</li></ul>
One of the error codes appears	Consult your local dealer. Refer to the installation manual for a detailed list of error codes.
The schedule timer does work but the programmed actions are executed at the wrong time. (e.g. 1 hour too late or too early)	Check if the clock and the day of the week are set correctly, correct if necessary.
The schedule timer is programmed but does not work.	In case the ☉ icon is not displayed, push the ☉ button to enable the schedule timer.
Capacity shortage	Consult your local dealer.
Temperature values displayed on the remote controller (remote controller) are displayed in °F instead of °C.	To change the display back to °C, push [▲] and [▼] buttons simultaneously for 5 seconds. Execute same procedure to change back to the °F display. The default temperature display is in °C.

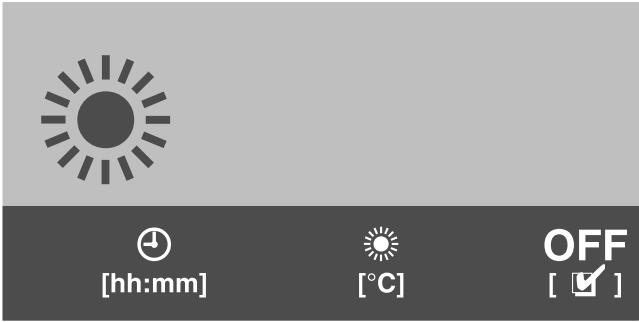
## 9. DISPOSAL REQUIREMENTS

Dismantling of the unit, treatment of the refrigerant, of oil and of other parts must be done in accordance with the applicable legislation.

Do not try to dismantle the system yourself: the dismantling of the system, treatment of the refrigerant, of oil and other parts must be done by a qualified installer in accordance with the applicable legislation.

Units must be treated at a specialized treatment facility for re-use, recycling and recovery. By ensuring this product is disposed off correctly, you will help to prevent potential negative consequences for the environment and human health. Please contact the installer or local authority for more information.



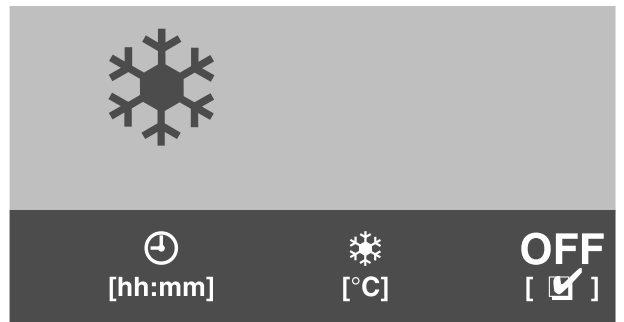


**OFF**  
[ ☒ ]


TUE			
1	:		<input type="checkbox"/>
2	:		<input type="checkbox"/>
3	:		<input type="checkbox"/>
4	:		<input type="checkbox"/>

THU			
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2	:		<input type="checkbox"/>
3	:		<input type="checkbox"/>
4	:		<input type="checkbox"/>

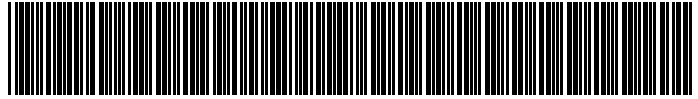
SAT			
1	:		<input type="checkbox"/>
2	:		<input type="checkbox"/>
3	:		<input type="checkbox"/>
4	:		<input type="checkbox"/>



**OFF**  
[ ☒ ]







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