

# Cylinder unit Hydrobox

# FTC BOX

FTC BOX

**EHPT series  
ERPT series  
EHST series  
ERST series**

**EHPX series  
EHSC series  
EHSD series  
EHSE series**

**ERPX series  
ERSC series  
ERSD series  
ERSE series**

**PAC-IF07 series**

OPERATION MANUAL	FOR USER	English
BEDIENUNGSHANDBUCH	FÜR BENUTZER	Deutsch
MANUEL D'UTILISATION	POUR L'UTILISATEUR	Français
BEDIENINGSHANDLEIDING	VOOR DE GEBRUIKER	Nederlands
MANUAL DE INSTRUCCIONES	PARA EL USUARIO	Español
ISTRUZIONI DI FUNZIONAMENTO	PER L'UTENTE	Italiano
ΕΓΧΕΙΡΙΔΙΟ ΟΔΗΓΙΩΝ ΧΡΗΣΕΩΣ	ΓΙΑ ΤΟΝ ΧΡΗΣΤΗ	Ελληνικά
MANUAL DE OPERAÇÃO	PARA O UTILIZADOR	Português
DRIFTSMANUAL	TIL BRUGER	Dansk
DRIFTSMANUAL	FÖR ANVÄNDAREN	Svenska
РЪКОВОДСТВО ЗА ЕКСПЛОАТАЦИЯ	ЗА ПОТРЕБИТЕЛЯ	Български
INSTRUKCJA OBSŁUGI	INFORMACJA DLA UŻYTKOWNIKA	Polski
BRUKSANVISNING	FOR BRUKER	Norsk
KÄYTTÖOPAS	KÄYTTÄJÄLLE	Suomi
PROVOZNÍ PŘÍRUČKA	PRO UŽIVATELE	Čeština
NÁVOD NA OBSLUHU	PRE POUŽIVATEĽA	Slovenčina
HASZNÁLATI KÉZIKÖNYV	A FELHASZNÁLÓNAK	Magyar
NAVODILA ZA UPORABO	ZA UPORABNIKA	Slovenščina
MANUAL DE UTILIZARE	PENTRU UTILIZATOR	Română
KASUTUSJUHEND	KASUTAJALE	Eesti
LIETOŠANAS ROKASGRĀMATA	LIETOTĀJIEM	Latviski
NAUDOJIMO VADOVAS	SKIRTA NAUDOTOJUI	Lietuviškai
PRIRUČNIK ZA RUKOVANJE	ZA KORISNIKA	Hrvatski
UPUTSTVO ZA RUKOVANJE	ZA KORISNIKA	Srpski

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<https://www12.mitsubishielectric.com/>

Should you need more information, please access above website to download detailed manuals, select your region, select model name, then choose your language.

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**Abbreviations and glossary**

No.	Abbreviations/Word	Description
1	Compensation curve mode	Space heating incorporating outdoor ambient temperature compensation
2	COP	Coefficient of Performance the efficiency of the heat pump
3	Cooling mode	Space cooling through fan-coils or underfloor cooling
4	Cylinder unit	Indoor unvented DHW tank and component plumbing parts
5	DHW mode	Domestic hot water heating mode for showers, sinks, etc.
6	Flow temperature	Temperature at which water is delivered to the primary circuit
7	Freeze stat. function	Heating control routine to prevent water pipes freezing
8	FTC	Flow temperature controller, the circuit board in charge of controlling the system
9	Heating mode	Space heating through radiators or Underfloor heating
10	Hydrobox	Indoor unit housing the component plumbing parts (NO DHW tank)
11	Legionella	Bacteria potentially found in plumbing, showers and water tanks that may cause Legionnaires disease
12	LP mode	Legionella prevention mode – a function on systems with water tanks to prevent the growth of legionella bacteria
13	Packaged model	Plate heat exchanger (Refrigerant - Water) in the outdoor heat pump unit
14	PRV	Pressure relief valve
15	Return temperature	Temperature at which water is delivered from the primary circuit
16	Split model	Plate heat exchanger (Refrigerant - Water) in the indoor unit
17	TRV	Thermostatic radiator valve – a valve on the entrance or exit of the radiator panel to control the heat output

# 1 Safety Precautions

- ▶ Before operating this unit it is important to read the safety precautions.
- ▶ The following safety points are provided to prevent injury to yourself and damage to the unit please adhere to them.

## Used in this manual

**⚠ WARNING:**  
Precautions listed under this title should be observed to prevent injury or death to the user.

**⚠ CAUTION:**  
Precautions listed under this title should be observed to prevent damage to the unit.

- Follow the instructions provided in this manual and local regulations when using this unit.

## MEANINGS OF SYMBOLS DISPLAYED ON THE UNIT

	<b>WARNING</b> (Risk of fire)	This mark is for R32 refrigerant only. Refrigerant type is written on nameplate of outdoor unit. In case that refrigerant type is R32, this unit uses a flammable refrigerant. If refrigerant leaks and comes in contact with fire or heating part, it will create harmful gas and there is risk of fire.
		Read the OPERATION MANUAL carefully before operation.
		Service personnel are required to carefully read the OPERATION MANUAL and INSTALLATION MANUAL before operation.
		Further information is available in the OPERATION MANUAL, INSTALLATION MANUAL, and the like.

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## ⚠ ⚠ WARNING

- The unit should **NOT** be installed or serviced by the user. If installed incorrectly water leakage, electric shock and fire may result.
- **NEVER** block discharges from emergency valves.
- Do not operate the unit without emergency valves and thermostatic cut-outs being operational. If in doubt contact your installer.
- Do not stand on or lean on unit.
- Do not place objects on top or below the unit and observe service space requirements when placing objects next to the unit.
- Do not touch the unit or controller with wet hands as electric shock may result.
- Do not remove the panels of the unit or try to force objects inside the unit's casing.
- Do not touch protruding pipework as it may be very hot and cause burns to the body.
- Should the unit start vibrating or making abnormal noises stop operation, isolate from the power supply and contact the installer.
- Should the unit start to produce any burning smells stop operation, isolate from the power supply and contact the installer.
- Should water be visibly being discharged through the tundish stop operation, isolate from the power supply and contact the installer.
- 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.
- In the case of a refrigeration leak, stop the operation of the unit, thoroughly ventilate the room and contact the installer.
- If power supply cable is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Do not place containers with liquids on top of the unit. If they leak or spill the unit may be damaged and fire could occur.
- When installing, relocating, or servicing the cylinder unit and the hydrobox, use only the heat pump's specified refrigerant to charge the refrigerant lines. Do not mix it with any other refrigerant and do not allow air to remain in the lines. If air is mixed with the refrigerant, then it can be the cause of abnormal high pressure in the refrigerant line, and may result in an explosion and other hazards.  
The use of any refrigerant other than that specified for the system will cause mechanical failure or system malfunction or unit breakdown. In the worst case, this could lead to a serious impediment to securing product safety.
- In heating mode, to avoid the heat emitters being damaged by excessively hot water, set the target flow temperature to a minimum of 2°C below the maximum allowable temperature of all the heat emitters. For Zone2, set the target flow temperature to a minimum of 5°C below the maximum allowable flow temperature of all the heat emitters in Zone2 circuit.
- This appliance is primarily intended for domestic use. For commercial applications this appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odour.

## ⚠ CAUTION

- Do not use sharp objects to press the buttons of the main remote controller as this will cause damage to the buttons.
- If power to unit is to be turned off for a long time, the water should be drained.
- Do not place a container etc. filled with water on the top panel.

# 1 Safety Precautions

## Disposal of the Unit



<Figure 1.1>

**Note: This symbol mark is for EU countries only.**  
**This symbol mark is according to the directive 2012/19/EU Article 14 Information for users and Annex IX, and/or to the directive 2006/66/EC Article 20 Information for end-users and Annex II.**

Your Mitsubishi Electric heating system products have been manufactured with high quality materials and components which can be recycled and/or reused. The symbol in Figure 1.1 means that electrical and electronic equipment, batteries and accumulators at the end of their life, should be disposed of separately from your household waste.

If a chemical symbol is printed beneath the symbol (Figure 1.1), this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration. This is indicated as follows;

Hg: mercury (0.0005%), Cd: cadmium (0.002%), Pb: lead (0.004%)

In the European Union there are separate collection systems for used electrical and electronic products, batteries and accumulators.

Please dispose of this equipment, batteries and accumulators correctly at your local community waste collection/recycling centre.

**Contact your local Mitsubishi Electric dealer for country-specific details on disposal.**

Please, help us to conserve the environment we live in.

# 2 Introduction

The purpose of this user manual is to inform users how their air source heat pump heating system works, how to run the system at its most efficient and how to change settings on the main remote controller.

**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 the use of the appliance by a person responsible for their safety. Children should be supervised to ensure they do not play with the appliance.**

**This user manual should be kept with the unit or in an accessible place for future reference.**

# 3 Technical information

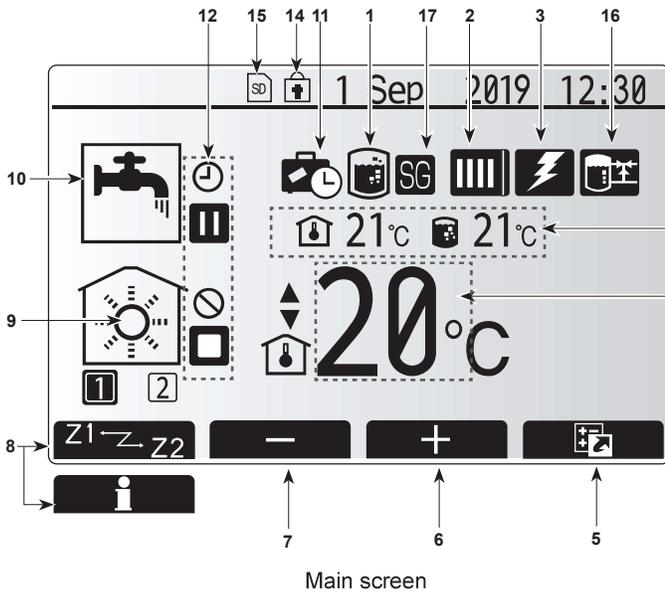
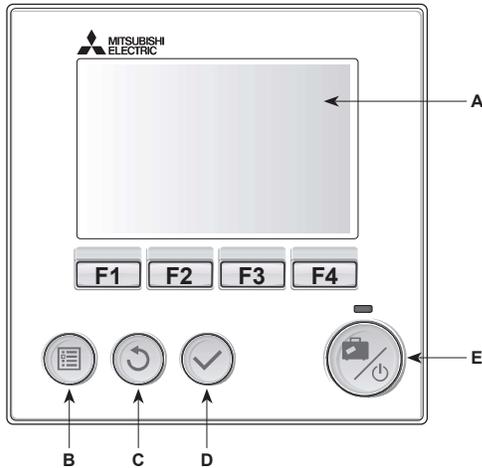
Model name	E**T**C/X-*M**D* E**C/X-*M**D	E**T**D-*M**D E**D-*M**D
Sound power level (PWL)	40 dB(A)	41 dB(A)

# 4 Customising Settings for Your Home

## ■ Main remote controller

To change the settings of your heating/cooling system please use the main remote controller. The following is a guide to viewing the main settings. Should you require more information please contact your installer or local Mitsubishi Electric dealer.

Cooling mode is available for ER series only.



## <Main remote controller parts>

Letter	Name	Function
A	Screen	Screen in which all information is displayed.
B	Menu	Access to system settings for initial set up and modifications.
C	Back	Return to previous menu.
D	Confirm	Used to select or save. (Enter key)
E	Power/Holiday	If system is switched off pressing once will turn system on. Pressing again when system is switched on will enable Holiday Mode. Holding the button down for 3 secs will turn the system off. (*1)
F1-4	Function keys	Used to scroll through menu and adjust settings. Function is determined by the menu screen visible on screen A.

\*1

When the system is switched off or the power supply is disconnected, the indoor unit protection functions (e.g. freeze stat. function) will NOT operate. Please beware that without these safety functions enabled the indoor unit may potentially become exposed to damage.

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## <Main screen icons>

	Icon	Description
1	Legionella prevention	When this icon is displayed 'Legionella prevention mode' is active.
2	Heat pump	'Heat pump' is running.
		Defrosting
		Emergency heating
		'Quiet mode' is activated.
3	Electric heater	When this icon is displayed the 'Electric heaters' (booster or immersion heater) are in use.
4	Target temperature	Target flow temperature
		Target room temperature
		Compensation curve
5	OPTION	Pressing the function button below this icon will display the option screen.
6	+	Increase desired temperature.
7	-	Decrease desired temperature.
8	Z1 Z2	Pressing the function button below this icon switches between Zone1 and Zone2.
		Information
9	Space heating (cooling) mode	Heating mode Zone1 or Zone2
		Cooling mode Zone1 or Zone2
10	DHW mode	Normal or ECO mode
11	Holiday mode	When this icon is displayed 'Holiday mode' activated.
12	Timer	Prohibited
		Server control
		Stand-by
		Stand-by (*2)
		Stop
		Operating
		13
		Current water temperature of DHW tank
14		The Menu button is locked or the switching of the operation modes between DHW and Heating operations are disabled in the Option screen. (*3)
15		SD memory card (NOT for the user) is inserted.
16		When this icon is displayed 'Buffer tank control' is active.
17		When this icon is displayed, 'Smart grid ready' is active.

\*2 This unit is in Stand-by whilst other indoor unit(s) is in operation by priority.

\*3 To lock or unlock the Menu, press the BACK and CONFIRM keys simultaneously for 3 seconds.

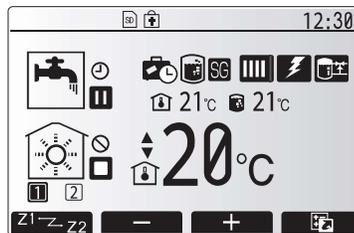
# 4 Customising Settings for Your Home

## General Operation

In general operation the screen displayed on the main remote controller will be shown as in the figure on the right.

This screen shows the target temperature, space heating mode, DHW mode (if DHW tank is present in system), any additional heat sources being used, holiday mode, and the date and time.

You should use the function buttons to access more information. When this screen is displayed pressing F1 will display the current status and pressing F4 will take the user to the option menu screen.



Home screen

### <Option screen>

This screen shows the main operating modes of the system.

Use function buttons to switch between Operating (▶), Prohibited (⊘) and Timer (⌚) for DHW and space heating/cooling, or detailed information on energy or capacity.

The option screen allows quick setting of the following;

- Forced DHW (if DHW tank present) — to turn ON/OFF press F1
- DHW operating mode (if DHW tank present) — to change mode press F2
- Space heating/cooling operating mode — to change mode press F3
- Energy monitor

Following accumulated energy values are displayed.

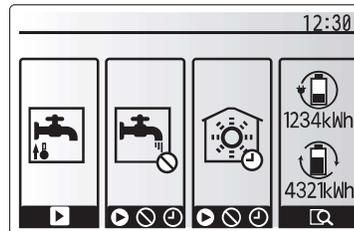
⌚ : Consumed electrical energy in total (month-to-date)

🔥 : Delivered heat energy in total (month-to-date)

To monitor the energy values in each operation mode for [month-to-date/ last month/ the month before last/ year-to-date/ last year], press F4 to access to the Energy monitor menu.

### Note:

If a certain accuracy is required for the monitoring, the method to display captured data from external energy meter(s) should be set up. Contact your installer for further details.



Option screen

## Main Settings Menu

To access the main settings menu press button B 'MENU'

The following menus will be displayed;

- [DHW]  
(Cylinder unit or hydrobox (or FTC BOX) plus locally supplied DHW tank)
- [Heating/Cooling]
- [Schedule timer]
- [Holiday mode]
- [Initial settings]
- [Service] (Password protected)

### ⚙️ [Initial Settings]

1. From the main settings menu use F2 and F3 buttons to highlight 'Initial settings' icon and select by pressing CONFIRM.
2. Use F1 and F2 buttons to scroll through the menu list. When the required title is highlighted then press CONFIRM to edit.
3. Use the relevant function buttons to edit each initial setting then press CONFIRM to save the setting.

Initial settings that can be edited are

- [Date/Time] \*Be sure to set it to the local standard time.
- [Language]
- [Summer time]
- [Temp. display]
- [Contact number]
- [Time display]
- [°C/°F]
- [Room sensor settings]

To return to the main settings menu press the BACK button.



Main settings menu screen

Icon	Description
	[Hot water (DHW)]
	[Heating/Cooling]
	[Schedule timer]
	[Holiday mode]
	[Initial settings]
	[Service]

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## 4 Customising Settings for Your Home

### <[Room sensor settings]>

For room sensor settings it is important to choose the correct room sensor depending on the heating mode the system will operate in.

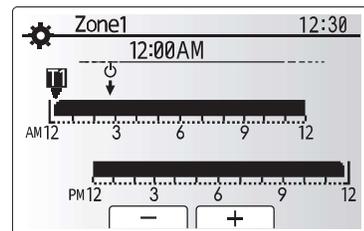
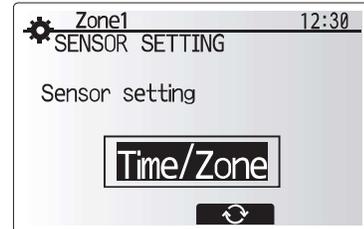
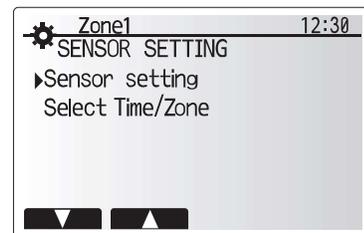
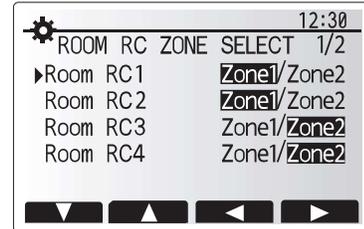
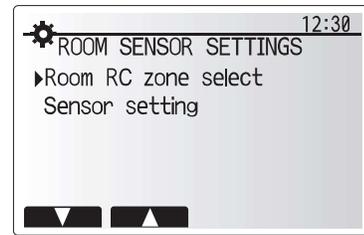
1. From the Initial settings menu select Room sensor settings.
2. When 2-zone temperature control is active and wireless remote controllers are available, from Room RC zone select screen, select zone No. to assign to each remote controller.
3. From Sensor setting screen, select a room sensor to be used for monitoring the room temperature from Zone1 and Zone2 separately.

Control option (Website manual)	Corresponding initial settings room sensor	
	Zone1	Zone2
A	Room RC1-8 (one each for Zone1 and Zone2)	*
B	TH1	*
C	Main remote controller	*
D	*	*

\* Not specified (if a field-supplied room thermostat is used)

Room RC1-8 (one each for Zone1 and Zone2) (if a wireless remote controller is used as a room thermostat)

4. From Sensor setting screen, select Time/Zone to make it possible to use different room sensors according to the time schedule set in the Select Time/Zone menu. The room sensors can be switched up to 4 times within 24 hours.



Time/Zone schedule setting screen

### Domestic Hot Water (DHW)/Legionella Prevention

The domestic hot water and legionella prevention menus control the operation of DHW tank heat ups.

#### <ECO mode>

ECO mode takes a little longer to heat the water in the DHW tank but the energy used is reduced. This is because heat pump operation is restricted using signals from the FTC based on measured DHW tank temperature.

**Note: The actual energy saved in ECO mode will vary according to outdoor ambient temperature.**

**For frequent DHW use, change the operation mode.**

Return to the DHW/legionella prevention menu.

#### Forced DHW

The forced DHW function is used to force the system to operate in DHW mode. In normal operation the water in the DHW tank will be heated either to the set temperature or for the maximum DHW time, whichever occurs first. However should there be a high demand for hot water 'Forced DHW' function can be used to prevent the system from routinely switching to space heating/cooling and continue to provide DHW tank heating.

Forced DHW operation is activated by pressing button F1 and Back button in the 'Option Screen'. After DHW operation finishes, the system will automatically return to normal operation. To cancel forced DHW operation hold down button F1 in the 'Option Screen'.

When using DHW more than residual amount, operate the unit in 'Forced DHW' in advance.

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## 4 Customising Settings for Your Home

### [Heating/Cooling]

The heating/cooling menus deal with space heating/cooling using normally either a radiator, fan-coil, or underfloor heating/cooling system depending on the installation.

There are 3 heating modes

- Heating room temp. (Auto adaptation) 
- Heating flow temp. 
- Heating compensation curve 
- Cooling flow temp. 

#### <Room temp. (Auto adaptation) mode>

This mode is explained in detail in 'Overview of Controls' Section (page 4).

#### <Flow temp. mode>

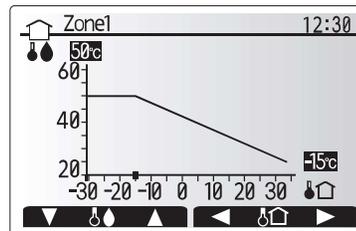
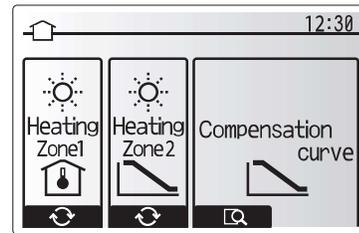
The temperature of the water flowing to the heating circuit is set by the installer to best suit the space heating/cooling system design, and user's desired requirements.

#### Explanation of compensation curve

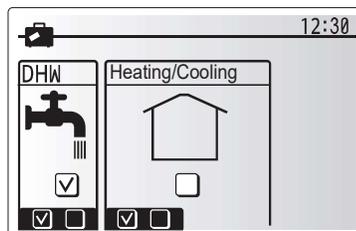
During late spring and summer usually the demand for space heating is reduced. To prevent the heat pump from producing excessive flow temperatures for the primary circuit the compensation curve mode can be used to maximise efficiency and reduce running costs.

The compensation curve is used to restrict the flow temperature of the primary space heating circuit dependent on the outdoor temperature. The FTC uses information from both an outdoor temperature sensor and a temperature sensor on the primary circuit supply to ensure the heat pump is not producing excessive flow temperatures if the weather conditions do not require it.

Your installer will set the parameters of the graph depending on local conditions and type of space heating used in your home. It should not be necessary for you to alter these settings. If however you find that over a reasonable operating period the space heating is not heating or is overheating your home, please contact your installer so they can check your system for any problems and update these settings if necessary.



 : Flow temp.  
 : Outdoor ambient temp.



### [Holiday mode]

Holiday mode can be used to keep the system running at lower flow temperatures and thus reduced power usage whilst the property is unoccupied. Holiday mode can run either flow temp., room temp., heating, compensation curve heating and DHW all at reduced flow temperatures to save energy if the occupier is absent.

From the main menu screen press button E should be pressed. Be careful not to hold down button E for too long as this will turn off the controller and system.

Once the holiday mode activation screen is displayed you can activate/deactivate and select the duration that you would like holiday mode to run for.

- Press button F1 to activate or deactivate holiday mode.
- Use buttons F2, F3 and F4 to input the date which you would like holiday mode to activate or deactivate holiday mode for space heating.

#### <Editing holiday mode>

Refer to the menu tree in "Main remote controller" of Installation Manual. Should you require the Holiday mode settings e.g. the flow temp., room temp. to be altered you should contact your installer.

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## 4 Customising Settings for Your Home

### [Schedule timer]

Scheduled timer can be set in two ways, for example; one for summer and the other for winter. (Refer to as "Schedule 1" and "Schedule 2" respectively.) Once the term (months) for the Schedule 2 is specified, rest of the term will be specified as Schedule 1. In each Schedule, an operational pattern of modes (Heating/Cooling/DHW) can be set. If no operational pattern is set for Schedule 2, only the pattern for Schedule 1 will be valid. If Schedule 2 is set to full-year (i.e. March to Feb.), only the operational pattern for Schedule 2 will be valid.

The schedule timer is activated or deactivated in the option screen. (See 'General Operation' section)

#### <Setting the Schedule period>

1. From the main settings menu use F2 and F3 to highlight the schedule icon then press CONFIRM.
2. The Schedule period preview screen is displayed.
3. To change the Schedule period, press F4. button.
4. The time bar edit screen is displayed.
5. Use F2/F3 button to point at a starting month of the Schedule 2, then press CONFIRM.
6. Use F2/F3 button to point at an ending month of the Schedule 2, then press CONFIRM.
7. Press F4 to save settings.

#### <Setting the Schedule timer>

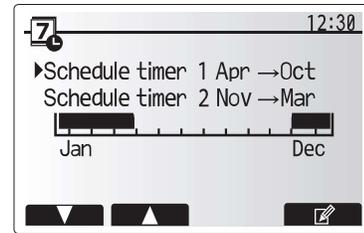
1. From the main settings menu use F2 and F3 to highlight the schedule icon then press CONFIRM.
2. From the Schedule 2 period preview screen use F1 and F2 to scroll through the selecting each subtitle in turn by pressing CONFIRM.
3. The schedule timer sub menu will be displayed. The icons show the following modes;
  - [Heating]
  - [Cooling]
  - [DHW]
4. Use F2 and F3 buttons to move between mode icons press CONFIRM to be shown the PREVIEW screen for each mode.

The preview screen allows you to view the current settings. In 2-zone heating/cooling operation, press F1 to switch between Zone1 and Zone2. Days of the week are displayed across the top of the screen. Where day appears underlined the settings are the same for all those days underlined.

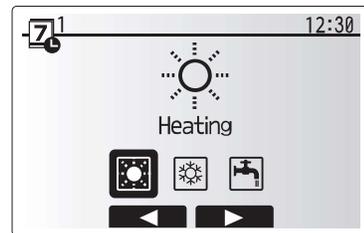
Hours of the day and night are represented as a bar across the main part of the screen. Where the bar is solid black, space heating/cooling and DHW (whichever is selected) is allowed.

5. In the preview menu screen press F4 button.

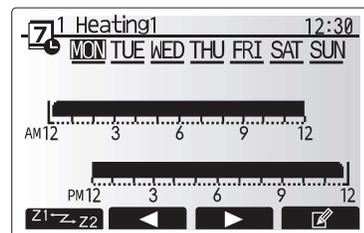
6. First select the days of the week you wish to schedule.
7. Press F2/F3 buttons to move between days and F1 to check or uncheck the box.
8. When you have selected the days press CONFIRM.



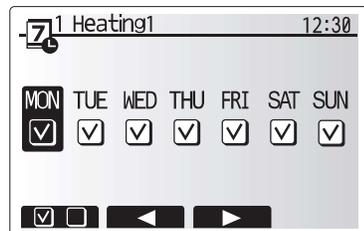
Schedule 2 period preview screen



Schedule 1 mode select screen



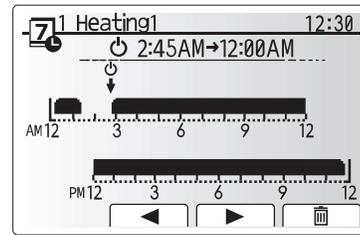
Preview screen



Day of week select screen

## 4 Customising Settings for Your Home

9. The time bar edit screen will be displayed.
10. Use buttons F2/F3 to move to the point at which you do not want the selected mode to be active press CONFIRM to start.
11. Use F3 button to set the required time of inactivity then press CONFIRM.
12. You can add up to 4 periods of inactivity within a 24 hour interval.



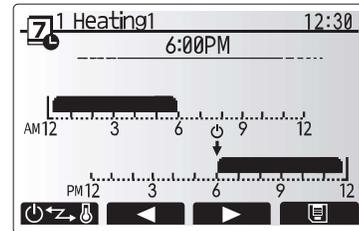
Time of period setting screen 1

13. Press F4 to save settings.

When scheduling heating, button F1 changes the scheduled variable between time and temperature. This enables a lower temperature to be set for a number of hours e.g. a lower temperature may be required at night when the occupants are sleeping.

### en Notes:

- The schedule timer for space heating/cooling and DHW are set in the same way. However for DHW only time can be used as scheduling variable.
- A small rubbish bin character is also displayed choosing this icon will delete the last unsaved action.
- It is necessary to use the SAVE function F4 button to save settings. CONFIRM does NOT act as SAVE for this menu.



Time of period setting screen 2



### [Service] Menu

The service menu is password protected to prevent accidental changes being made to the operation settings, by unauthorised/unqualified persons.