Hydro Unit Wired Controller **User manual**

VSTAT05P-1

- Thank you for purchasing this Lennox Product.
- Before operating this unit, please read this manual carefully and retain it for future reference.



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Safety Information

California Proposition 65 Warning (US)



MARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

This content is intended to protect the user's safety and prevent property damage. Please read it carefully for correct use of the product.



/ WARNING

Hazards or unsafe practices that may result in severe personal injury or death.



Hazards or unsafe practices that may result in minor personal injury or property damage.

Follow directions.



Make sure the machine is grounded to prevent electric shock.

Unplug the appliance.



Do NOT disassemble.

FOR INSTALLATION



\ WARNING



The installation of this appliance must be performed by a qualified technician or service company.

• Failing to do so may result in electric shock, fire, explosion, problems with the product, or injury.

You must connect the product with rated power upon installation.

• Failing to do so may result in problems with the product, electric shock, or fire.



Do not install this appliance near a heater, inflammable material. Do not install this appliance in a humid, oily or dusty location, in a location exposed to direct sunlight and water (rain drops). Do not install this appliance in a location where gas may leak.

• Failing to do so may result in electric shock or fire.



/ CAUTION



Install the product on a hard and even place that can support its weight.

• If the place cannot support its weight, the product may fall down and it may cause product damage.

FOR POWER SUPPLY



/ WARNING



O not bend or pull the power cord excessively. Do not twist or tie up the power cord.

• Failing to do so may result in electric shock or fire.

FOR OPERATION



/ WARNING



If the appliance generates a strange noise, a burning smell or smoke, unplug the product immediately and contact your nearest service centre.

• Failing to do so may result in electric shock or fire.

To reinstall the product, please contact your nearest service centre.

- Failing to do so may result in problems with the product, water leakage, electric shock, or fire.
- A delivery service for the product is not provided. If you reinstall the product in another location, additional construction expenses and an installation fee will be charged.

If the malfunction diagnosis indicator appears or malfunctions, then stop operation immediately.

• If you detect any burning smells from the product or it malfunctions, then immediately turn off the product and power, and then contact the service centre. Continuing to use the device in this state can cause electrical shock, fire, or damage to the product.



Do not attempt to repair, disassemble, or modify the product yourself. • Failing to do so may result in electric shock, fire, product malfunction, or injury.





Do not allow water to enter the product.

• Failing to do so may result in fire or explosion.



Do not operate the product with wet hands.

Failing to do so may result in electric shock.

Do not spray volatile material such as insecticide onto the surface of the product.

• As well as being harmful to humans, it may also result in electric shock, fire, or product malfunction.

Do not give a strong impact to the product and do not disassemble the product.

Do not use this product for other purposes.

Do not press the buttons with any sharp objects.

• Failing to do so may result in electric shock or part damage.

FOR CLEANING



/ WARNING



Do not clean the product by spraying water directly onto it. Do not use benzene, thinner, alcohol or acetone to clean the product.

Failing to do so may result in discoloration, deformation, damage, electric shock, or fire.

Remote Controller Operation

Operate the product by using the remote controller.

Operating basic mode

Press the **OK** button to enter the Setting screen from the Home screen with the Zone 1 or Zone 2 activated. On each screen, press the **OK** and then press the **Or** button to select any of Auto, Cool, and Heat modes.

Auto mode

Hydro unit will automatically adjust the temperature of discharge water with the Auto mode for indoor heating.



When Water Law is active, the target supply water temperature will be determined automatically
depending on the outdoor temperature: For the Heat mode, colder outdoor temperatures will result in
warmer water.

Cool mode

You can adjust cooling temperature as you like with the Cool mode to cool indoor place.

• When selecting the Heat mode during the Cool mode, the Cool mode will be canceled.

Heat mode

Floor heating is available with the Heat mode by providing hot water in the spring, autumn and winter.

- You can check the Defrost Operation on the operation status menu under Option.
- When selecting the Cool mode during the Heat mode, the Heat mode will be canceled.



 When setting standard cooling & heating temperature as indoor temperature, the Auto mode cannot be selected.

Domestic Hot Water (DHW) mode

Press the **OK** button to enter the Setting screen from the Home screen with the DHW activated. On each screen, press the **OK** and then press the \wedge or \vee button to select and use any of Economic, Standard, Power, and Forced modes

NOTE

- When the DHW mode is not supported, "Not Supported" appears.
- To operate hot water mode, you need to set the hot water function 'YES' in the field specification setting
 mode (#3011) of hydro unit wired controller and connect the temperature sensor of hot water tank.
- When the Cool/Heat mode and the DHW mode are selected at the same time, the Cool/Heat mode and the DHW mode will operate alternately.
- 🎁 (power) for the DHW mode cannot be used when the Booster Heater is not in use.
- If you want to enjoy a leisurely bath or need a lot of warm water urgently, select the Forced mode. When this mode is enabled, it is assured that the full capacity of the heat pump is only delivered for domestic water heating.

! CAUTION

- By default field setting value option, this function will not be turned off automatically.
- If you want a Forced mode for a certain amount of duration time, change the field setting value of remote controller.

Remote Controller Operation

Adjusting desired temperature

On each screen, press the \wedge or \vee button to adjust the temperature.



• You can adjust the desired temperature by 0.1, 0.5, 1 °C. (Default 0.5°C)

Setting the set temperature

On each screen, press the \langle or \rangle button to select a desired menu and then press the the **OK** button. You can adjust the set temperature by pressing the \sim or \sim button.

NOTE

- When the Reference Temperature to control is Water Outlet, you can set the temperature only for Water
- When the Reference Temperature to control is Indoor, you set the temperatures for Indoor and Water Outlet.
- In case of the model that can support both, you can set only the temperature for Indoor but the temperature for Water Outlet is also affected together.
- Depending on the Reference Temperature set for cooling and heating, the controllable temperatures are restricted for each mode

	Auto	Cool & Heat
Water Outlet	Water Law	Water Outlet
Indoor Temp	-	Indoor Temp

Power Smart Features

There is a variety of useful functionality provided by the Lennox product.

Operation status

Use this to display the operation status:

COMP operation, Back up heater, Booster Heater, Solar, Back up boiler, Water Pump, Water Tank, Defrost Operation, Freezing Control, Water Tank Sterilization Operation, Indoor Thermostat Installation, Air to Air Operation, Solar PV, Smart Grid, Eco Level, Demand Response.

Quiet mode

Noise from operation can be reduced with the Quiet mode.

NOTE

When setting the Quiet mode through a contact from the outdoor unit or setting the Quiet Mode
Automatic Time in the service mode using the hydro unit wired controller, the mode cannot be
controlled by user entry.

Outing mode

Heating can operate at low temperature while you are out with the Outing mode.

NOTE

- To cancel this mode, press any button on the remote controller.
- When the Outing mode is ON, the Home screen appears before entering the Setting.
- When you press any key, the Outing mode is canceled. However, pressing the keys for switching between
 the Home and Main screen does not cancel this mode.
 - HOME: Directional button, OK button
 - Main Screen: Back button

Energy-Saving Operation

The product provides functions that allow you to reduce electricity consumption.

Setting schedule

Press the 3 button, press the \nearrow , \checkmark or \lang , \gt button to select **Schedule**, and then press the **OK** button. When you select Add a schedule, you can configure settings for Daily Schedule, Weekly Schedule, Yearly Schedule, and Holiday.

Туре	Description
Daily Schedule	Can set the Quiet mode or hot water status in the preset time.Can set up to 8 schedules.
Weekly Schedule	Can set the operation for the desired units in the scheduled day and time. The scheduling is possible on the weekly basis. You can set the values for day, time, operation On/Off, scheduled units, operation state (operation mode, desired temperature).
Yearly Schedule	Can create a group for the month to schedule and assign scheduling to the group on the weekly basis. Yearly scheduling is possible and the scheduling can be assigned to up to 8 groups.
Holiday	Can set not to run the weekly and yearly schedules on holidays.



• Weekly and Yearly Schedule can cover settings up to 49.

Energy

Press the 3 button, press the \nearrow , \checkmark or \checkmark , \gt button to select **Energy**, and then press the **OK** button. You can see and set any of Energy Usage and Energy Setting.

Classification	Туре	Description	
		Displays the Instantaneous Power, Weekly Energy Usage, Monthly Energy Usage, Yearly Energy Usage, Energy Usage over Last Year, and Operation Time in graph format.	
Energy Usage	-	NOTE	
		For accuracy of operation time, use the DMS time.	
		The weekly display follows the ISO 8601 standards.	
	Target Energy Consumption	Sets the target energy consumption.	
Energy Cotting	Target Operation Time	Sets the target operation time.	
Energy Setting	Alarm Popup	Sets whether or not to generate an alarm when the target energy consumption is reached.	
	Usage Data Initialization	Initialises the entire energy function.	

Setting Options

How to set the Options

- 1 Press the 😭 button.
- 2 Press the $\sim \sim$ or $\langle \rangle$ button to select Option, and then press the **OK** button.
- **3** See the following pages to select the desired menu.

Step1	Step 2	Step 3	Step 4	Step 5	Description	Default
Button Lock					ON/OFF	OFF
Error List					-	-
Indoor Unit Information					-	-
	Wi-Fi				ON/OFF	-
Connections	Easy Connection				Connected/-	-
	Wi-Fi Reset					
	Language				Differs depending on the language	First value for the language pack
	Daylight Saving Time	Daylight Saving Time			ON/OFF	ON
		Unit			Day/Week	Week
		Month			January to December	Mar
		Week			1st to 4th, F (final week)	2nd
		Day			1 to 31	-
		All Lock			ON/OFF	OFF
User Mode		Lock Lock of Partial Function	Operation Lock		ON/OFF	OFF
				All Mode Lock	ON/OFF	OFF
			Operation	Auto Mode Lock	ON/OFF	OFF
	Lock		Operation Mode Lock	Cool Mode Lock	ON/OFF	OFF
				Heat Mode Lock	ON/OFF	OFF
			Temperature Lock		ON/OFF	OFF
			Schedule Lock		ON/OFF	OFF

Step1	Step 2	Step 3	Step 4	Step 5	Description	Default	
			LED			ON/OFF	ON
		Button Mute			ON/OFF	OFF	
			Date	Date Format	YYYY/MM/DD, DD/MM/YYYY, MM/DD/YYYY	DD/MM/YYYY	
		Current Time		Year/Month/ Day	2000 to 2099/1 to 12/1 to 31	2019.01.01	
	Wired Remote Controller			Time Format	12-Hour/24-hour	12-Hour	
	Controller		Time	Hour/Minute/ AM/PM	0 to 12/0 to 60/AM.PM	PM 12 Hour 00 Minute	
User Mode		Reset Remote Controller			-	-	
USEI Mode		Display Setting	Brightness		10 to 100%	100%	
			Screen Saver	Timer	10 to 60 seconds	30sec	
				Brightness	0,10,30,50,70%	30%	
	Smart Reset				-	-	
	Reset All User Modes				-	-	
	Service Time Check	Service Call Number			Service call number entered for Service mode	-	
		Last Inspection			Final control date entered for Service mode	-	

NOTE

- When two hydro unit wired controller are connected, the brightness can be set within 10 to 50%.
- If the screen is on stand by for an hour, in order to protect the screen it converts to screen protection
 mode for a minute before returning to the normal screen.
 If the buttons are pressed after the screen protection is displayed it converts to the stand by screen right
 away.

Setting Options

Current Time Setting (Example)

1	Press the 🛱 button.
2	Press the \wedge \vee or \langle \rangle button to select Option , and then press the OK button.
3	Press the \wedge \vee or \langle \rangle button to select User Mode , and then press the OK button.
4	Press the \wedge \vee or \langle \rangle button to select Wired Remote Controller , and then press the OK button.
5	Press the \wedge \vee or \langle \rangle button to select Current Time , and then press the OK button.
6	Press the \wedge \vee or \langle \rangle button to select Time , and then press the OK button.
7	Press the $\wedge \vee$ or $\langle \rangle$ button to select Time Format, Hour, Minute, and AM/PM, and then press
	the OK button.

Additional functions of the Hydro unit wired controller

- 1 If you want to use the various additional functions for your hydro unit wired controller, press the and buttons at the same time for more than 3 seconds.
 - The password entry screen appears.
- **2** Enter the password, 0202, and then press the **OK** button.
 - The settings screen for installation/service mode appears.
- 3 See the list of additional functions for the hydro unit wired controller on the next page, and then select the desired menu.
 - Once you have entered the setting screen, the current setting appears.
 - Refer to the chart for data setting.
 - Using the \wedge/\sim buttons, change the settings and press the) button to move to the next setting.
 - Press the **OK** button to save the new setting.
 - Press the

 button to move to the Home screen.

NOTE

While setting the data, you can press the
 button to move to the Home screen after checking the saving status at a pop-up screen.

Installation/Service mode



- Unavailable functions are marked inactive and they cannot be set.
- If communication initialization is needed after the setting, the system will reset automatically and communication will be initialized.

Step1	Step 2	Step 3	Description	Default
	Service Call Number		16-digit phone number Input: Blank, -, 0-9	-
Service Timer	Last Inspection		Year, Month, Day	-
	Installation Date		Year, Month, Day	-
Quiet Mode			Enable/Disable	Disable
Automatic Time			Entry time to Exit time	PM 10:00 ~ AM 06:00
	Cool/Heat Selection		Cool & Heat/Heat only	Cool & Heat
	MAIN/SUB wired remote		Main/Sub	Main
	Zone Selection		Zone 1/Zone 2	Zone 1
	Standard Temperature		Water Outlet/Indoor	Water Outlet
Indoor Zone Option	Temperature Unit		Celsius(°C): 1°C/0.5°C/0.1°C Fahrenheit(°F): 1°F	Fahrenheit(°F): 1°F
	Temperature Sensor Selection		Wired Remote Controller/External Temperature Sensor	Wired Remote Controller
	Room Temperature	Reference Temperature	-9 to 40°C	-
	Calibration	Calibration Value	-9.9 to 9.9°C	0°C

Step1	Step 2	Step 3	Description	Default
		Central :	ON/OFF	-
		Normal Power :	ON/OFF	-
		Mode :	Heat/Cool/Auto	-
		DHW Power:	ON/OFF	-
		DHW Mode :	Economic/Standard/ Power/Forced	-
		Water Pump :	ON/OFF	-
Indoor Zone	Indoor Zone	BUH:	ON/OFF	-
Option	Status Information	BSH:	ON/OFF	-
	Imorniacion	Flow Sensor :	lpm	-
		Inverter Pump :	0% ~ 100%	-
		EEV Step :	0~2000Step	-
		Thermostat 1 :	ON/OFF	-
		Thermostat 2 :	ON/OFF	-
		DHW Thermostat :	ON/OFF	-
		Water pressure :	0 ~ 00.0 bar	-
	Number of Connection		0 to 16	-
	View Master Indoor Unit		Address	-
		Serial No. :	-	-
	Master Indoor Zone Information	Indoor Unit Eva In Temp.(Teva_in) :	Temperature	-
Connection Information		Indoor Unit Eva Out Temp.(Teva_ out) :	Temperature	-
		Indoor Unit PHE IN(Tw1) :	Temperature	-
		Indoor Unit PHE OUT(Tw2) :	Temperature	-
		DHW Tank Temp. (Tt) :	Temperature	-
		DHW Mode :	Economic/Standard/ Power/Forced	-

Step1	Step 2	Step 3	Description	Default
	Micom Code :		Micom code	-
	Program Version :		Modified date	-
Device	Touch Code :		Touch IC code	-
Information	Program Version :		Modified date	-
	Graphic Image :		Graphic image code	-
	Program Version :		Modified date	-
Reset All Service	Erase All Service Mode Data		-	-
Modes	Initialize a Remote Controller		-	-
Initialize Unit Information	-	-	-	-
Power Master Reset 1)*			-	-
ODU K3 Reset			-	-
	10**		-	-
	20**		-	-
	30**		-	-
Field Setting Value	40**		-	-
	50**		-	-
	Simple Setting		-	-
	FSV Upload/ Download		-	-

Step1	Step 2	Step 3	Description	Default
		Water Inlet Temp. :	Temperature	-
		Water Outlet Temp. :	Temperature	-
		Backup Heater Outlet Temp. :	Temperature	-
		Mixing Valve Outlet Temp. :	Temperature	-
		Tank Temp. :	Temperature	-
	Self-Test Mode	Indoor Ambient Temp. :	Temperature	-
	Display	Indoor Ambient Temp.(Zone 2) :	Temperature	-
		Water Outlet Temp. (Zone 1) :	Temperature	-
		Water Outlet Temp. (Zone 2) :	Temperature	-
Self-Test Mode		Thermostat #1(Zone 1) :	Heat/Cool	-
		Thermostat #2(Zone 2) :	Heat/Cool	-
		Solar Panel	ON/OFF	-
	Water Pump		ON/OFF	OFF
	Booster Heater		ON/OFF	OFF
	DHW Valve(3Way Valve)		ON/OFF	OFF
	Zone 1 Valve		ON/OFF	OFF
	Backup Heater1+ Water Pump		ON/OFF	OFF
	Backup Heater 2 + Water Pump		ON/OFF	OFF
	Backup Boiler		ON/OFF	OFF
	Zone 2 Valve		ON/OFF	OFF
	Mixing Valve		ON/OFF	OFF

Step1	Step 2	Step 3	Description	Default
	Address	Main Address	00 to 4F	-
	Address	RMC Address	00 to FE	-
	Product Option ^{2)*}		Refer to the installation manual of the connected indoor unit.	-
Indoor Unit Option	Installation Option 1 ^{2)*}			-
	Installation Option 2 ^{2)*}			-
	MCILD	MCU Address	00 to 15	-
	MCU Port	MCU Port	A to F	-

^{1)*} Power Master Reset is a setting needed to supply optimized power to hydro unit wired controller when multiple indoor units are connected to hydro unit wired controller in a group.

^{2)*} The total option codes are 24 digits. You can set six digits at a time and it is distinguished by page number. Press the **OK** button to move to the next page.



• Address is displayed in hexadecimal. Please refer to the following table.

Hexadecimal	Decimal	Hexadecimal	Decimal	Hexadecimal	Decimal
00	0	10	16	20	32
01	1	11	17	21	33
02	2	12	18	22	34
03	3	13	19	23	35
04	4	14	20	24	36
05	5	15	21	25	37
06	6	16	22	26	38
07	7	17	23	27	39
08	8	18	24	28	40
09	9	19	25	29	41
0A	10	1A	26	2A	42
0B	11	1B	27	2B	43
OC	12	1C	28	2C	44
0D	13	1D	29	2D	45
0E	14	1E	30	2E	46
0F	15	1F	31	2F	47

Hexadecimal	Decimal	Hexadecimal	Decimal
30	48	40	64
31	49	41	65
32	50	42	66
33	51	43	67
34	52	44	68
35	53	45	69
36	54	46	70
37	55	47	71
38	56	48	72
39	57	49	73
3A	58	4A	74
3B	59	4B	75
3C	60	4C	76
3D	61	4D	77
3E	62	4E	78
3F	63	4F	79

How to upload or download field settings (example)

- 1 Insert an SD card into the Sub PBA SD Card slot on the Hydro unit.
- 2 Select Field Setting Value in the Service Mode.
- **3** Press the ∧ or ∨ button to select FSV Upload/Download.

NOTE

- Upload: Uploads the FSV data of the Hydro unit to the SD card.
- Download: Downloads the FSV data of the SD card to the Hydro unit.
- The upper-level controllers excluding Multi Wi-Fi Kit and VSTAT05P-1 hydro unit wired controller cannot
 use the 2-zone control and energy monitoring.
- When connecting between the VSTAT05P-1 hydro unit wired controller and an upper-level controller, the settings for FSV (4061) must be changed not to use the 2-zone control.

Field setting mode

Hydro unit: Only VHEC***S4-4P Model

• The values in the following table are just examples for your understanding.

Classification	Function	Detail	Code (Main + sub menu)	Basic	Min.	Max.	Step	Unit
	Temperature of general	Max.	1011	25	18	25	1	°C
	cooling leaving water	Min.	1012	16	5	18	1	°C
	General indoor cooling	Max.	1021	30	28	30	1	°C
	temperature	Min.	1022	18	18	28	1	°C
Remote	Temperature of general	Max.	1031	50	37	50	1	°C
controller	heating leaving water	Min.	1032	25	15	37	1	°C
	General indoor heating temperature	Max.	1041	30	18	30	1	°C
		Min.	1042	16	16	18	1	°C
	Temperature of hot water tank	Max.	1051	50	40	75	1	°C
		Min.	1052	35	30	40	1	°C
	Auto heating ambient	Max.	2011	-10	-20	5	1	°C
	temperature	Min.	2012	15	10	20	1	°C
	Temperature of auto heating leaving water	Max.	2021	45	35	50	1	°C
	(WL1-Floor)	Min.	2022	30	17	37	1	°C
Water Law	Temperature of auto	Max.	2031	50	35	50	1	°C
	heating leaving water (WL2-FCU)	Min.	2032	35	17	50	1	°C
	Auto heating of hydro unit wired controller	WL type	2041	1 (WL1)	1	2	-	-
	Use of thermostat	-	2091	0 (No)	0	2	-	-

Field setting mode

Classification	Function	Detail	Code (Main + sub menu)	Basic	Min.	Max.	Step	Unit
	Activating hot water function	DHW application	3011	0 (No)	0	1 (Yes)	-	-
		Max.	3021	50	45	50	1	°C
		Stop	3022	2	0	10	1	°C
		Start	3023	5	5	20	1	°C
DHW	Heating mode	Minimum heating operation time	3024	5	1	20	1	min.
		DHW operation time	3025	30	5	95	5	min.
		Heating operation time	3026	3	0.5	10	0.5	hour
	Booster heater	Operation	3031	1 (On)	0 (Off)	1	-	-
		Delayed time	3032	20	20	95	5	min.
		Overshoot	3033	0	0	4	1	°C
	Disinfection	Operation	3041	1 (Yes)	0 (No)	1	-	-
		Operation interval	3042	Fri (5)	Sun (0)	AllDay (7)	-	day
		Start time	3043	23	0	23	1	hour
DHW		Target temp.	3044	70	40	70	5	°C
DITTY		Holding time	3045	10	5	60	5	min.
		Max. operation time	3046	8	1	24	1	hour
	Solar heat panel / defrost signal	Solar heat panel H/P interlocking / defrost signal	3061	0	0	3	-	-
		Heating/hot water priority	4011	0 (Hot water)	0	1 (Heating)	-	-
Heating	Heating mode	Heating priority	4012	0	-15	20	1	°C
		Heating Off	4013	35	14	35	1	°C

Classification	Function	Detail	Code (Main + sub menu)	Basic	Min.	Max.	Step	Unit
		Temperature of cooling water oulet	5011	25	5	25	1	°C
		Room Temperature of cooling Mode	5012	30	18	30	1	°C
		Temperature of heating leaving water	5013	15	15	50	1	°C
	Outing mode	Indoor heating temperature	5014	16	16	30	1	°C
		Temperature of auto heating WL1 water	5017	15	15	50	1	°C
Others		Temperature of auto heating WL2 water	5018	15	15	50	1	°C
		Temperature of hot water Tank	5019	30	30	75	1	°C
	Economic DHW mode	Temperature of hot water Tank	5021	5	0	40	1	°C
		Operation	5041	0 (No)	0	1 (Yes)	-	-
	Smart grid (Power peak control)	Heat source for operation limit	5042	0 (All)	0	2	1	-
	Controlly	Contact Logic	5043	1 (High)	0 (Low)	1	-	-
Others	Ratio of hot water supply compare to heating	A/7 (Ratio is determined based on the value of the A)7 means Heating capacity=Hot water capacity	5061	7	1	7	1	-

NOTE

• The menu not supported by the product will not be displayed.

Field setting mode

Hydro unit HT: Only VHTC***S4-4P Model

• The values in the following table are just examples for your understanding.

Classification	Function	Detail	Code (Main + sub menu)	Basic	Min.	Max.	Step	Unit
	Temperature of general	Max.	1011	-	-	-	1	°C
	cooling leaving water	Min.	1012	-	-	-	1	°C
	General indoor cooling	Max.	1021	-	-	-	1	°C
	temperature	Min.	1022	-	-	-	1	°C
Remote	Temperature of general	Max.	1031	80	40	80	1	°C
controller	heating leaving water	Min.	1032	25	25	40	1	°C
	General indoor heating temperature	Max.	1041	30	18	30	1	°C
		Min.	1042	16	16	18	1	°C
	Temperature of hot water tank	Max.	1051	70	45	75	1	°C
		Min.	1052	45	35	45	1	°C
	Auto heating ambient	Max.	2011	-10	-20	5	1	°C
	temperature	Min.	2012	15	10	20	1	°C
	Temperature of auto	Max.	2021	45	35	80	1	°C
Water Law	heating leaving water (WL1-Floor)	Min.	2022	30	25	80	1	°C
	Temperature of auto	Max.	2031	50	35	80	1	°C
	heating leaving water (WL2-FCU)	Min.	2032	35	25	80	1	°C
Water Law	Auto heating of hydro unit wired controller	WLtype	2041	1(WL1)	1	2	-	-
	Use of thermostat	-	2091	O(No)	0	2	-	-

Classification	Function	Detail	Code (Main + sub menu)	Basic	Min.	Max.	Step	Unit
	Activating hot water function	DHW application	3011	0(No)	0	1(Yes)	-	-
		Max.	3021	70	45	75	1	°C
		Stop	3022	2	0	10	1	°C
		Start	3023	5	5	20	1	°C
	Heating mode	Minimum Heating Operation time	3024	5	1	20	1	min.
		DHW operation time	3025	30	5	95	5	min.
		Heating operation time	3026	3	0.5	10	0.5	hour
		Operation	3031	1 (On)	0 (Off)	1	-	-
DHW	Booster heater	Delayed time	3032	20	20	95	5	min.
DUM		Overshoot	3033	0	0	4	1	°C
	Disinfection	Operation	3041	1 (Yes)	0 (No)	1	-	-
		Operation interval	3042	Fri (5)	Sun (0)	AllDay (7)	-	day
		Start time	3043	23	0	23	1	hour
		Target temp.	3044	70	60	75	5	°C
		Holding time	3045	10	5	60	5	min
		Max. operation time	3046	8	1	24	1	hour
	Solar heat panel / defrost signal	Solar heat panel H/P interlocking / defrost signal	3061	0	0	3	-	-
Hastins	Heating mode	Heating/hot water priority	4011	0 (Hot water)	0	1 (Heating)	-	-
Heating	Heating mode	Heating priority	4012	0	-15	20	1	°C
		Heating Off	4013	35	14	35	1	°C
		Temperature of cooling water oulet	5011	-	-	-	1	°C
Others	Outing mode	Room Temperature of cooling Mode	5012	-	-	-	1	°C
		Temperature of heating leaving water	5013	25	25	80	1	°C

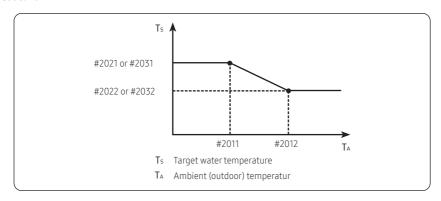
Field setting mode

Classification	Function	Detail	Code (Main + sub menu)	Basic	Min.	Max.	Step	Unit
		Indoor heating temperature	5014	16	16	30	1	°C
	Outing mode	Temperature of auto heating WL1 water	5017	25	25	80	1	°C
	Outing mode	Temperature of auto heating WL2 water	5018	25	25	80	1	°C
		Temperature of hot water Tank	5019	35	35	75	1	°C
	Economic DHW mode	Temperature of hot water Tank	5021	5	0	40	1	°C
Others	Smart grid (Power peak control)	Operation	5041	0 (No)	0	1 (Yes)	-	-
		Heat source for operation limit	5042	0 (All)	0	2	1	-
	Controly	Contact Logic	5043	1 (High)	0 (Low)	1	-	-
	Ratio of hot water supply compare to heating	A/7 (Ratio is determined based on the value of the A)7 means Heating capacity=Hot water capacity	5061	7	1	7	1	-

Functions that requires setting according to field specification

- Code: 10**
 - Upper and lower temperature limits for Heating (Water out, Room), Cooling (Water out, room), DHW (Tank) mode
 - 1011: Maximum Value of cooling leaving water temperature setting in hydro unit wired controller
 - 1012: Minimum Value of cooling leaving water temperature setting in hydro unit wired controller
 - 1021: Maximum Value of cooling indoor's room temperature setting in hydro unit wired controller
 - 1022: Minimum Value of cooling indoor's room temperature setting in hydro unit wired controller
 - 1031: Maximum Value of heating leaving water temperature setting in hydro unit wired controller
 - 1032: Minimum Value of heating leaving water temperature setting in hydro unit wired controller
 - 1041: Maximum Value of heating indoor's room temperature setting in hydro unit wired controller
 - 1042: Minimum Value of heating indoor's room temperature setting in hydro unit wired controller
 - 1051: Maximum Value of hot water tank temperature setting in hydro unit wired controller
 - 1052: Minimum Value of hot water tank temperature setting in hydro unit wired controller

Code: 20**



- 1) In case of outdoor temperature (Ta)°C < (Code #2011)°C
 - Code #2041: 1 (Floor) Setting Ts = #2021
 - Code #2041: Setting 2 (Fan Coil Unit) Ts = #2031
- 2) In case of (Code #2011)°C ≤ outdoor temperature(Ta)°C < (Code #2012)°C
 - Code #2041: Setting 1(Floor) Ts = #2021 + (#2022 #2021) / (#2012 #2011) * (Ta #2011)
 - Code #2041: Setting 2(Fan Coil Unit) Ts = #2031 + (#2032 #2031)/(#2012 #2011) * (Ta #2011)
- 3) In case of (Code #2012)°C ≤ outdoor temperature(Ta) °C
 - Code #2041: Setting 1(Floor) Ts = #2022
 - Code #2041: Setting 2(Fan Coil Unit) Ts = #2032

2091: Application of External thermostat in user's system

- 0: Disabled
- 1: Turn on or off the device using the thermostat
- 2: Turn on or off the device in connection with the thermostat and discharged water temperature settings
 - * Discharged water temperature setting when a thermostat is connected
 - Cooling mode: #1012 value (Hydro unit wired controller category field specifications)
 - Heating mode: Value set according to water laws

Code 30**

User's options for domestic hot water (DHW) tank heating

3011: Application of DHW tank

302*: Heat pump variables for tank temp. control and combination with booster heater

- 3021: Maximum DHW tank temperature with heat pump (H/P) operation
- 3022: Offset temperature of forced DHW's thermo off (Only Hydro Unit / Not Hydro Unit HT)
 Forced DHW's thermo off: Water tank temperature ≥ Code #3021 Code #3022

Field setting mode

- 3023: Offset temperature of DHW's thermo on (Only Hydro Unit / Not Hydro Unit HT)
 Temperature of Hot Water Tank ≤ Setting temperature of Hot Water Tank + 1
 AND Temperature of Hot Water Tank ≤ Code #3021 – Code #3022 + Code #3023
- 3024: When Heating and DHW mode is operating at the same time and heating mode is operating
 based on leaving water temperature with Thermo off, heating will operate for number of
 minutes stated in #3024 after every time maximum DHW operation time ends
- 3025: DHW operation time when heating and DHW mode is operating at the same time
- 3026: Heating operation time when heating and DHW mode is operating at the same time

303*: Booster heater variables for combination with heat pump

- 3031: Application of Booster heater
- 3032: Booster heater startup delay timer
- 3033: Booster heater overshoot temperature(FSV #3033, Default "0°C", Range 0 ~ 4°C)

304*: Setting hot water tank disinfection period

- 3041: Application of disinfection function
- 3042: Scheduling (day)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	AllDay
0	1	2	3	4	5	6	7

- 3043: Starting time (hour)
- 3044: Target tank temp
- 3045: Duration time (After reaching the target temperature)
- 3046: Maximum duration of disinfection operation (disinfection operation stops after the specified duration)
 - * Disinfection operation can start if a booster heater is connected.
 - * Check the booster heater capacity and booster heater failure, if disinfection operation does not work normally over the maximum duration. (E919 error)
- 3061: Interlock between solar pump and hot water
 - 0: Hydro unit 's operation regardless of solar pump activation
 - 1: Hydro unit's stop when solar pump is operating
 - 2: Disabled
 - 3: Defrost signal output when entering defrost mode

Code 401*

- Space/DHW heating priority and control variables
- 4011: Priority setting of simultaneous operation both hot water and heating
 - 0: Hot water operation has priority. (The related operation is followed with 302*)
 - 1: Heating operation has priority. (If an ambient temperature < 4012, hot water operation is neglected.)

- 4012 : The temperature of forced heating priority (Refer to 4011)
- 4013: If the ambient temperature > 4013, Heating Mode stops in auto mode.

Code 50**

- User's options for extra functions

501*: New target temperatures of each mode (Heating/Cooling/DHW) when "Outing" function is on

- 5011: Value of cooling leaving water temperature setting when "Outing" function is on
- 5012: Value of cooling indoor's room temperature setting when "Outing" function is on
- 5013: Value of heating leaving water temperature setting when "Outing" function is on
- 5014: Value of heating indoor's room temperature setting when "Outing" function is on
- 5017: Value of Water Law's floor control (#2041=1) leaving water temperature setting when "Outing" function is on
- 5018: Value of Water Law's FCU control (#2041=2) leaving water temperature setting when "Outing" function is on
- 5019: Value of DHW tank's temperature setting

5021: Offset temperature setting when Economic DHW operation is on (During Economic DHW operation, temperature will be automatically set lower by value of #5021(°C) than actual setting)

504*: Smart Grid control

- 5041: Application of Smart Grid control
- 5042: Heater application during Smart Grid control
 - 0: Heater off during Smart Grid control
 - 1: Heater control during Smart Grid control
 - 2: Not use
- 5043: Input Voltage from Smart Grid contact port
 - 0: If Smart Grid Voltage = 0V, Smart Grid Control is Operated
 - 1: If Smart Grid Voltage = 5V, Smart Grid Control is Operated
- 5061: Water supply capacity ratio compared to heating: The load of hot water tank if designed heating (floor or Fan coil unit) load is 7

ex) When required heating load is 14000W, required hot water tank load 10000W, 10000/14000x7= Set 5

Maintaining the Unit

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 LENNOX local technician. Besides keeping the remote
controller clean by means of a soft damp cloth, no maintenance is required by the operator.

⚠ WARNING

- During longer periods of standstill, e.g. during summer with a heating only application, it is very important NOT TO SWITCH OFF THE POWER SUPPLY towards the unit.
- Switching off the power supply stops the automatic repetitive movement of the motor in order to prevent it from getting jammed.

Emergency heating / Emergency hot water supply

<Emergency heating_(when using #4021)>

- Heating function is performed only by the backup heater if the outdoor unit malfunctions (available only when a backup heater is connected).
- Default operation : Automatic heating is performed at a set temperature of 45°C.

Error codes

It the unit has some problem to work properly, error codes will be displayed on the hydro unit wired controller. The following table describes the explanation of the error codes.

Display	Explanation	Error Source
101	Hydro Unit / Outdoor Unit communication connection error	Hydro Unit
120	Short- or open-circuit error of the room temperature sensor of the Zone 2 indoor unit (detected only when the room thermostat is used)	Hydro Unit
121	Short- or open-circuit error of the room temperature sensor of the Zone 1 indoor unit (detected only when the room thermostat is used)	Hydro Unit
122	EVA Inlet temp sensor SHORT or OPEN	Hydro Unit
123	EVA Outlet temp sensor SHORT or OPEN	Hydro Unit
162	EEPROM Error	Hydro Unit
198	Error of Terminal Block's Thermal Fuse(Open)	Hydro Unit
201	Hydro Unit / Outdoor Unit communication error(Matching error)	Hydro Unit/ Ourdoor Unit
202	Hydro Unit / Outdoor Unit communication error(3 min)	Hydro Unit/ Ourdoor Unit
203	Communication error between INVERTER and MAIN MICOM (4 min)	Outdoor Unit
221	Outdoor Unit air temperature sensor error	Outdoor Unit
231	Condenser temperature sensor error	Outdoor Unit
251	Discharge temperature sensor error	Outdoor Unit
320	OLP sensor error	Outdoor Unit
403	Plate heat exchanger freeze detection (During cooling operation)	Outdoor Unit
404	Protection of Outdoor Unit when it is overload (during Safety Start, Normal operation state)	Outdoor Unit
407	Comp down due to high pressure sensor	Outdoor Unit
416	Discharge of a compressor is overheated	Outdoor Unit
419	OUTDOOR UNIT EEV operation error	Outdoor Unit
425	Power source line missing error (only for 3-phase model)	Outdoor Unit
436	Plate heat exchanger freeze detection (During heating operation)	Outdoor Unit
440	Heating operation blocked (outdoor temperature over 35 °C)	Outdoor Unit
441	Cooling operation blocked (outdoor temperature under 9 °C)	Outdoor Unit
458	OUTDOOR UNIT fan1 error	Outdoor Unit
461	[Inverter] Compressor startup error	Outdoor Unit
462	[Inverter] Total current error/PFC over current error	Outdoor Unit

Error codes

Display	Explanation	Error Source
463	OLP is overheated	Outdoor Unit
464	[Inverter] IPM over current error	Outdoor Unit
465	Compressor overload error	Outdoor Unit
466	DC LINK over/low voltage error	Outdoor Unit
467	[Inverter] Compressor rotation error	Outdoor Unit
468	[Inverter] Current sensor error	Outdoor Unit
469	[Inverter] DC LINK voltage sensor error	Outdoor Unit
470	Outdoor unit EEPROM Read/Write Error	Outdoor Unit
471	Outdoor unit EEPROM Read/Write Error(OTP error)	Outdoor Unit
474	IPM(IGBT Module) or PFCM temperature sensor Error	Outdoor Unit
475	Outdoor Unit Fan2 error	Outdoor Unit
484	PFC Overload Error	Outdoor Unit
485	Input current sensor error	Outdoor Unit
500	IPM is overheated	Outdoor Unit
507	Comp down due to high pressure switch	Outdoor unit
554	Gas leak error	Outdoor Unit
590	Inverter EEPROM Checksum error	Outdoor Unit
601	Communication error between the Hydro Unit and hydro unit wired controller	Hydro Unit
604	Communication tracking error between the Hydro Unit and hydro unit wired controller	Hydro Unit
653	Hydro unit wired controller temp sensor SHORT or OPEN	Hydro Unit, Hydro unit wired controller
654	Memory(EEPROM) Read/Write Error(Hydro unit wired controller data error)	Hydro Unit, Hydro unit wired controller
899	Short- or open-circuit error of the Zone 1 water-out temperature sensor	Hydro Unit
900	Short- or open-circuit error of the Zone 2 water-out temperature sensor	Hydro Unit
901	Water inlet (PHE) temperature sensor error(open/short)	Hydro Unit
902	Water outlet (PHE) temperature sensor error(open/short)	Hydro Unit

Display	Explanation	Error Source
903	Water outlet (backup heater) temperature sensor error	Hydro Unit
904	DHW tank temperature sensor error	Hydro Unit
906	Refrigerant gas inlet (PHE) temperature sensor (open/short)	Outdoor Unit
907	Error due to pipe rupture protection Hydro Unit	
908	Error due to freeze prevention (Re-operation is possible)	Hydro Unit
909	Error due to freeze prevention (Re-operation is impossible)	Hydro Unit
910	Water temperature sensor on water outlet pipe is detached	Hydro Unit
911	Flow Switch Off Error, When Water pump is running	Hydro Unit
912	Normal flow rate error • in case of normal flow rate in 10min during water pump signal is OFF	Hydro Unit
913	Six times detection for Flow Switch Error (Re-operation is not possible)	Hydro Unit
914	Error due to incorrect thermostat connection	Hydro Unit
915	Error on DC fan (Non-operating)	Hydro Unit
916	Mixing valve sensor error	Hydro Unit
917	Water Tank Sensor configuration error	Hydro Unit
919	Error that the set temperature for disinfection operation is not reached, or, after reaching, the temperature fails to continue for the requested time	Hydro Unit
920	FSV SD card data error	Hydro Unit



QUESTIONS OR COMMENTS?

COUNTRY	CALL	OR VISIT US ONLINE AT
AMERICA	800-953-6669	www.lennox.com for homeowners, www.lennoxpros.com for dealer/contractor