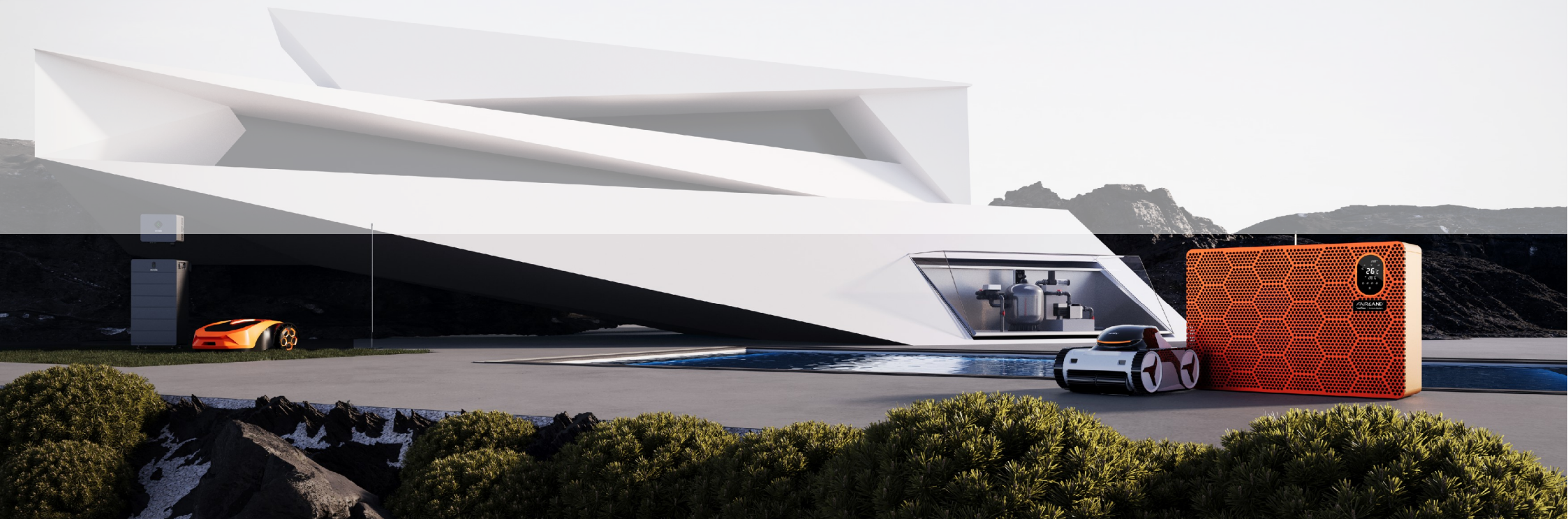


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2-ZONE CONTROL APPLICATION





2-ZONE CONTROL APPLICATION

Introduce

	Space heating terminal			
Terminal type				
	Cast iron steel radiator	Copper and aluminum radiators	fan coil	Underfloor heating
Design water temperature	55°C	45°C	45°C	35°C

- Standard design specifications for conventional floor heating systems: water supply temperature should be between **35–45 °C**, with a maximum temperature **not exceeding 50 °C**; if the water supply temperature remains above 55 °C over an extended period, it may damage the floor surface, piping materials, the main unit, affecting indoor comfort and safety.
- For radiators and fancoil units, the needed water temperature typically **exceeds 45°C**;

Therefore, the 2-zone function for high and low-temperature applications features separate water supply circles and independent temperature control, allowing each end to operate within its respective optimal water temperature range without interfering with one another, thereby achieving greater energy efficiency.

2-ZONE CONTROL APPLICATION

Application 1: 2-zone control based on water temperature

Function: Space Cooling
Space Heating
Domestic hot water (DHW)

Key features: Dual-zone control system and secondary water circuit system; PUMPo provides circulation for Zone A, PUMPmix provides circulation for Zone B.

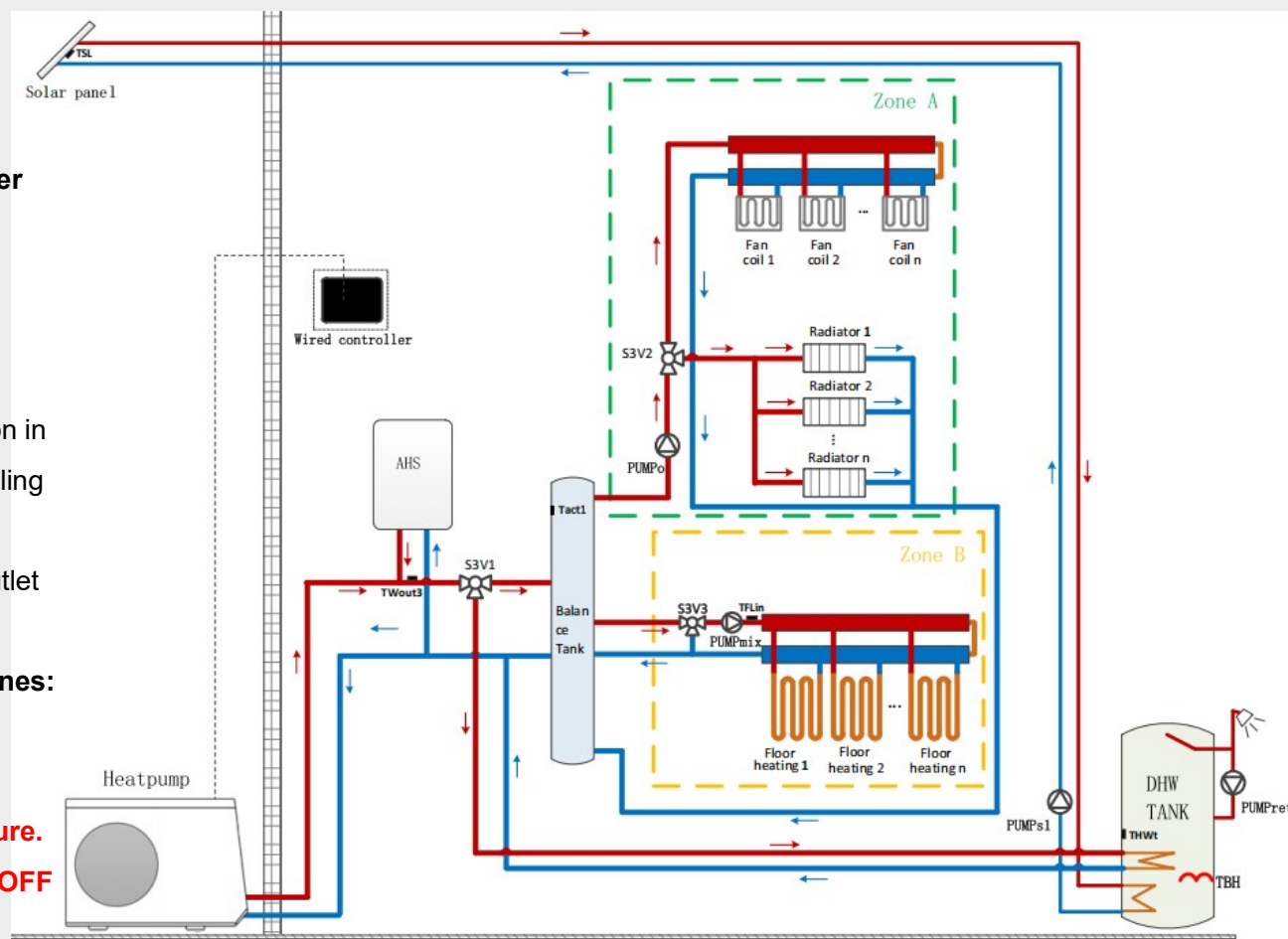
S3V1: Switch the water flow mode from space heating mode to DHW mode.

S3V2: Disables the heating loop to prevent condensate formation in the heating system, and switches to the air-coil water circuit cooling mode.

S3V3: In the dual-zone control mode, adjust the floor heating outlet water temperature to be close to the set value.

The wired controller sets the water temperatures for two zones:
Zone A has a higher temperature, Zone B has a lower temperature.

- Compressor ON/OFF is controlled by the water temperature.
- PUMPo operates with ZONEA Heating/Cooling mode ON/OFF
- PUMPmix operates with ZONEB Heating/Cooling mode ON/OFF





2-ZONE CONTROL APPLICATION

Application 2: 2-zone control based on water temperature and room temperature

Function: Space Cooling
Space Heating
Domestic hot water (DHW)

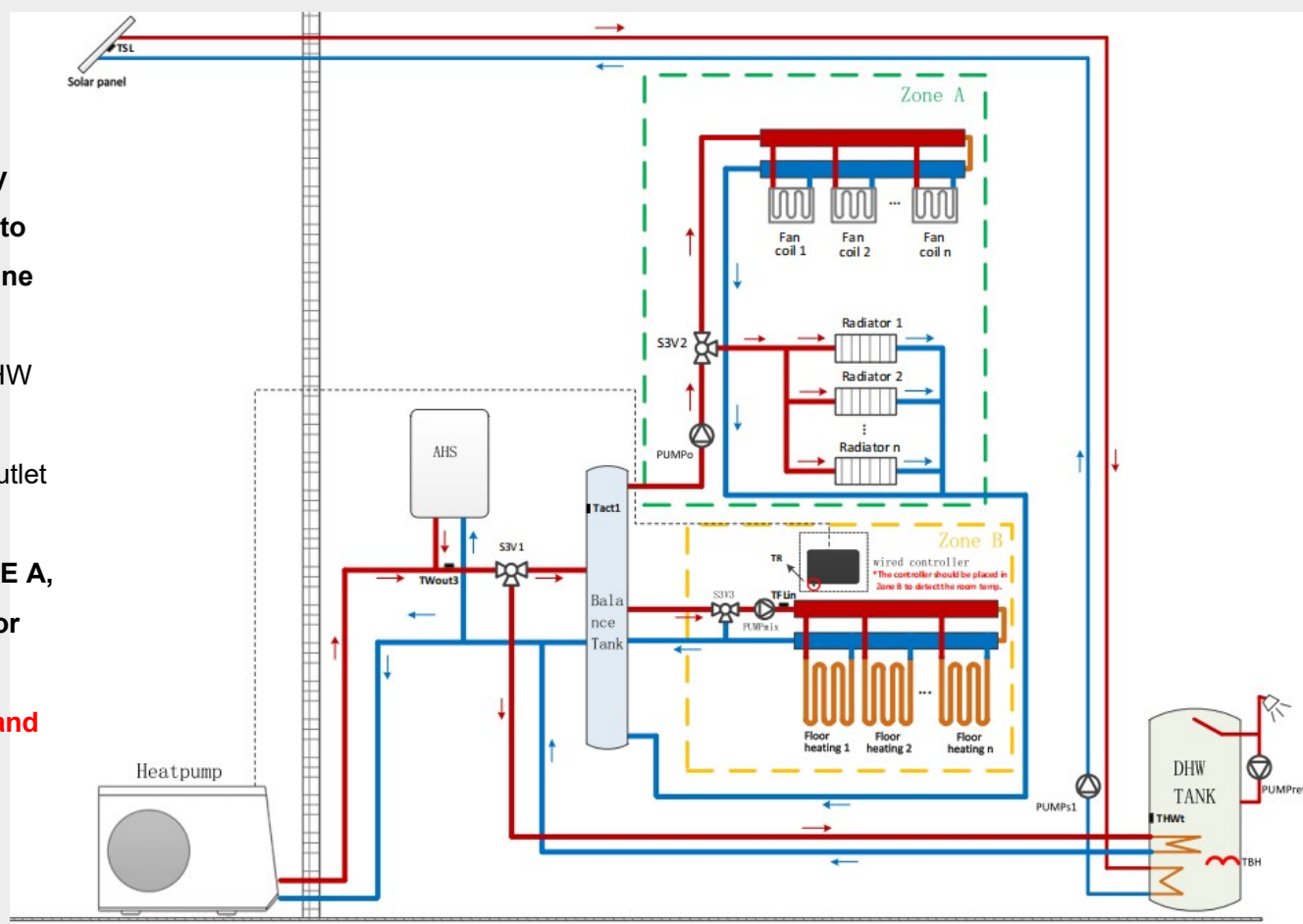
Main Features: Dual-zone control system and secondary water circuit system; PUMPo supplies circulating water to Zone A, while PUMPmix supplies circulating water to Zone B.

S3V1: Switch the water flow from space heating mode to DHW mode

S3V3: In the 2-zone control mode, adjust the floor heating outlet water temperature to be close to the set value.

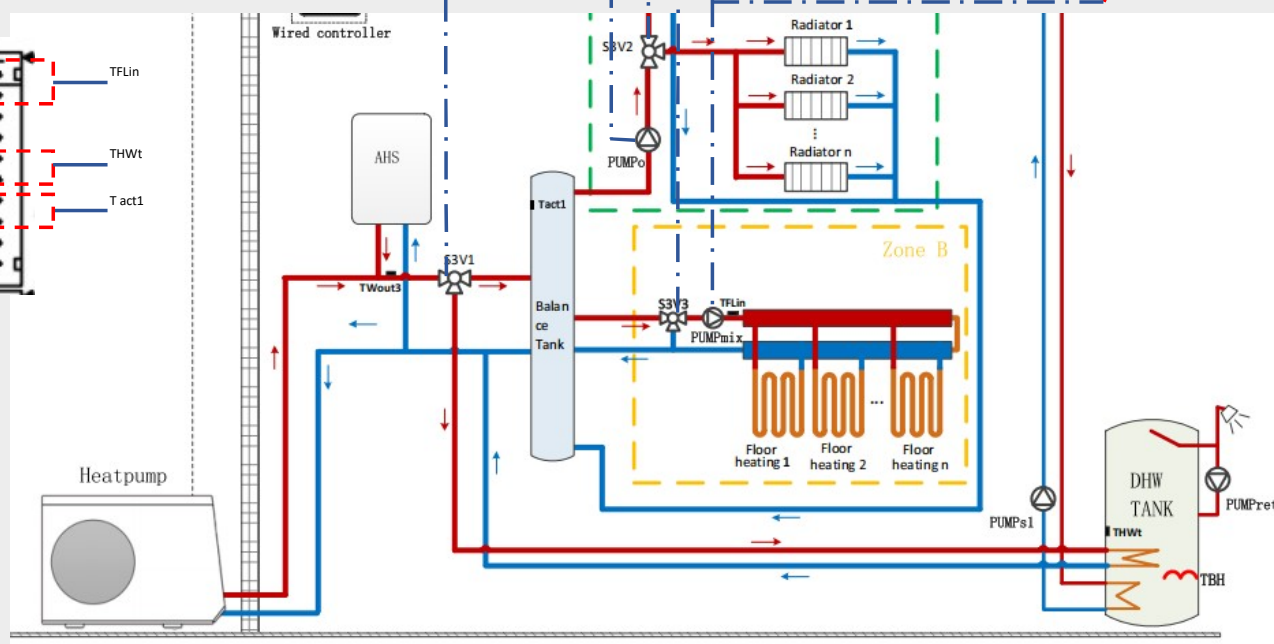
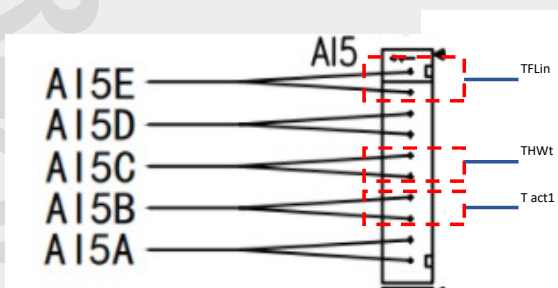
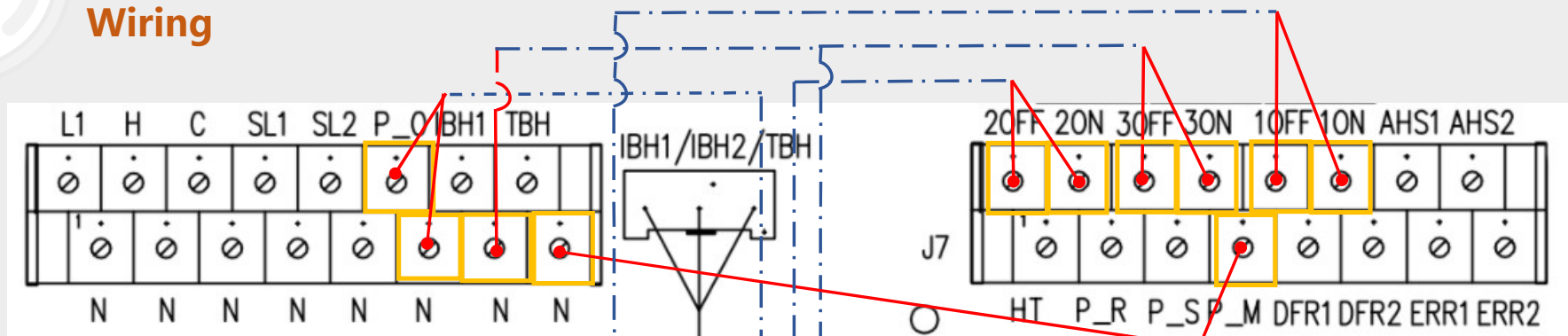
The wired controller sets the water temperature for ZONE A, and sets the room temperature and water temperature for ZONE B

- Compressor Start/Stop controlled by mode ON/OFF and water temperature
- PUMPo operates with ZONE A ON/OFF
- PUMPmix operates with ZONE B ON/OFF
- S3V3 is controlled by room temperature



Application 1: 2-zone control based on water temperature

Wiring



Common components:

temperature sensor :

TFLin: Underfloor heating inlet water temperature

Tact1: Buffer tank temperature

water pump :

PUMPo: External pump

PUMpmix: Mixed Water Pump

3-way valve :

S3V1: DHW Three-way Valve

S3V2: Cooling Three-way Valve

S3V3: Mixing three-way valve

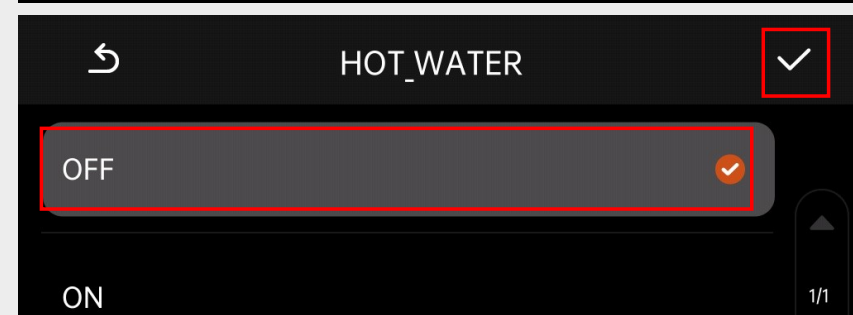
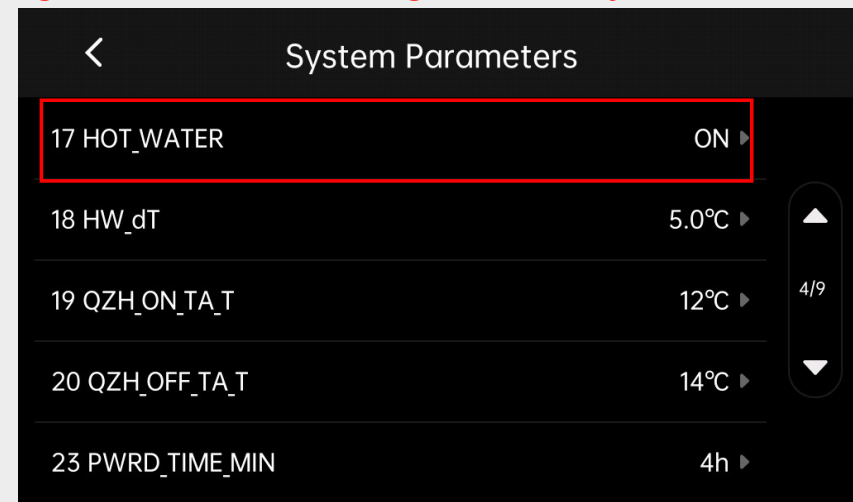
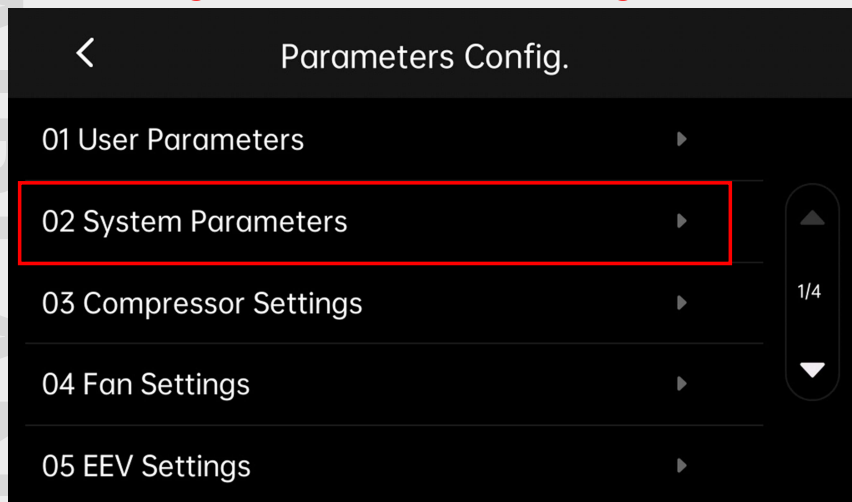


Application 1: Dual-zone control based on water temperature

Wired controller Settings

① If the THWt (domestic water tank temperature sensor) is not connected, please disable the hot water function; otherwise, an E12 error will be reported.

Settings location: Admin Settings – Maintenance Settings – Parameters Configuration – System Parameters





Application 1: Dual-zone control based on water temperature

Wired controller Settings

② When a buffer water tank is installed, you should set [TEMP_CTRL_OBJ] to [TACT.WATER] in System Parameters and enable TACT1_SENSOR in [Input & Sensors].

Settings location: Admin Settings – Maintenance Settings – Parameters Configuration – System Parameters

<

System Parameters

07 PWR_DOWN_MEM ON ▶

08 PWR_ON_RUN OFF ▶

09 PUMP_RUN_MODE Interval ▶

10 TEMP_CTRL_OBJ OUTLET.WATER ▶

11 CL_TEMP_CORR 0.0°C ▶

2/9

→

<

Input & Sensors

29 J5 range min. 0.0bar ▶

30 J5 range max. 35.0bar ▶

31 J6 range min. 0.0bar ▶

32 J6 range max. 20.0bar ▶

33 TACT1_SENSOR OFF ▶

6/9

→

↶

TEMP_CTRL_OBJ

✓

INLET.WATER

OUTLET.WATER

TACT.WATER ✓

1/1

↶

TACT1_SENSOR

✓

OFF

ON ✓

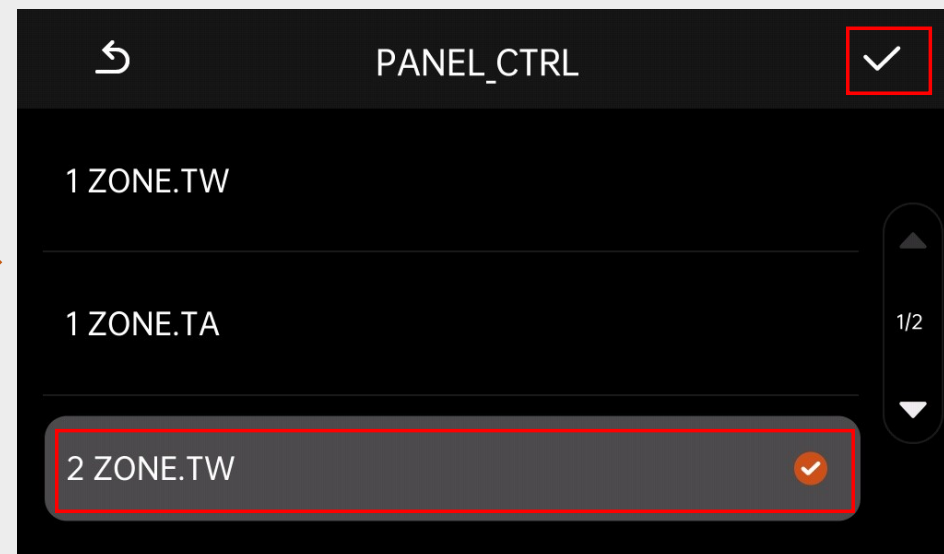
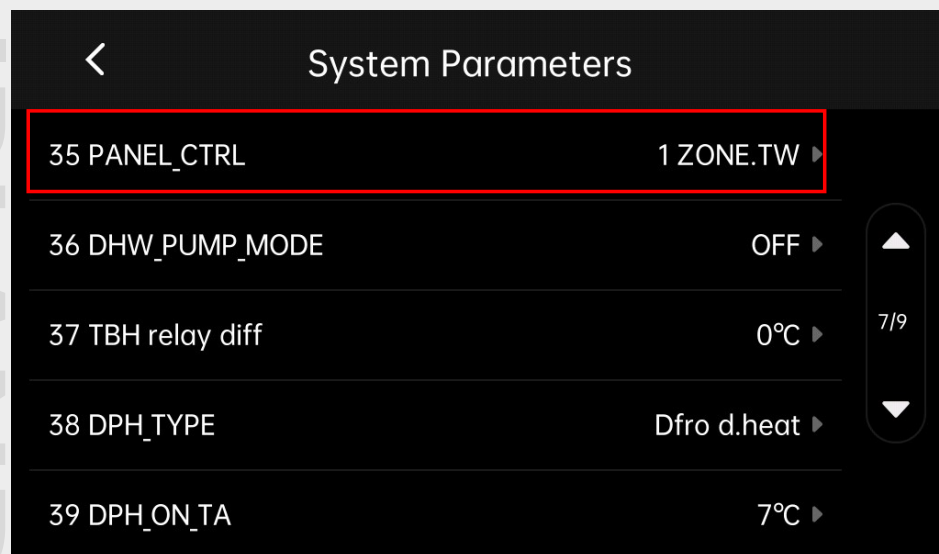
1/1



Application 1: Dual-zone control based on water temperature

Wired controller Settings

- ③ Set [PANEL_CTRL] in System Parameters to [2 ZONE.TW].



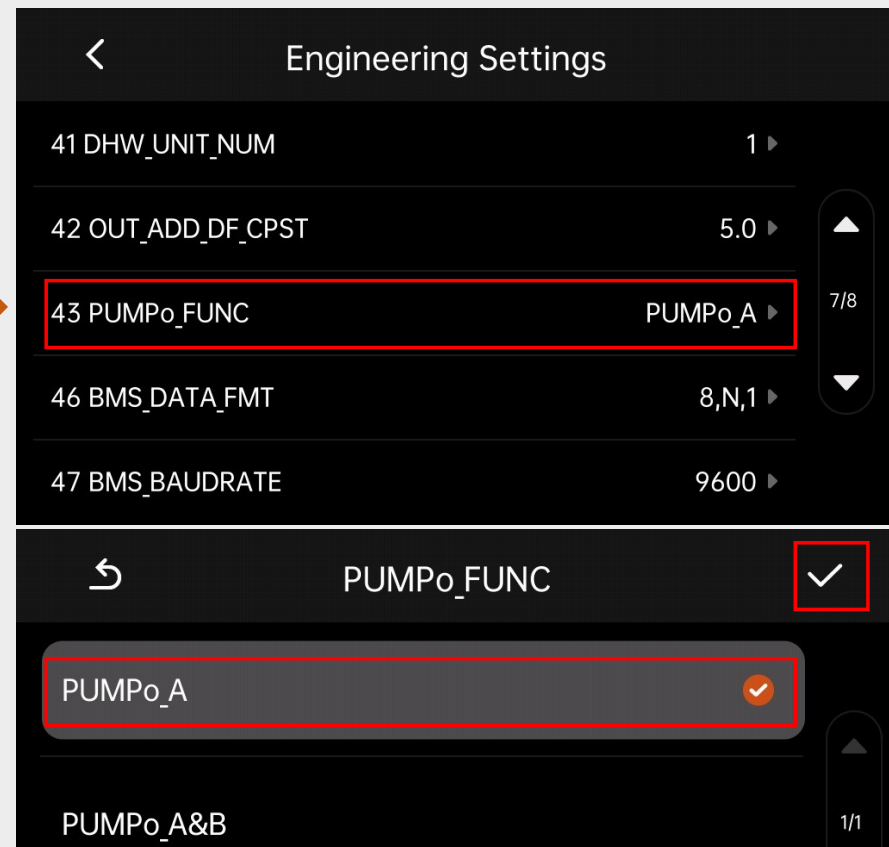
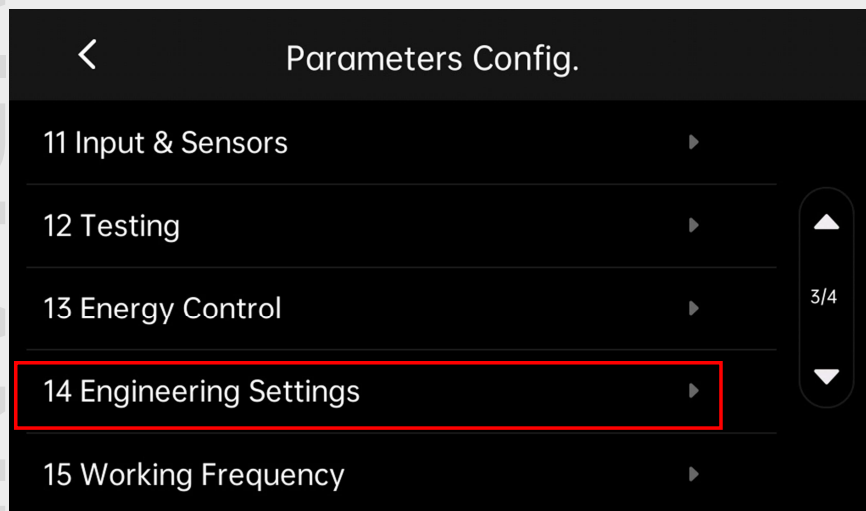


Application 1: Dual-zone control based on water temperature

Wired controller Settings

④ If PUMPo is used for the water circuit in Region A, the PUMPo function [PUMPo_FUNC] must be set to PUMPo_A.

Setting location: Admin Settings – Parameters Config – Engineering Settings





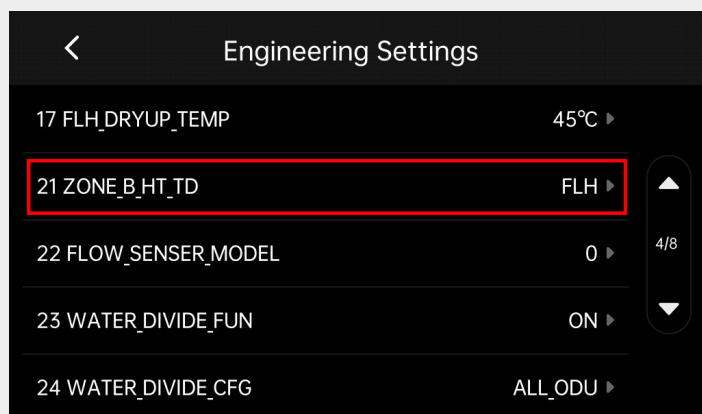
Application 1: Dual-zone control based on water temperature

Wired controller Settings

⑤ If ZONE B is for underfloor heating, the ZONE_B_HT_TD setting in the Engineering Settings must be set to [FLH].

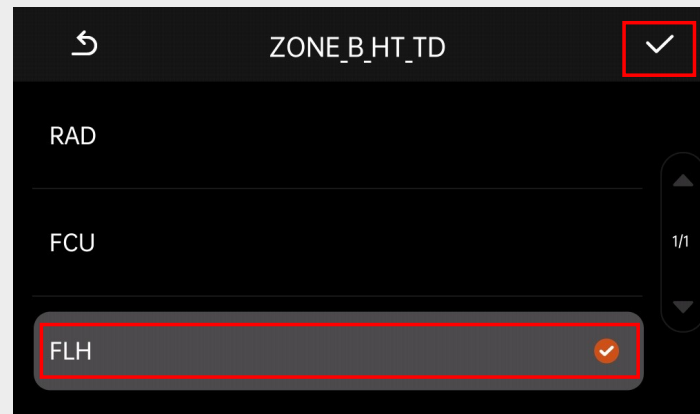
Settings location: Parameters config – Engineering settings

Enable the underfloor heating inlet water temperature sensor TFLin in the [Input & Sensors] as needed.



Engineering Settings

17 FLH_DRYUP_TEMP	45°C ▶
21 ZONE_B_HT_TD	FLH ▶
22 FLOW_SENSEN_MODEL	0 ▶
23 WATER_DIVIDE_FUN	ON ▶
24 WATER_DIVIDE_CFG	ALL_ODU ▶

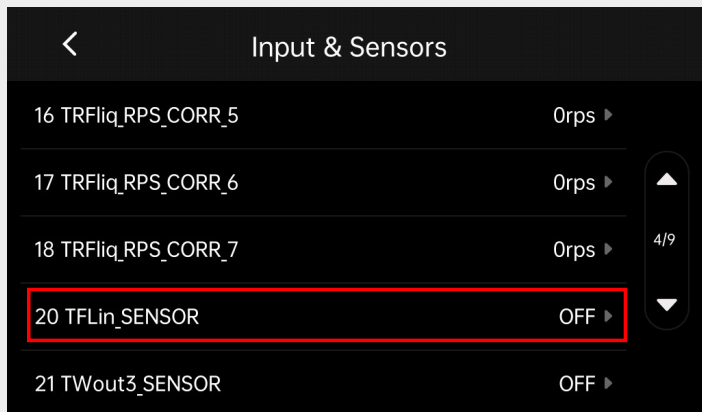


ZONE_B_HT_TD

RAD

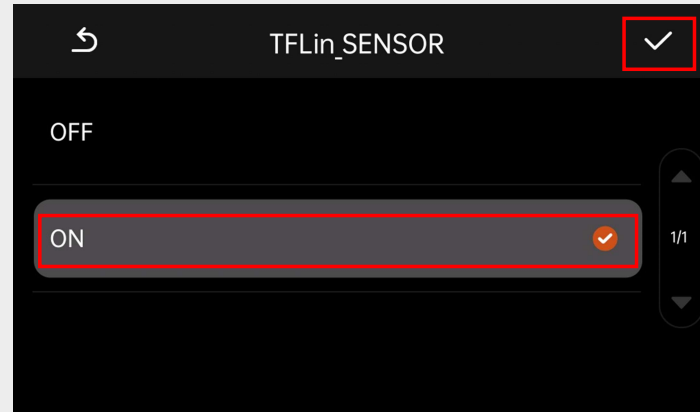
FCU

FLH



Input & Sensors

16 TRFliq_RPS_CORR_5	0rps ▶
17 TRFliq_RPS_CORR_6	0rps ▶
18 TRFliq_RPS_CORR_7	0rps ▶
20 TFLin_SENSOR	OFF ▶
21 TWout3_SENSOR	OFF ▶

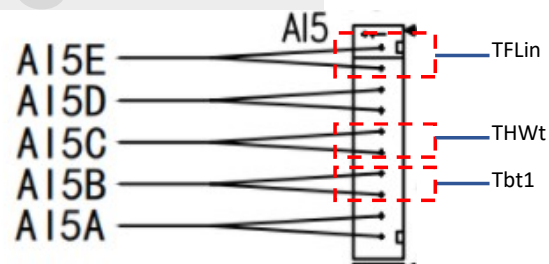
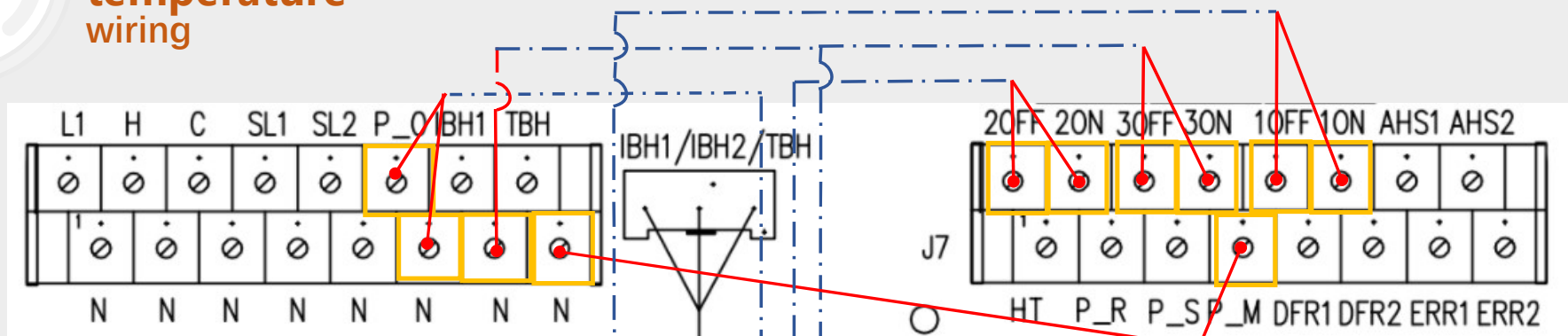


TFLin_SENSOR

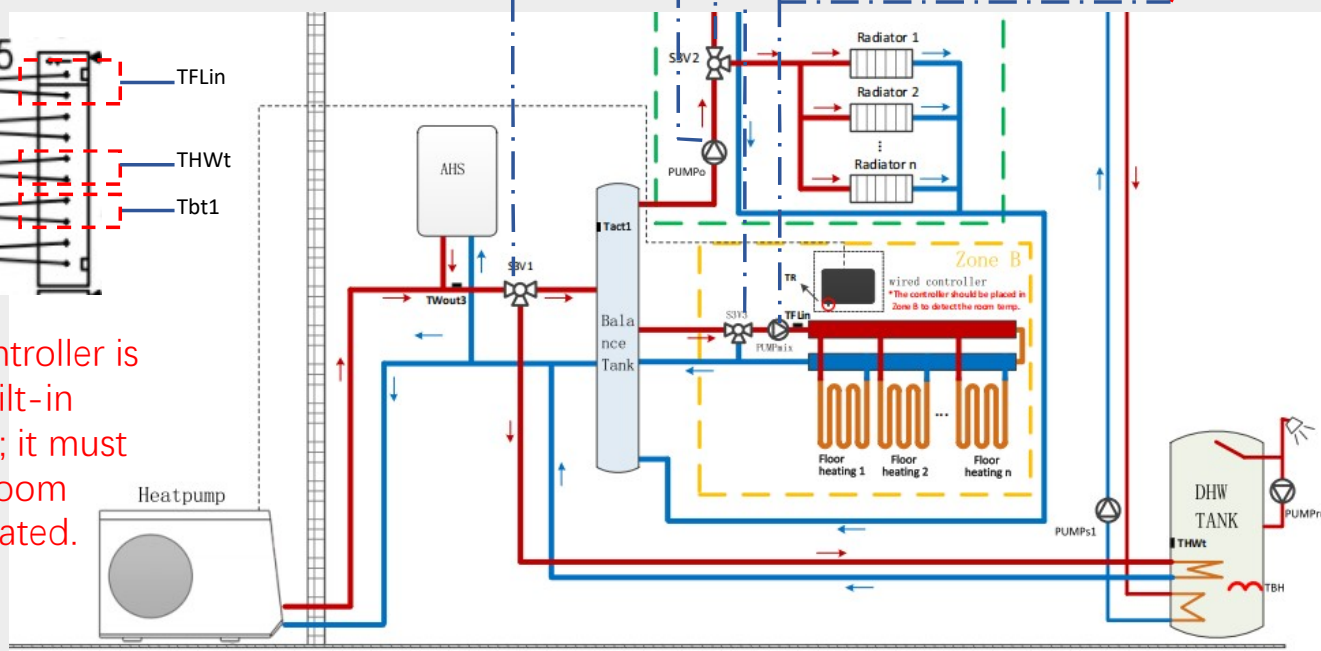
OFF

ON

Application 2: Dual-zone control based on water temperature and room temperature wiring



Note: The wired controller is equipped with a built-in temperature sensor; it must be installed in the room where Zone B is located.



Common components:

temperature sensor :

TFLin: Underfloor heating inlet water temperature

Tact1: Buffer tank temperature

water pump :

PUMPo: External pump

PUMPmix: Mixed Water Pump

3-WAY valve :

S3V1: DHW Three-way Valve

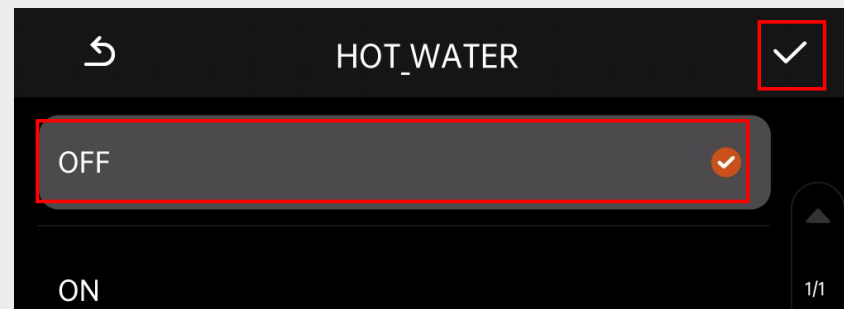
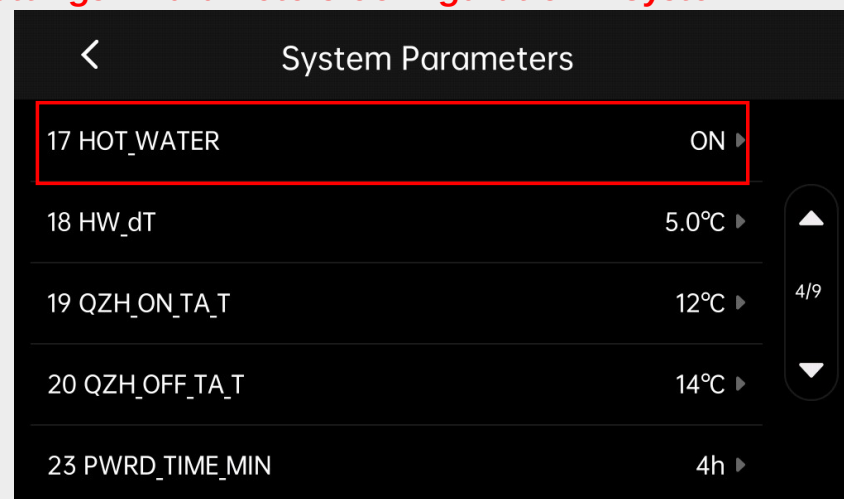
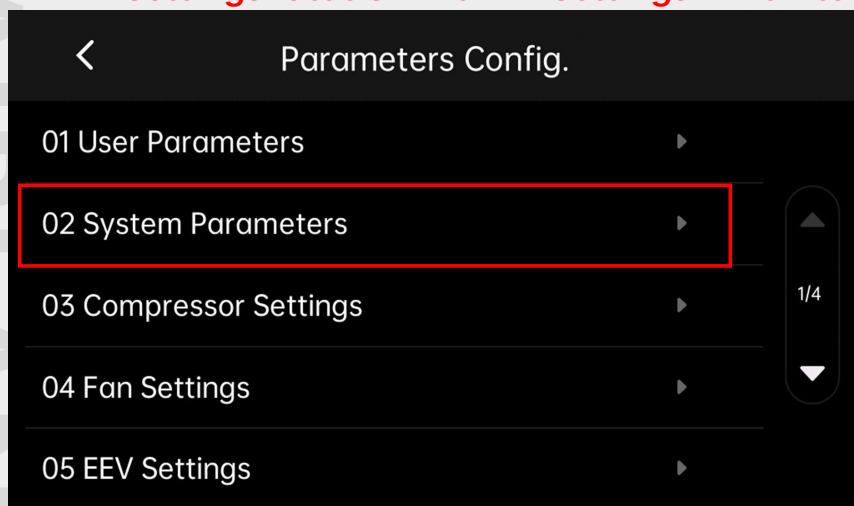
S3V3: Mixing three-way valve



Application 2: Dual-zone control based on water temperature and room temperature Wired controller Settings

① If the THWt (domestic water tank temperature sensor) is not connected, please disable the hot water function; otherwise, an E12 error will be reported.

Settings location: Admin Settings – Maintenance Settings – Parameters Configuration – System





Application 2: Dual-zone control based on water temperature and room temperature Wired controller Settings

② If a buffer water tank is installed, you must set [TEMP_CTRL_OBJ] to [TACT.WATER] in the System Parameters section, and enable TACT1_SENSOR in [Input & Sensors].

< System Parameters

07 PWR_DOWN_MEM	ON ▶
08 PWR_ON_RUN	OFF ▶
09 PUMP_RUN_MODE	Interval ▶
10 TEMP_CTRL_OBJ	OUTLET.WATER ▶
11 CL_TEMP_CORR	0.0°C ▶

< Input & Sensors

29 J5 range min.	0.0bar ▶
30 J5 range max.	35.0bar ▶
31 J6 range min.	0.0bar ▶
32 J6 range max.	20.0bar ▶
33 TACT1_SENSOR	OFF ▶

↶ TEMP_CTRL_OBJ ✓

INLET.WATER
OUTLET.WATER
TACT.WATER ✓

↶ TACT1_SENSOR ✓

OFF
ON ✓



Application 2: Dual-zone control based on water temperature and room temperature

Wired controller Settings

- ③ Set [ZONE_CTRL] in System Parameters to [2 ZONE.TW&TA].

< System Parameters

35 ZONE_CTRL	2 ZONE.TW&TR ▶
36 PUMPd_MODE	OFF ▶
37 TBH_RELAY_dT	0°C ▶
38 BOTTOM HEATER_TYPE	Defrost bottom ▶
39 BOTTOM HEATER_ON_TA	7°C ▶



↶ PANEL_CTRL ✓

2 ZONE.TW&TA	✓
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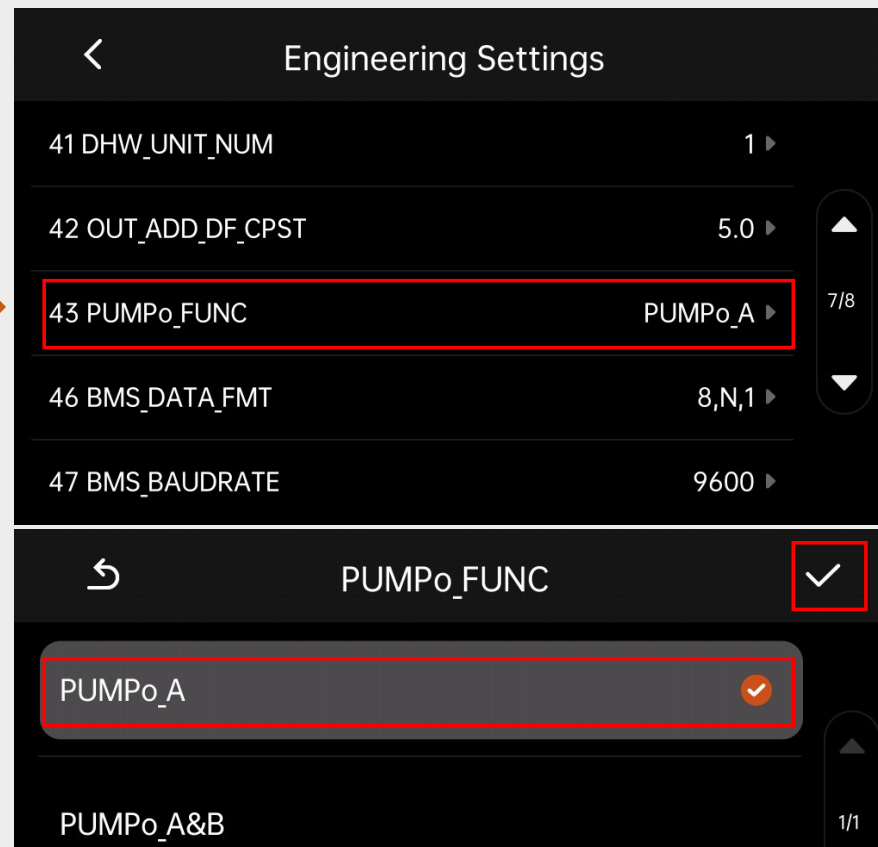
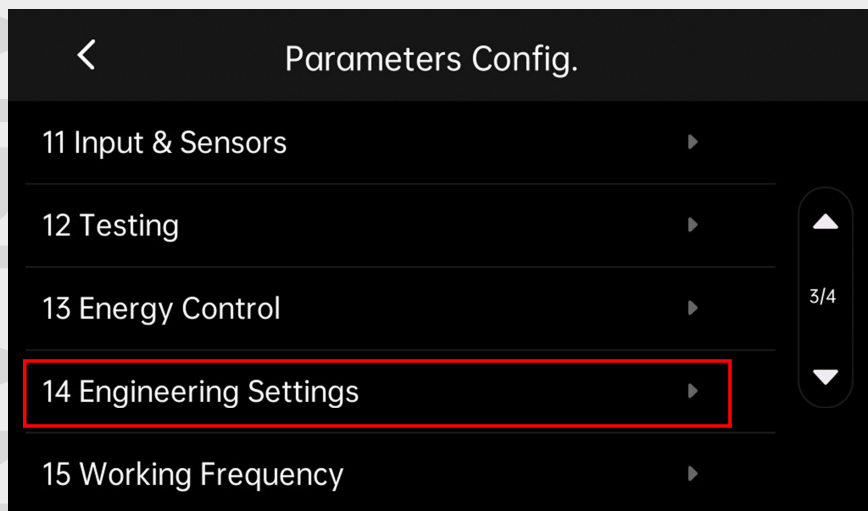


Application 2: Dual-zone control based on water temperature and room temperature

Wired controller Settings

④ If PUMPo is used for the water circuit in Region A, the PUMPo function [PUMPo_FUNC] must be set to PUMPo_A.

Settings location: Parameters config – Engineering settings



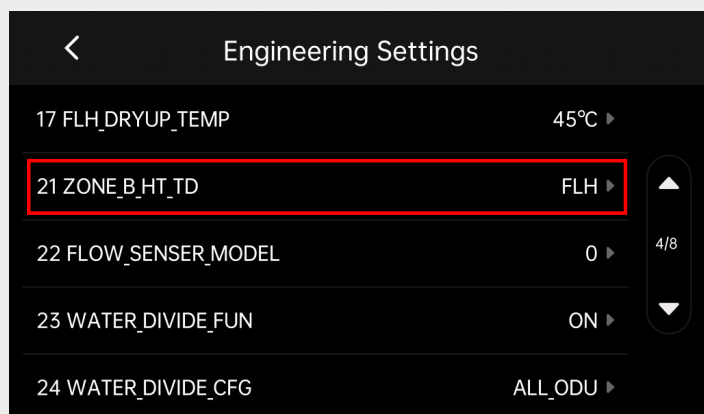


Application 2: Dual-zone control based on water temperature and room temperature Wired controller Settings

⑤ If ZONE B is for underfloor heating, the ZONE_B_HT_TD setting in the Engineering Settings must be set to [FLH].

Settings location: Parameters config – Engineering settings

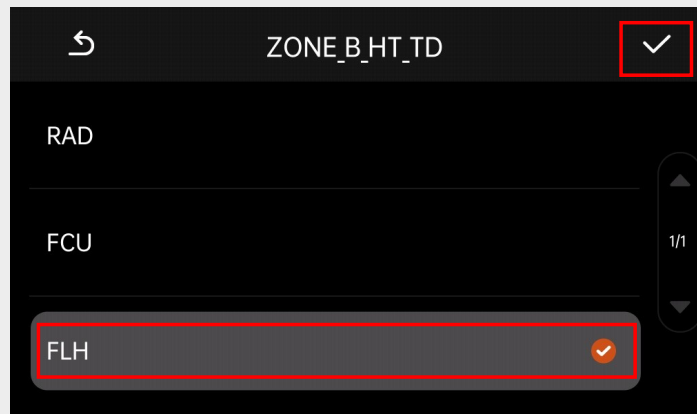
Enable the underfloor heating inlet water temperature sensor TFL in under [Input & Sensors] as needed.



Engineering Settings

17 FLH_DRYUP_TEMP	45°C ▶
21 ZONE_B_HT_TD	FLH ▶
22 FLOW_SENSEN_MODEL	0 ▶
23 WATER_DIVIDE_FUN	ON ▶
24 WATER_DIVIDE_CFG	ALL_ODU ▶

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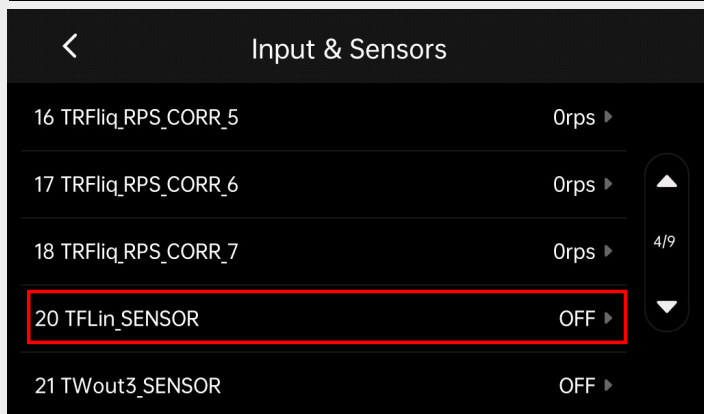
ZONE_B_HT_TD

RAD

FCU

FLH

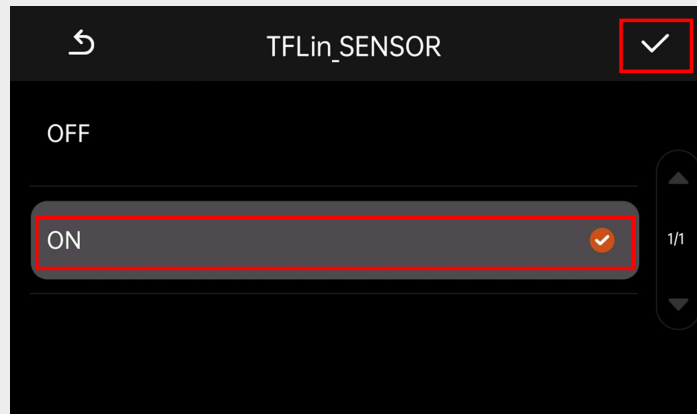
1/1



Input & Sensors

16 TRFliq_RPS_CORR_5	0rps ▶
17 TRFliq_RPS_CORR_6	0rps ▶
18 TRFliq_RPS_CORR_7	0rps ▶
20 TFLin_SENSOR	OFF ▶
21 TWout3_SENSOR	OFF ▶

4/9



TFLin_SENSOR

OFF

ON

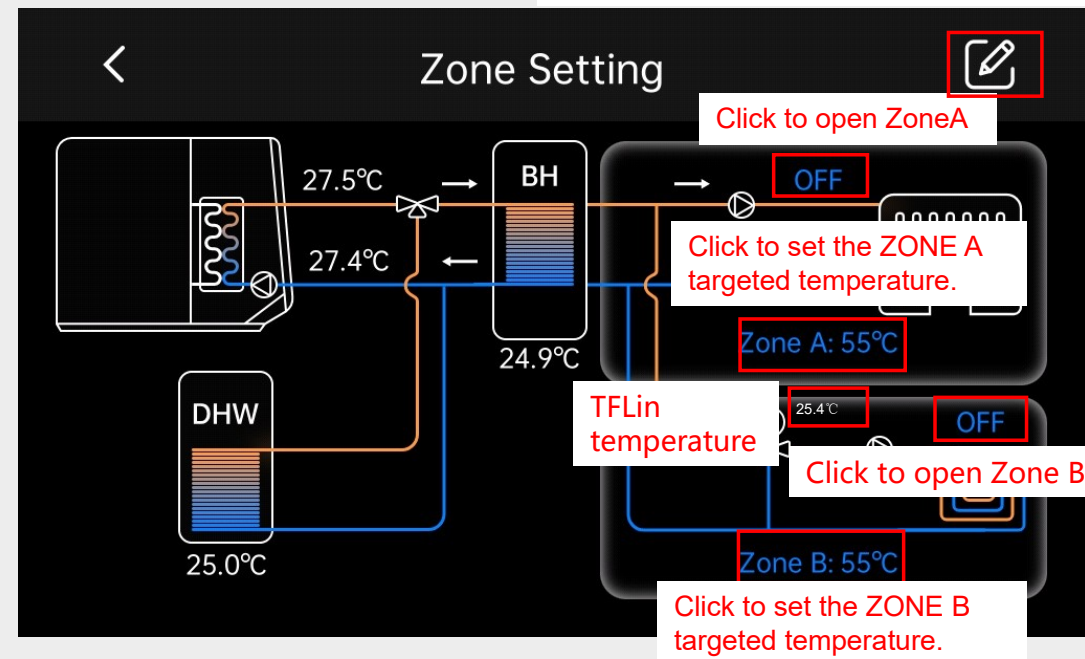
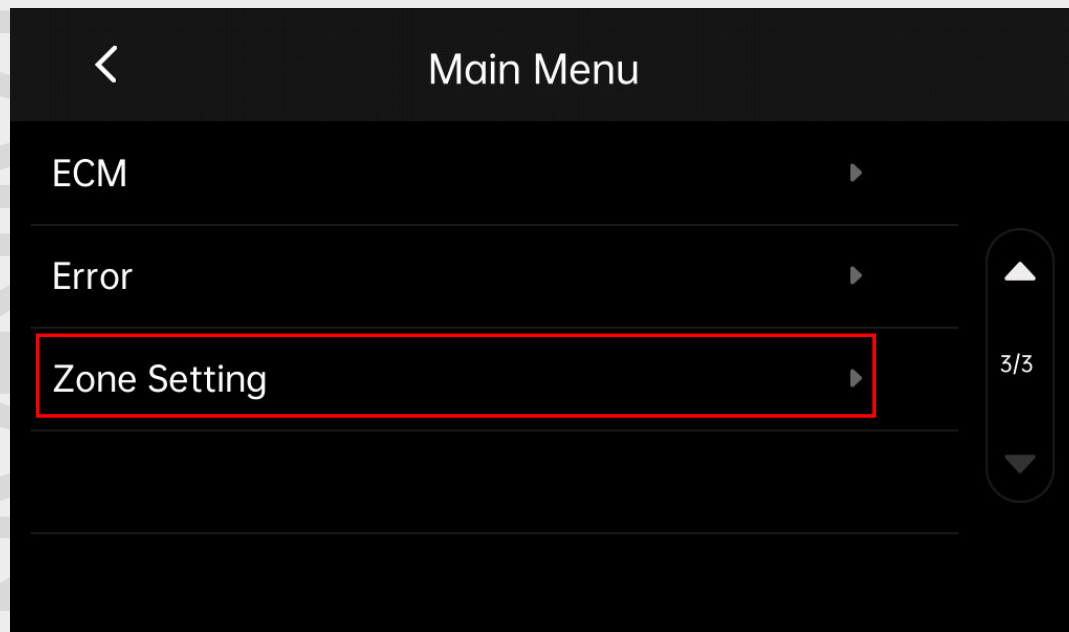
1/1



2-zone control application

Go to Main Menu > Zone Settings.

Click to access parameters for dual-region applications





2-zone control application

Go to Main Menu> Zone Settings.

Click Settings> Run Mode

Click the Settings
section> Target Water
Temperature for Zone A

Click the Settings section>
Target Room Temperature

User Parameters	
CTRL_MODE	Heat ▶
COOL_TEMP_SET	7°C ▶
HEAT_TEMP_SET	55°C ▶
COOL_ROOM_TEMP_SET	26°C ▶
HEAT_ROOM_TEMP_SET	20°C ▶



2-zone control application

Go to Main Menu> Zone Settings.

Click the Settings section> Target Water Temperature

Click the Settings section> Temperature Curve

Click the Settings section> Temperature Curve

<

User Parameters

HEAT_TEMP_SET_B	55°C ▶	▲ 2/4 ▼
HEAT_ROOM_TEMP_SET_B	26°C ▶	
Zone A Cool Curve	OFF ▶	
Zone A Heat Curve	OFF ▶	
Zone B Cool Curve	OFF ▶	



2-zone control application

Go to Main Menu> Zone Settings.

Click the Settings
section> Temperature
Curve

Curve 9 (Custom Curve)
Related Parameters

< User Parameters	
Zone B Heat Curve	OFF ▶
C#9_TA_C1	35°C ▶
C#9_TA_C2	25°C ▶
C#9_TWout2_C1	10°C ▶
C#9_TWout2_C2	16°C ▶

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Thanks

