

AIR TO WATER HEAT PUMP Owner's Manual



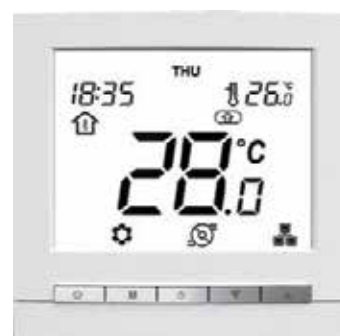
Monobloc Outdoor Unit

Model name: _____

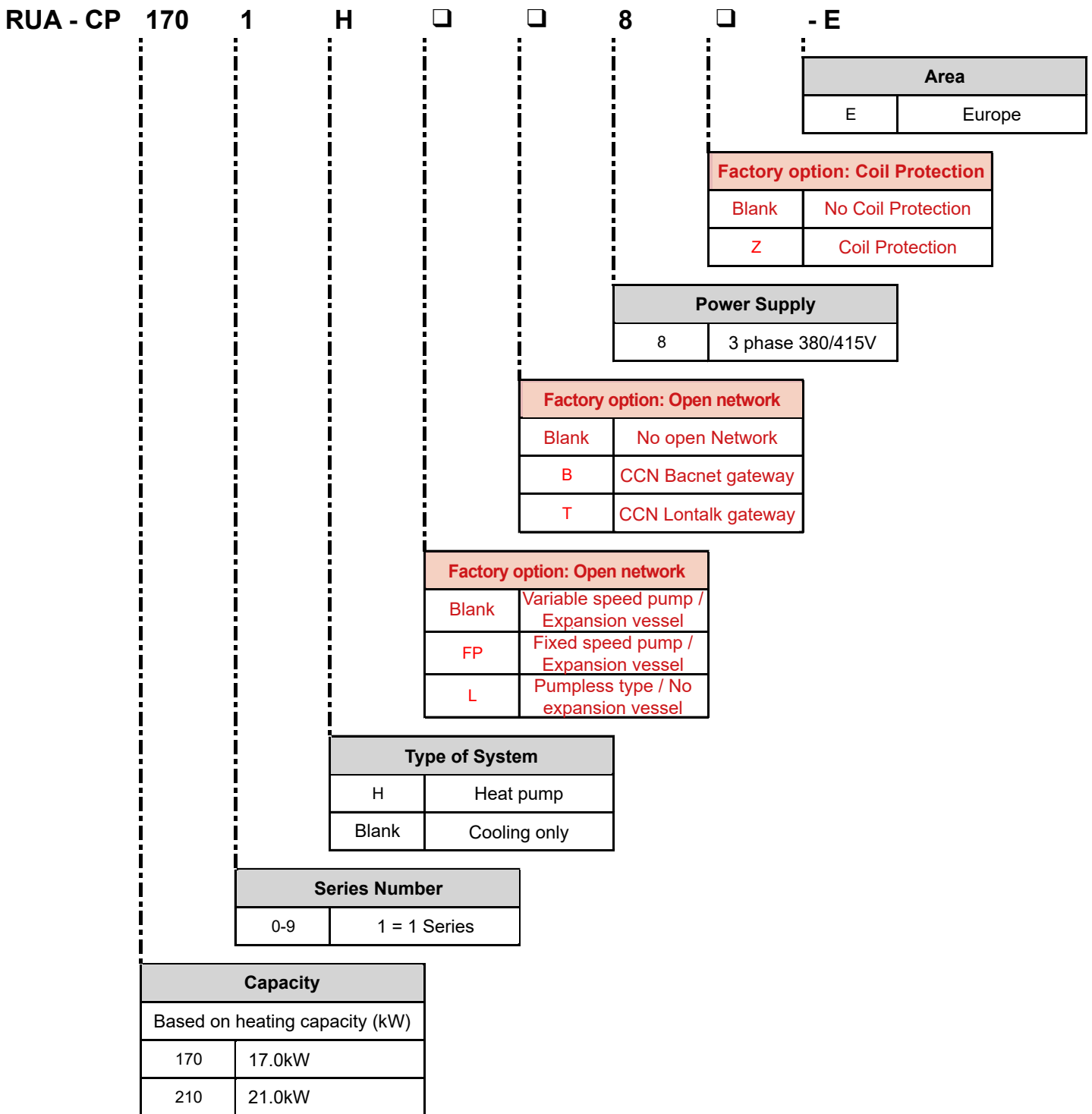
RUA-CP1701H*

RUA-CP2101H*

* See next page for model naming convention



Model naming convention:-



Thank you very much for purchasing TOSHIBA Air to Water Heat Pump. Please read this owner's manual carefully before using the system.

- Be sure to obtain the "Owner's manual" and "Installation manual" from constructor (or dealer).
Request to constructor or dealer
- Please clearly explain the contents of the Owner's manual before handing it over to the Customer.

REFRIGERANT

This Air to Water Heat Pump uses an HFC refrigerant (R410A) in order to prevent destruction of the ozone layer.

This appliance is not intended for use by person (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.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Contents

1	Safety precautions	3
2	Names and functions of parts	5
3	How to use functions.....	8
4	User maintenance	18
5	Air to Water Heat Pump operation and performance	18
6	Troubleshooting.....	20

1 Safety precautions

The manufacturer shall not assume any liability for the damage caused by not observing the description of this manual.



DANGER

- **Do not attempt to install this unit yourself.**
- **This unit requires a qualified installer.**
- **Do not attempt to repair the unit yourself.**
- **This unit has no components which you can repair.**
- **Opening or removing the cover will expose you to dangerous voltages.**
- **Turning off the power supply will prevent potential electric shock.**



WARNING

Installation warnings

- Be sure to ask a dealer or a store specialised in electrical work to install the Air to Water Heat Pump.
- The Air to Water Heat Pump should be installed by a suitably qualified installer, if not; this may lead to problems such as water leaks, electric shock, fire, etc.
- Ensure the correct grounding procedures are applied when installing the Air to Water Heat Pump.
- Do not connect the earth wire to gas pipes, water pipes, lightning rods or telephone earth wires.
- Should the Air to Water Heat Pump be improperly grounded, this could lead to an electric shock.
- Products and parts to be used in combination with this product must be specified products and parts that meet prescribed specifications. If unspecified products or parts are used, a failure, smoke, fire, or electric shock may be caused.

Operation warnings

- Avoid injury or damage to the Monobloc Outdoor Unit by never inserting fingers or sticks into the air discharge or air intake of the Monobloc Outdoor Unit. During operation the fans run at high speeds.
- Should you notice something unusual with the Air to Water Heat Pump (such as a burning smell or low heating power), immediately turn off the main switch and circuit breaker from the main power supply to stop the Air to Water Heat Pump, and contact the dealer.
- If there is a suspected problem with the operation of the Air to Water Heat Pump, continuous operation is not recommended, operational failures may lead to machine breakdown, electric shock, a fire, etc.

Warnings at movement and repair

- Do not attempt to move or repair the unit yourself.
- Due to the presence of high voltage, removal of any covers may result in an electric shock.
- Should there be any requirements for the Air to Water Heat Pump to be moved, always consult the dealer or qualified installer.
- Should the Air to Water Heat Pump be improperly installed, it may lead to electric shock or fire.
- Whenever the Air to Water Heat Pump requires repair, request assistance from the dealer.
- Should the Air to Water Heat Pump be improperly repaired, the result may lead to electric shock or fire.



CAUTION

This appliance is not intended for use by person (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.

To disconnect the appliance from the main power supply.

This appliance must be connected to the main power supply using a circuit breaker or switch with a contact separation of at least 3 mm.

Installation cautions

- Be sure to connect the Air to Water Heat Pump to a dedicated power supply using the rated voltage. Failure to do so may cause the unit to break down or cause a fire.
- Do not install the unit in a place where there is a risk that flammable gas may leak.
- An accumulation of flammable gases around the unit may result in a fire.

Operation cautions

- To ensure satisfactory performance, please read this manual carefully before operating the Air to Water Heat Pump system.
- Do not install the Air to Water Heat Pump in special-purpose rooms such as a ship or any kind of vehicle. Doing so could harm machine performance.
- Perform occasional checks to the concrete supports underneath the Monobloc Outdoor Unit. If the base is left damaged or deteriorated, the unit may topple over which could result in possible injury.
- Check from time to time that the Monobloc Outdoor Unit mounts are not damaged. If the mounts are left damaged, the unit may drop or topple over, resulting in possible injury.
- Do not wash the unit with water. This could cause an electric shock.
- Do not use alcohol, benzene, thinner, glass cleaner, polishing powder, or other solvent for cleaning the unit because they can deteriorate and damage the Air to Water Heat Pump.
- Before cleaning the unit, be sure to turn off the main switch or circuit breaker.
- Do not place anything, or step, on the unit, this could cause the unit to fall or topple over which may result in possible injury.
- To achieve maximum performance, the Air to Water Heat Pump must operate within the temperature range specified in the instructions. Failure to do so may cause malfunction, break down, or water to leak from the unit.
- Clear away snow before it accumulates on the outdoor unit. Accumulated snow can lead to malfunction and damage.
- Do not allow the obstruction of air flow around the Monobloc Outdoor Unit; Do not place any items within the specified installation service space requirements. Obstructed air flow can lower performance and cause damage.
- Check for water leaks. In communal housing, leaking water may damage lower floors. Check for water leaks everyday.
- Do not touch the water pipes, refrigerant pipes, or joints. These may become extremely hot. Do not drink water produced by the Air to Water Heat Pump.
- After extended use, fresh water may become contaminated by the Monobloc Outdoor Unit, due to deterioration of pipe materials, etc.
- If fresh water contains solid matter, is discoloured, turbid or smells, DO NOT DRINK IT.
- Call for equipment inspection immediately.
- Use source water that satisfies water quality standard.
- When the unit will not be used for a long period of time, ask your dealer or a qualified service shop to drain the water inside the Monobloc Outdoor Unit in order to prevent the water quality from changing.
- When restarting use, ask your dealer or a qualified service shop to charge the unit with water and perform a test run.
- Ask your dealer or a qualified service shop to periodically clean the strainer.
- Ask your dealer or a qualified service shop to confirm that the relief valve is operating correctly.

2 Names and functions of parts

■ Quick Start

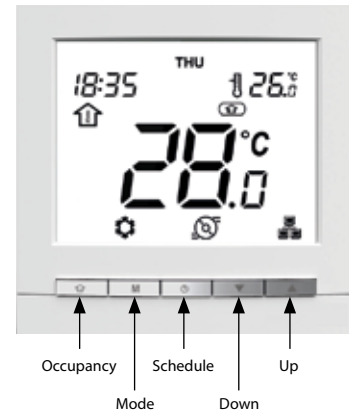
Your system is controlled by a wired wall-mounted Remote Controller (RC) that should be installed inside your home.

This manual provides guidelines on how to use this interface effectively. If you have any questions regarding the display and its configuration, please contact your installer for more information.

Alternatively the Air to Water system can be controlled by a building management system (BMS). The BMS can either use direct switched inputs and outputs or use a communication bus (JBUS/Modbus/ Bacnet/ LonWorks).

NOTE

The owner's manual only describes operation of the system with the RC, please contact your installer for further instructions if BMS control has been installed.



■ Key Features

- Heating / Cooling: Depending on the unit, the system may operate in Heating or Cooling.
- Occupancy control allows you to easily set the system to operate in the following modes:



Home



Sleep



Away

- Easy temperature control: Depending on system configuration, room temperature or water temperature will be constantly displayed on the screen.



Room temperature icon indicates that system control is based on room temperature.



Water temperature icon means that the system is controlled according to water temperature.

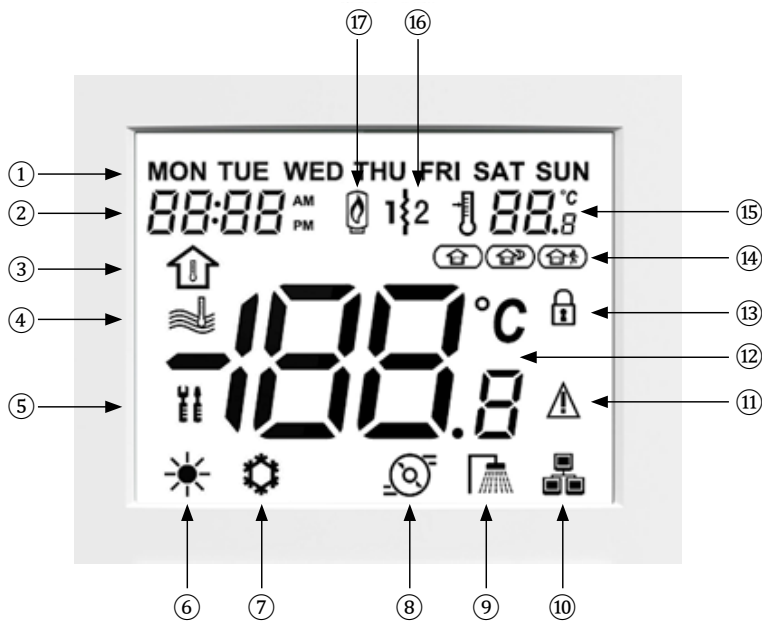
- The **set point** which is the temperature to be achieved is displayed in the upper-right corner of the screen.
- **Schedule control** allows you to set the unit to operate with a set of pre-defined parameters (heating/cooling, occupancy, set point) in a specific period of time. You can always modify the schedule if necessary.
- **Additional data display:** In addition to the standard display, you may easily check other parameters, which provide information on the general status of the unit.
- **Home anti-freeze protection** is used to maintain the minimum room temperature. When the room temperature goes below a user-defined threshold, the unit starts heating in order to protect the building against freezing. No user configuration is required.
- **Water anti-freeze protection** is used to protect water pipes against freezing when the outdoor air temperature is low. No user configuration is required.
- **Alarms** are used to warn of potentially dangerous situations that may result in the failure of the unit.
- **Domestic Hot Water OPTION.** The DHW mode allows for controlling hot water production provided that the heat pump system is equipped with a domestic water tank and a diverting DHW valve.
- **Header/Follower control OPTION** allows you to control up to four units at the same time.

NOTE

To configure the advanced parameters of the unit, please contact professional technicians.

■ Meaning of Indication

▼ Fig. 2.01



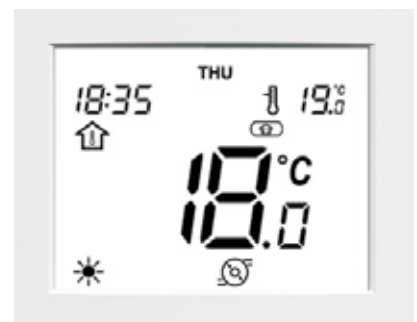
Legend:

①	Days of week	⑦	Cooling mode	⑬	Occupancy lock
②	Clock	⑧	Pump running	⑭	Occupancy status
③	Room temperature	⑨	Domestic Hot Water mode (DHW)	⑮	Set point
④	Water temperature	⑩	Header / Follower control	⑯	Electric heater stage
⑤	Advanced settings	⑪	Alarm	⑰	Boiler
⑥	Heating mode	⑫	Temp. display / Alarm code / Message		

■ Home Screen

Please note that the home screen display may vary depending on unit configuration and screen settings:

- Heating / Cooling / DHW mode
- Additional heating: Boiler or electric heating
- Occupancy mode control: Home/Sleep/Away
- Air temperature control (room temp.)
- Water temperature control
- Time display: 12-hour clock or 24-hour clock



NOTE

When the user RC's backlight is switched off, press any key to turn on the display.

■ Overview of Icons (See Fig. 2.01)

1	FRI	Days of week: Monday - Sunday				
2		Clock: 12-hour or 24-hour clock display				
3		Room temperature: System control is based on room temperature				
4		Water temperature: System control is based on water temperature				
5		Advanced settings: The icon is blinking when a password is required				
6		Heating mode: HEATING mode is active				
7		Cooling mode: COOLING mode is active				
8		Pump status: Pump is running				
9		Domestic Hot Water mode (DHW): DHW is active				
10		Header / Follower: Steady icon: This RC is connected to the Header unit and it is used to control all units in the same Header/Follower group Fast flashing icon: This RC is connected to the Follower unit and it is controlled by commands sent from the Header Slowly flashing icon: Header/Follower communication failure				
11					Alarm: <u>Steady icon:</u> Alarm condition detected: the unit is stopped.	
					<u>Flashing icon:</u> Alarm condition detected; the unit is running.	
12					Temperature display:	
					Room temperature	
					Water temperature	
13					Occupancy lock: Occupancy is set manually by the user (schedule control is disabled)	
14					Occupancy: HOME mode is active	
					Occupancy: SLEEP mode is active	
					Occupancy: AWAY mode is active	
15					Set point: Temperature to be achieved (room or water temperature)	
16					Electric heater stage active: Used in the case of heat pump failure or low outdoor air temperature	
17					Boiler active: Used in the case of heat pump failure or low outdoor temperature	

NOTE

Some functions are not provided depending on the system specification in use. For details, contact the installation company.

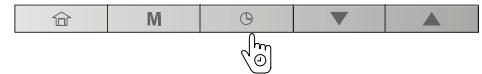
3 How to use functions

■ Programming the Control

Before using any programming features of the RC, it is necessary to set the time and day of the control.

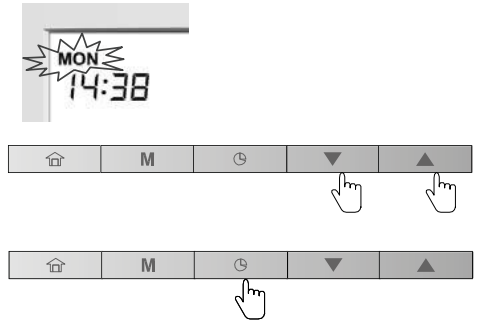
To configure time and day display

1. To access the time configuration menu, press and hold the **Schedule** key for 2 seconds.



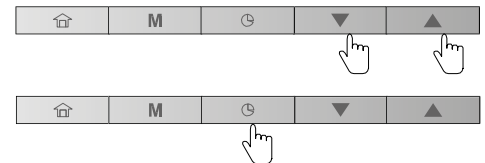
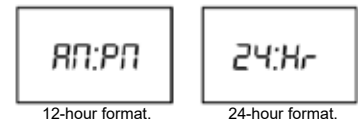
Day of week setting

2. The current day starts flashing.
3. If necessary, press the **Down** key or the **Up** key to change the day of the week.
4. Press the **Schedule** key to confirm your selection and go to the next parameter.



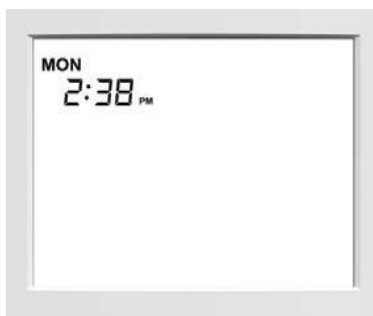
Time format setting

5. Once the day of the week has been confirmed, set the time format.
6. Press the **Down** key or the **Up** key to change the time format.
7. Press the **Schedule** key to confirm the time display.



You may customize the clock to display in a 12-hour or 24-hour format.

Example : 12-hour clock display

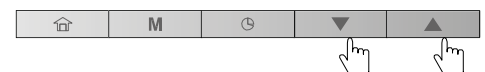


Example: 24-hour clock display



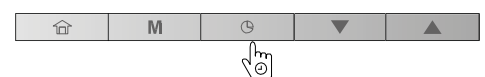
Time setting

8. Once the time format has been confirmed, set the time.
9. Press the **Down** key or the **Up** key to set the time.



For 24-hour format: Set the hour and press the **Schedule** key to confirm. Then, set minutes and press the **Schedule** key to confirm.

10. To confirm all changes, press and hold the **Schedule** key for 2 seconds.



■ Operating Mode (Heating / Cooling / DHW only / Off)

The operating mode displayed depends on the unit configuration as well as user settings.



Heating: The heat pump heats the water loop to the selected temperature set point.



Cooling: The heat pump or chiller cools the water loop to the selected temperature set point.



Domestic Hot Water only: The heat pump is used to provide domestic hot water. Cooling or Heating is disabled.

To set the operating mode

1. Press the **Mode** key successively to select the required operating mode.
2. The icon corresponding to the selected mode will be displayed.



Examples:



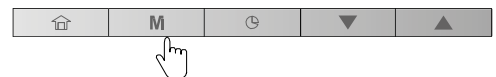
Mode	Cooling
Occupancy	Home
Temp. Control	Air temp. control
Room temp.	28°C
Set point	26°C



Mode	Heating
Occupancy	Home
Temp. Control	Water temp. control
Water temp.	34°C
Set point	35°C

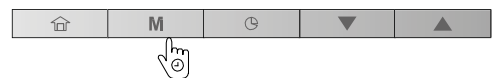
To turn on the system

1. Press the Mode key to go from the OFF Mode to any other mode.



To turn off the system

1. Press and hold the Mode key for 2 seconds.
2. The unit will turn off, but the current time and day will still be displayed on the screen.



Example:



Mode **Off**

When the unit is OFF, all operating modes described above (cooling / heating / DHW Only) are disabled. Never turn the power off to the system in order to ensure that the home anti-freeze protection and the water anti-freeze protection are **ALWAYS** available.

■ Home / Sleep / Away: Changing the comfort range (Occupancy mode)

To optimize energy efficiency of the building while preserving its occupants' comfort, the controller is normally scheduled to occupancy hours. If necessary, you can select the occupancy mode manually. Each occupancy mode is associated with a pre-defined temperature range.

Three methods used to define the comfort range (occupancy mode) are as follows:-

A. Schedule setting

The user can set up to 8 steps where each step is defined by the following parameters:

- Starting time
- Occupancy mode
- Day(s) of week when it is activated

For more information about occupancy control based on schedule, please see "Schedule: Assigning schedules to heating and cooling modes" on page 13.

B. Manual setting

The user can change occupancy directly on the screen. This setting will be effective until the next schedule step becomes active.

To set occupancy manually

1. Press the Occupancy key successively to select the required occupancy mode.



2. The icon corresponding to the selected mode will be displayed.



The heat pump or chiller is running in the **Home** mode and the Home set point is used.



The heat pump or chiller is running in the **Sleep** mode and the Sleep set point is used.



The heat pump or chiller is running in the **Away** mode and the Away set point is used.

NOTE

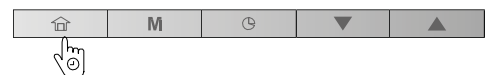
To configure the set points of different occupancy modes, refer to "Current set point control: Changing the temperature" on page 11.

C. Occupancy lock

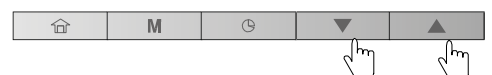
The current occupancy can be locked during a period specified by the user ("**occupancy lock**"). During this time, the schedule will be ignored. Once this period has elapsed, occupancy returns to the schedule settings.

To set the time for the selected occupancy

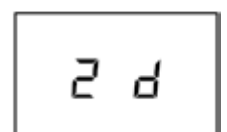
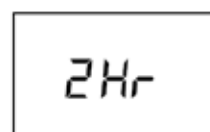
1. Press and hold the **Occupancy** key for 2 seconds.



2. The length of Home / Sleep / Away period can be set in hours or days. Press the Down Key or the Up key to set the required number of hours / days.




Example: Occupancy period (2 hours / 2 days)



NOTE


Upon "23 Hr", the display switches to days ("1 d"). When set in days, the defined occupancy will end at exactly the same time it started. Afterwards, the mode defined by the schedule will be in force.

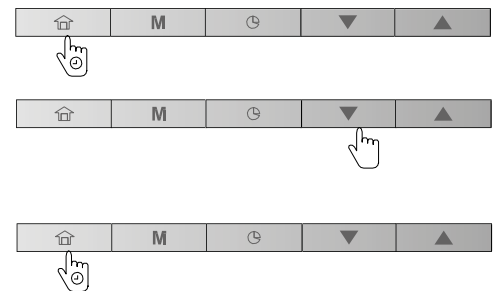
- To confirm the selected occupancy, press and hold the occupancy key for 2 seconds.
- The lock icon will be displayed 

Example: Occupancy lock (Home)



To cancel the occupancy lock

- Press and hold the **Occupancy** key for 2 seconds
- The display will show you the time remaining till the end of the selected occupancy. Press the **Down** key to set the counter to "0".
- To confirm your action, press and hold the **Occupancy** key for 2 seconds.
- The lock icon will disappear  and the schedule will be active again.



■ Current set point control: Changing the temperature

Two different configurations are available, for set point control.



The set point control is based on the room temperature.

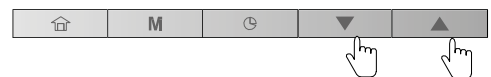


The set point control is based on the leaving water temperature.

To achieve better comfort, it is possible to adjust the current set point according to your needs.

To adjust the set point

- Press the Down key to decrease the temperature.
- Press the Up key to increase the temperature.



Please remember that the set point can be adjusted only within a range defined for each occupancy mode.

NOTE 1 After a predefined period of inactivity (no key is pressed), the set point information (air or water temp. to be achieved) is dimmed. By default, the timeout is 10 minutes.

NOTE 2 With the method described in this section, it is also possible to configure the set point for the different occupancy modes, except when set point control is configured on leaving water set point and with the climatic curves (depending of installer configuration). In this case, the set points cannot be changed by the user. If necessary, please contact a professional technician to change the configuration.

WATER TEMPERATURE CONTROL

Example (water temp. and water set point):



Current set point 35°C

ROOM TEMPERATURE CONTROL

Example (room temp. and air set point):



Current set point 19°C

■ Additional data display: General status of the unit

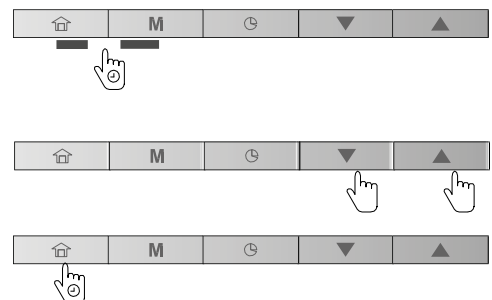
Normally the RC will have the current **indoor air temperature** and the **air set point** displayed on the screen. If the system has been configured for water temperature control the RC will have the current **water temperature** and the **water set point** displayed on the screen.

In addition to these temperatures, the RC gives you the option to check other parameters allowing you to monitor the status of the units (see table given below). Please note that these parameters (1-15) are in read-only access.

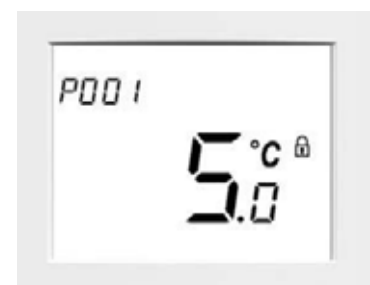
No.	Description	Parameter number
1	Outdoor Air Temp	P001
2	Entering Water Temp	P003
3	Leaving Water Temp	P004
4	Water Control Temp	P052
5	Saturated Suction Temp	P008
6	Suction Temperature	P009
7	Superheat Temperature	P015
8	Superheat Target Temp	P016
9	Discharge Temperature	P010
10	Refrigerant Temperature	P005
11	Requested Compressor Frequency	P022
12	Actual Compressor Frequency	P023
13	Water Control Point	P051
14	Flow Switch Status	P105
15	Safety Switch Status	P104

To display the required temperature

1. Press and hold the Occupancy key and the Mode key simultaneously for 2 seconds.
2. The first parameter will be displayed.
3. Press the Down key or the Up key to switch between all parameters listed in the table above.
4. To exit the current screen, press and hold the Occupancy key until the home screen is displayed or wait for 30 seconds (screen timeout).



Example: Outdoor Air Temp (Parameter: P001)



■ Schedule: Assigning schedules to heating and cooling modes

The schedule functionality makes it possible to set the unit to operate in a specific mode during a pre-defined period of time. The system allows you to modify eight steps, where each step is defined by the day(s) of the week, start time, and occupancy.


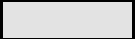

Example of schedule parameters

Step Number	Day of week							Start time	Occupancy		
	MON	TUE	WED	THU	FRI	SAT	SUN		Home	Sleep	Away
1	x	x	x	x	x	x	x	06:00	x		
2	x	x	x	x	x			08:00			x
3			x					12:00	x		
4	x	x		x	x			17:00	x		
5	x	x	x	x	x			22:00		x	
6						x	x	23:00		x	
7								00:00			
8								00:00			

Hour (Start time)

Hour Day	06:00	08:00	12:00	17:00	22:00	23:00
MON	•					• • •
TUE	•					• • •
WED	•					• • •
THU	•					• • •
FRI	•					• • •
SAT	•					•
SUN	•					•

Occupancy mode

	Home
	Away
	Sleep

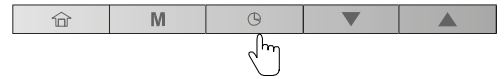


Complete the schedule according to daily routine and use it as you follow the instructions below.

Step Number	Day of week							Start time	Occupancy		
	MON	TUE	WED	THU	FRI	SAT	SUN		Home	Sleep	Away
1											
2											
3											
4											
5											
6											
7											
8											

To modify the schedule (schedule steps)

1. Press the **Schedule** key to edit the schedule
2. Upon entering the schedule menu, you will be able to edit the first schedule step.



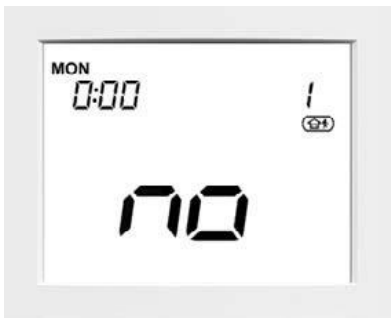
Day(s) of the week

3. The first day of the week ("MON") will start flashing. Press the **Down** key or the **Up** key to set "Yes" (step active on this day) or "no" (step inactive on this day).

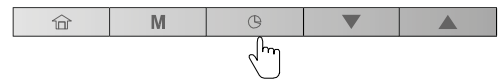
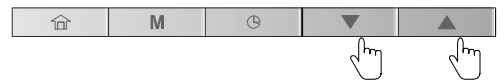
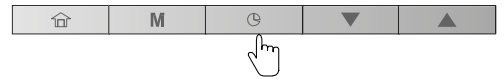


Example: Monday (step inactive)

Example: Monday (step active)

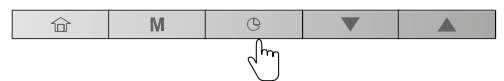
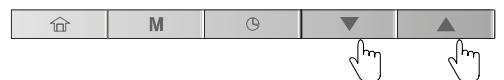


4. Press the **Schedule** key to confirm your choice.
5. The following day ("TUE") will start flashing. Press the **Down** key or the **Up** key to set "Yes" (step active on this day) or "no" (step inactive on this day).
6. Press the **Schedule** key to confirm your choice and continue with the remaining days of the week



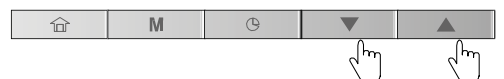
Start time

7. Once the last day of the week ("SUN") has been set, the clock starts flashing
8. Press the **Down** key or the **Up** key to set the start time.
9. Press the **Schedule** key to confirm the start time.



OCCUPANCY

10. Once the start time has been set, the occupancy icon starts flashing.
11. Press the **Down** key or the **Up** key to set the occupancy for a given period.
12. Press the **Schedule** key to confirm the selected occupancy.
13. The first day "MON" will start flashing. You can edit your schedule settings again if necessary.
14. To validate the current schedule, press and hold the **Schedule** key for 2 seconds.
15. The next schedule step will be displayed (Schedule 2).

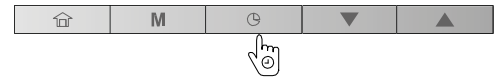


Saving the schedule

At any time in the schedule menu, you can save the current schedule step setting and go to the next schedule step.

To save the current schedule and go to the next one.

1. Press and hold the **Schedule** key for 2 seconds (repeatedly) until the required schedule number appears.
2. Perform all the required steps as presented earlier in this section.

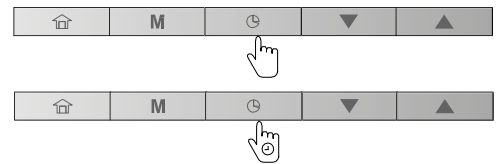


Editing schedules

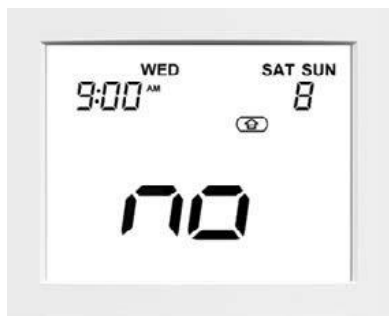
If necessary, you may easily modify any of the 8 schedule steps that are available.

To modify only one schedule, e.g. schedule "2"

1. Press the **Schedule** key to enter the schedule menu.
2. Press and hold the **Schedule** key for 2 seconds to validate schedule "1" without making any modifications.
3. Schedule "2" will be displayed.
4. Perform all required steps as presented earlier in this section.



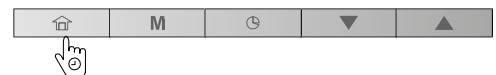
Example:



Start time	9.00
Days of week	WED, SAT, SUN
Occupancy	HOME
Scheduled step	8

To exit the schedule menu

1. To exit the schedule menu at any time, press and hold the **Occupancy** key for 2 seconds.
2. The home screen will be displayed and changes made to the modified schedule will NOT be saved.



For example:

After having set and validated schedule "1", you may want to edit schedule "2".

- When exiting schedule "2" without prior validation, schedule "2" will not be saved (schedule "1" will be saved).
- To validate a schedule, press and hold the **Schedule** key for 2 seconds.

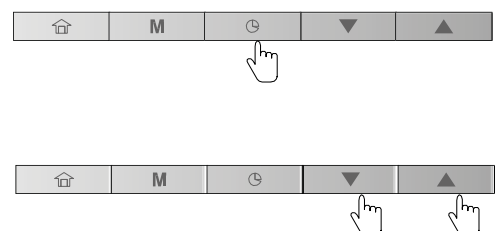


Deleting a schedule step

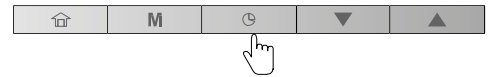
There are 8 schedule steps available, however, not all of them have to be used.

To delete a schedule

1. Press the **schedule** key to go to the schedule menu.
2. Once you have navigated to the schedule step to be deleted, you have to deselect all days of the week in a given schedule.
3. Press the **Down** key or **Up** key to set "no" (step inactive on this day).

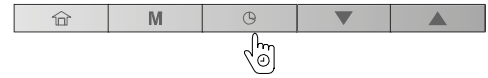


4. Press the **Schedule** key to confirm your choice.



5. Follow steps given above (step 3 and 4) to deselect all days of the week.

6. Confirm deleting the schedule step, press and hold the **Schedule** key for 2 seconds.



■ Advanced Programming Options

The advanced setting menu is used by technicians to configure advanced settings of the unit, and this menu is password protected. It is not intended to be set by the end user.

For more information about advanced settings configuration, please refer to the IM manual.

■ Domestic Hot Water mode

Please remember that the Domestic Hot Water (DHW) mode enabling hot water production is applicable only to heat pumps systems that have a DHW cylinder installed.

Normally the Domestic Hot Water mode is triggered whenever necessary and no further action from the user is required.

To set DHW mode only (manually)

1. Press the **Mode** key successively to select DHW mode only.
2. The icon corresponding to the DHW mode will be displayed.

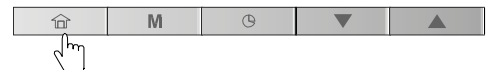


The Domestic Hot Water schedule and the DHW setpoint are set by the installer. For more information about DHW schedule configuration, please refer to the IM Manual.

The DHW mode cannot operate simultaneously with cooling or heating modes.

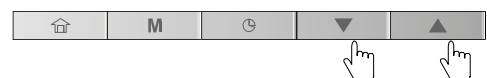
To adjust different DHW setpoints

1. Press the Occupancy key successively to select the required occupancy mode.



RC Occupancy	Water set point
	DHW Set point
	DHW Anti-Legionella Set point
	DHW Eco Set point

2. Define DHW setpoint for each Occupancy mode:
 - Press the **Down** key to decrease the temperature.
 - Press the **Up** key to increase the temperature.



NOTE 1 When the system is in DHW mode, then the current water temperature (“Water Control Temp”) becomes the DHW tank temperature. See also “Additional data display: General status of the unit” on page 12.

NOTE 2 To change the DHW setpoint, refer to “Current setpoint control: Changing the temperature” on page 11.

■ Header / Follower control

Building installations may require a few units to be interfaced together in order to provide cooling / heating on the same network.

The unit that is the decision point for the OPERATING MODE and the CONTROL POINT is defined as the **Header**, all other units belonging to the same group on the same network are referred to as **Followers**.

When the RC is connected to the **Header unit**, the Header / Follower icon is displayed on the screen



If you change the operating mode or define a new setpoint on your "Header" RC, this command will be sent to all Followers on the network. The Followers will act according to the command sent from the Header.

When the RC is connected to the **Follower unit**, the Header / Follower icon is **flashing rapidly**.



If you change the operating mode or define a new setpoint on your "Follower" RC, this command will be ignored. The operating mode and setpoint defined by the Header will be active.

When the **Header / Follower communication failure** occurs, the Header / Follower icon is **flashing slowly**.



In the case of Header/Follower communication failure, the Header will run in the standalone mode or it will continue to operate with other Follower units that are still communicating. The affected Follower unit will stop all of its operations.

Please contact a professional technician in order to set the Header/Follower assembly control.

Example: Header / Follower mode



4 User maintenance

Periodic maintenance (once a year) is necessary for this product. Consult the installation company.
If a problem occurs, contact the installation company or dealer.

5 Air to Water Heat Pump operation and performance

Power up delay protection function

Power up delay protection function prevents the air to water heat pump from starting for initial 90 seconds after the main power switch/circuit breaker is turned on for re-starting the air to water heat pump.

Short cycling protection function

The air to water heat pump is protected from short cycling by both a minimum compressor run time (3 minutes) and a minimum compressor off time (2 minutes 30 seconds).

Power failure

Power failure during operation will stop the unit completely. When Power is returned the previous operating mode (cooling / heating / DHW) or occupancy mode (home/ sleep / away) will be automatically restored.

■ Heating Characteristics

Defrosting operation

If the outdoor unit is frosted during the heating or hot water supply operation, defrosting starts automatically (for approximately 2 to 10 minutes) to maintain the heating capacity.

- During the defrosting operation, the defrosted water will be drained from the bottom plate of the outdoor unit.

Heating capacity

In the heating operation, the heat is absorbed from the outside and brought into the room. This way of heating is called heat pump system. When the outside temperature is too low, it is recommended to use another heating apparatus in combination with the air to water heat pump.

Attention to snowfall and freeze on the outdoor unit

- In snowy areas, the air intake and air discharge of the outdoor unit are often covered with snow or frozen up. If snow or ice on the outdoor unit is left as it is, it may cause machine failure or poor performance.
- In cold areas, pay attention to the drain hose so that it perfectly drains water without water remaining inside for freeze prevention. If water freezes in the drain hose or inside the outdoor unit, it may cause machine failure or poor warming.

Air to water heat pump operating conditions

For proper performance, operate the air to water heat pump under the following temperature conditions:

Cooling operation		Minimum	Maximum
Outdoor temperature	°C	0	46
Entering Water temperature:	°C	6	30
Leaving Water temperature:	°C	5	18
Heating operation *		Minimum	Maximum
Outdoor temperature	°C	-20*	30
Entering Water temperature:	°C	10	45
Leaving Water temperature:	°C	20	57 (CP2101H*) / 60 (CP1701H*)

* For operation at outdoor ambient temperature below 0°C (cooling mode and heating mode), the water freeze protection should be available and according to the water installation, the water loop can be protected against frost by the installer, using an anti-freeze solution or trace heater.

If air to water heat pump is used outside of the above conditions, safety protection may activate.

■ General Specifications

Monobloc Outdoor Unit

Monobloc Outdoor Unit		RUA-CP1701H*	RUA-CP2101H*
Power supply		380-400 V 3N~ 50 Hz	
Type		INVERTER	
Function		Heating & Cooling & Hot Water	
Heating (H1)	Capacity (kW)	17.1	21.1
	Eurovent Class	A	A
	COP	4.1	4.1
Cooling (C1)	Capacity (kW)	14.9	18.6
	Eurovent Class	B	A
	EER	3.0	3.1
Refrigerant		R410A	
Dimension	HxWxD (mm)	1579x1141x584	

H1 Heating mode conditions : Water heat exchanger water entering/leaving temperature 30°C/35°C, Outside air temperature 7°C db / 6°C wb

C1 Cooling mode conditions : evaporator water entering/leaving temperature 12°C/7°C, outside air temperature 35°C db

Domestic Hot Water Cyliner (option)

Hot water cylinder (option)	HWS-1501CSHM3-E HWS-1501CSHM3-UK	HWS-2101CSHM3-E HWS-2101CSHM3-UK	HWS-3001CSHM3-E HWS-3001CSHM3-UK
Power supply	220-230 V~ 50 Hz		
Water volume (liter)	150	210	300
Max water temperature (°C)	75		
Electric heater (kW)	2.7		
Height (mm)	1,090	1,474	2,040
Diameter (mm)	550		
Material	Stainless steel		

6 Troubleshooting

If a problem occurs, contact the installation company or dealer.

Problem Check	Action
Nothing is displayed on the RC.	<ul style="list-style-type: none"> • Check whether power is supplied. • Date/time setting is not made.
Time indication is blinking on the RC.	<ul style="list-style-type: none"> • Date/time setting is not made. • Set date and time.
Room is not cooled or heated	<ul style="list-style-type: none"> • Is scheduled operation set? • Check whether scheduled operation is set on the RC.
	<ul style="list-style-type: none"> • Is occupancy set? • Check the setting on the RC.
	<ul style="list-style-type: none"> • Is the air to water heat pump operating according climatic curves? • In climatic curve mode, the target value is set automatically according to the outdoor unit temperature. • The climatic curves can be adjusted. Contact the installation company.
Hot water is not supplied.	<ul style="list-style-type: none"> • Is the main water supply cock closed? • Check valves.
	<ul style="list-style-type: none"> • Are you using too much hot water? • If hot water usage exceeds the storage capacity, there is a risk that the set hot water temperature cannot be achieved.

If you have any questions, contact the installation company.

■ Alarms

Alarms are used to inform you of the failure of one of the parts of the heat pump or chiller system.

In the case of an alarm, the alarm icon is displayed:



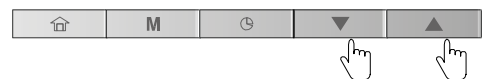
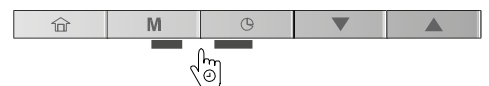
Steady icon: Alarm condition detected; the unit has stopped



Flashing icon: Alarm condition detected; the unit is running

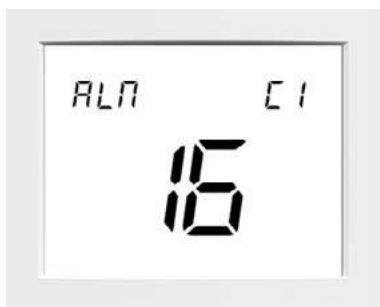
To see the alarms

1. Press and hold the **Mode** key and the **Schedule** key simultaneously for 2 seconds.
2. The alarms menu will be displayed.
3. Press the **Down** key or the **Up** key to display the alarms (1 to 5).

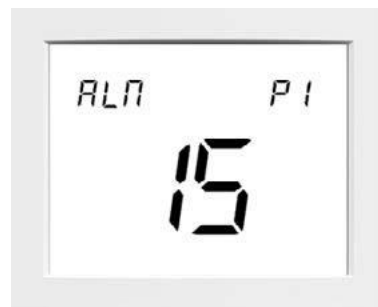


Two types of alarms are displayed: Current alarms (C-X) / Past alarms (P-X).

Examples:



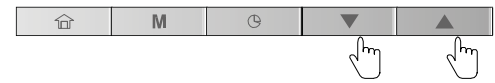
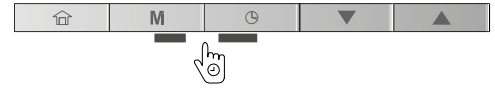
Current Alarm C1
Alarm code 16



Past Alarm P1
Alarm code 15

To reset alarms

1. In the alarm menu, press and hold the **Mode** key and the **Schedule** key simultaneously for 2 seconds.
2. The reset alarm menu will be displayed.
3. Press the **Down** key or the **Up** key to set the alarms reset to "YES".

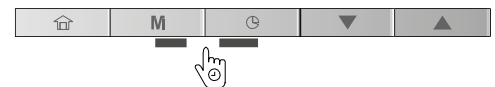


Alarm reset: NO



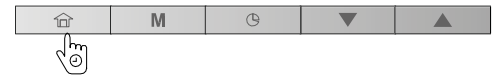
Alarm reset: YES

4. To confirm the alarms reset, press and hold the **Mode** key and the **Schedule** key simultaneously for 2 seconds.



To exit the alarm screen

1. Press and hold the **Occupancy** key until the home screen is displayed.

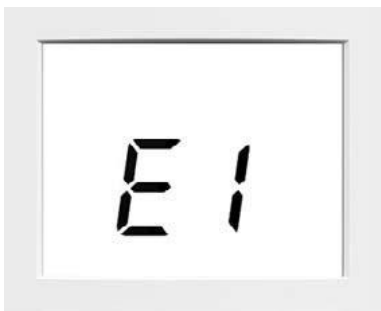


For more information about alarms, please refer to the IM Manual.

■ Errors

Some components failure may cause the RC to malfunction. In such cases, the error will be displayed on the screen.

Example E1, error 1



ID	Description
1	Communication failure
2	Wrong configuration (Unit not configured to use RC)
3	Profile table wrong size
4	Parameter not found but mandatory
5	Room Sensor failure

For more information about errors, please refer to the IM Manual.

TOSHIBA CARRIER EUROPE S.A.S

Route de Thil 01120 Montluel France

1402410001