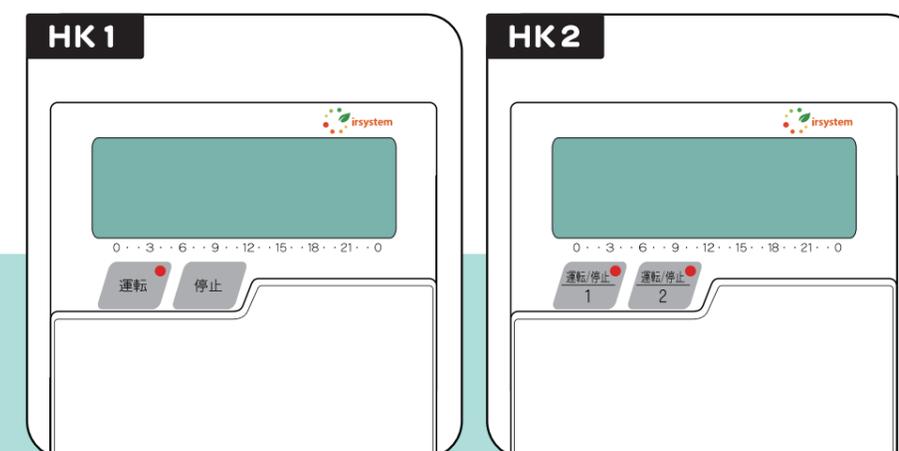


Far-infrared  
Electric Floor Heating System

# PRIMAVERA NEO

## OPERATION MANUAL

irsystem



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# Table of contents

## Thank you for purchasing PRIMAVERA.

All of the Safety Instructions contained in this Manual must be read carefully and must be fully understood before you attempt to use your floor heating system, in order to avoid potential hazards that could cause bodily injury, property damage, or damage the floor heating system. Store this manual near a controller, for convenient future reference.

Precaution	2
Preparation (1) (Names of parts and their Functions) (LCD Panel)	3
Preparation (2) (Setting current time)	5
System Operation (Performing of “Normal operating” ) (Changing temperature level) (Child-Lock function) (Automatic Cut-Off function)	6
Advanced Operations 1 ( “On-Off” Time Setting)	8
Advanced Operations 2 ( “Operating Term Setting” )	11
Advanced Operations 3 ( “Starting Time Setting” )	12
TROUBLE SHOOTING	13
FAQ	15
Specifications	17

◆ The Primavera’s specifications and designs are subject to change without notice.

◆ The material contained in this manual consists of information that is the property of IRSYSTEM Co., Ltd. and is intended solely for use by the purchasers of the equipment described in this manual. IRSYSTEM Co., Ltd. expressly prohibits the duplication of any portion of this manual or the use thereof for any other than the operation or maintenance of the equipment described in this manual without the express written permission of IRSYSTEM Co., Ltd.

# Precaution

**! Warning!!!** Follow these safety regulations below to prevent **serious injury or death.**

- ◆ **Do not disassemble, modify or repair PRIMAVERA.**  
It could cause fire, electric shock or mechanical troubles.
- ◆ **Do not spill any liquid on/near PRIMAVERA heating area or controllers.**  
It could cause fire, electric shock or mechanical troubles.
- ◆ **Do not damage PRIMAVERA heating area or controllers on any foreign sharp objects such as nails or cutter knives.**  
It could cause fire, electric shock or mechanical troubles.
- ◆ **Never leave any other strongly flammable objects such as spray cans or lighters on/near PRIMAVERA heating area.**  
It could cause fire or mechanical troubles.

**! Caution!!!** Follow these safety regulations below to prevent **serious injury, death and material damage.**

- ◆ **Avoid using PRIMAVERA under the certain conditions like a direct sunlight, a high temperature, high humidity, dust, inflammable gas, corrosive gas, strong vibration, shocking strike.**  
It could cause mechanical troubles or malfunction.
- ◆ **Never try to clean controller's surface with water, alcohol or any other chemicals.**  
It could cause fire or electric shock by short-circuit.

◎ **Avoid lying down onto the floor heating system directly for a long time without attention. It could cause a skin irritation, such as a skin burn. In particular, the special attention is required when the following people operate PRIMAVERA.**

- People who are not able to change their position by themselves on PRIMAVERA, or be impossible to control temperature level by own will; infants, babies, children, the disabled or the elderly.
- People who have delicate skin type.

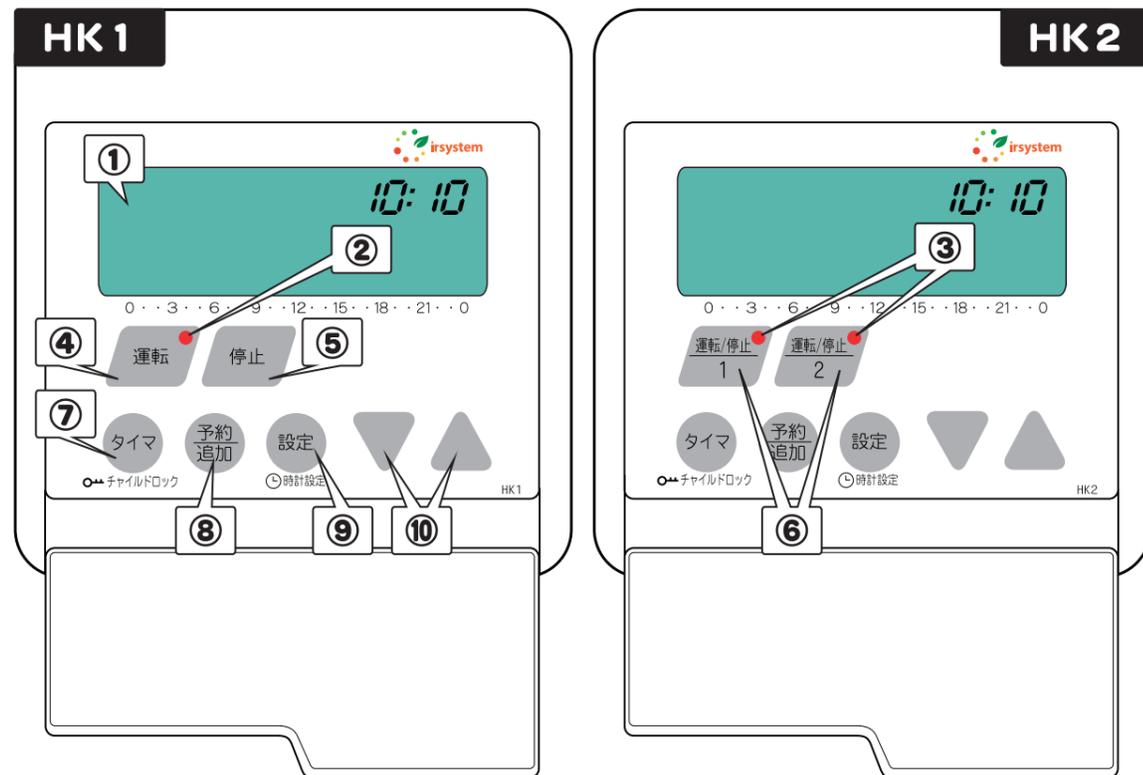
◎ **Be careful of the overheating.**

Do not place high insulating materials (thick carpet) or furniture (which has no legs) onto PRIMAVERA directly; otherwise it could happen troubles due to overheating between PRIMAVERA and high insulation materials. Placing furniture having with at least 5cm legs onto PRIMAVERA would be no problems.

Refer to FAQ section (P.15 – P.16) for preventing accident.

# Preparation(1)

## Names of parts and their Functions

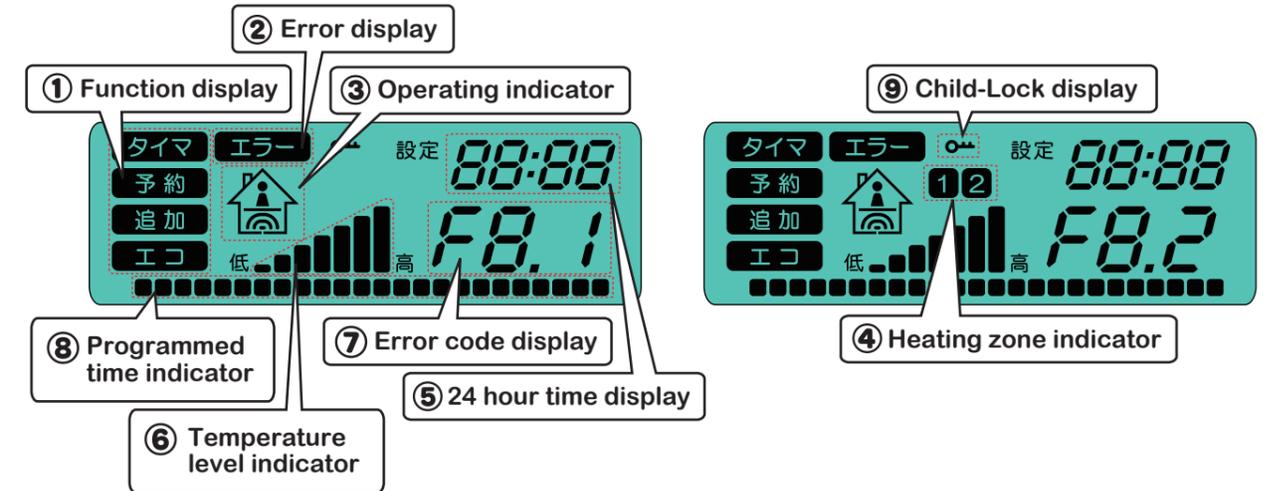


Items	Description										
① LCD PANEL	Displays current status of the various system features and functions.										
② On Lamp(HK1)	Displays the operating condition.										
③ On/Off Lamp(HK2)	Displays the each heating zone's operating condition.(zone 1, zone 2)										
	<table border="1"> <thead> <tr> <th>A lamp color</th> <th>Condition</th> </tr> </thead> <tbody> <tr> <td>● Light off</td> <td>Power Off</td> </tr> <tr> <td>● Light up - "Red"</td> <td>In Operating</td> </tr> <tr> <td>● Light up - "Green"</td> <td>Programmed condition.(not operated)</td> </tr> <tr> <td>⚡ Flashing</td> <td>Abnormal condition(refer to page.13)</td> </tr> </tbody> </table>	A lamp color	Condition	● Light off	Power Off	● Light up - "Red"	In Operating	● Light up - "Green"	Programmed condition.(not operated)	⚡ Flashing	Abnormal condition(refer to page.13)
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● Light off	Power Off										
● Light up - "Red"	In Operating										
● Light up - "Green"	Programmed condition.(not operated)										
⚡ Flashing	Abnormal condition(refer to page.13)										
④ "On" button(HK1)	Start operating										
⑤ "Off" button(HK1)	Stop operating										
⑥ "On/Off" button(HK2)	Controls operating of each heating zone.										
⑦ "Timer" button	Converts "Normal Operating" into "On-Off" Time Setting Controls "Child-Lock" function.										
⑧ "Reservation/Add" button	Controls "Operating term setting" function. Controls "Starting time setting" function.										
⑨ "Setup" button	Executes various setting. Saves programmed condition. Sets "Current time"										
⑩ ▽△ button	Adjusts each condition such as time or temperature level.										

## LCD panel

### HK 1

### HK 2

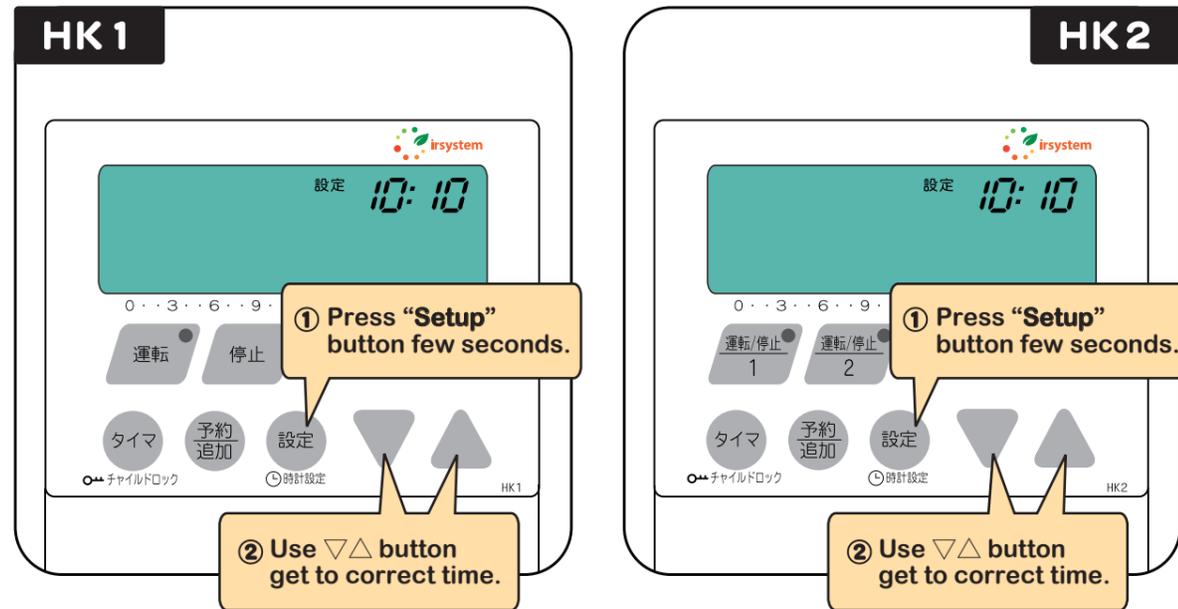


Display contents	Description								
① Function display	Displays the current operating status								
	<table border="1"> <tbody> <tr> <td>タイマ</td> <td>Displays "On-Off" Time Setting</td> </tr> <tr> <td>予約</td> <td>Displays "Operating Term Setting"</td> </tr> <tr> <td>追加</td> <td>Displays "Starting Time Setting"</td> </tr> <tr> <td>エコ</td> <td>Displays "ECO mode" (It displays while it is operating on low temperature levels (1 or 2 stage).)</td> </tr> </tbody> </table>	タイマ	Displays "On-Off" Time Setting	予約	Displays "Operating Term Setting"	追加	Displays "Starting Time Setting"	エコ	Displays "ECO mode" (It displays while it is operating on low temperature levels (1 or 2 stage).)
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予約	Displays "Operating Term Setting"								
追加	Displays "Starting Time Setting"								
エコ	Displays "ECO mode" (It displays while it is operating on low temperature levels (1 or 2 stage).)								
② Error display	Displays when abnormal operating occurs.								
③ Operating indicator	<table border="1"> <thead> <tr> <th>Operating - ON</th> <th>Operating - OFF</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Operating - ON	Operating - OFF						
Operating - ON	Operating - OFF								
④ Heating zone indicator (HK2)	Displays heating zone which is currently running.								
⑤ 24 hour time display	It usually displays the current time. (While Operating Term Setting) - Display the remained operating term. (While Starting Time Setting) - Displays the scheduled starting time when the user press ▲.								
⑥ Temperature level indicator	Displays temperature levels from 1 to 7 stages.								
⑦ Error code display	Displays when the error occurs. (Refer to page 13.)								
⑧ Programmed time indicator	Displays the programmed time of "On-Off Operating Setting"								
⑨ Child-Lock display	Displays when Child-Lock function is on.								

# Preparation (2)

- Check the circuit breaker turns on before using the system.  
Turn the circuit breaker off, if the system would not be used for a long time.

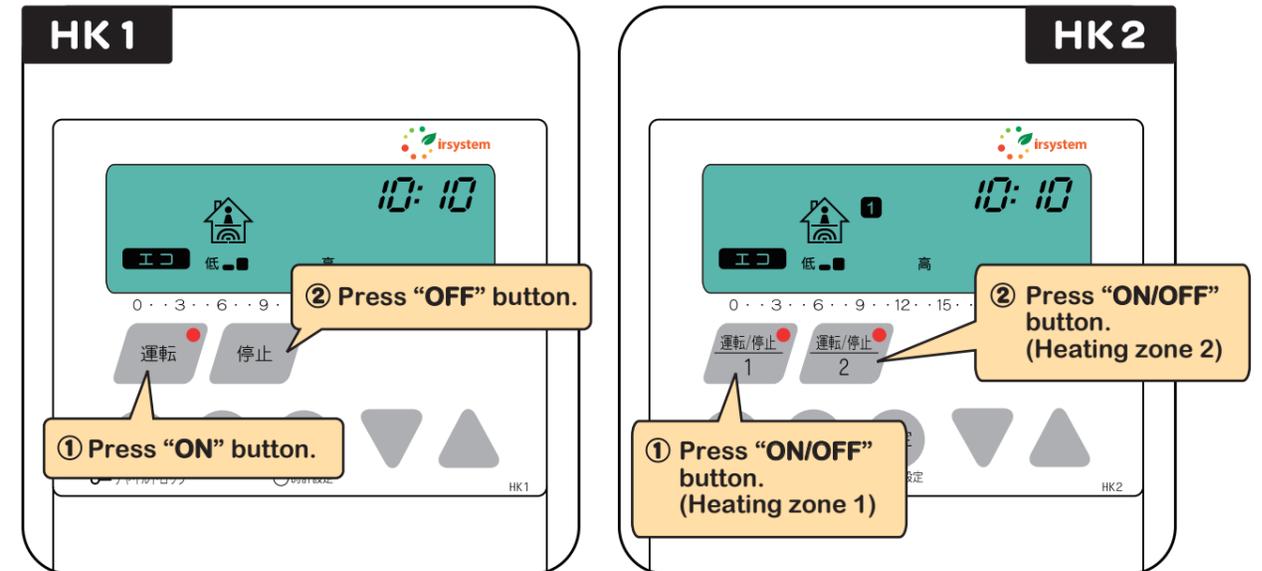
## Setting current time



- Press **設定** few seconds, while it is not operated.
- The number (hour-minutes) displays flashing.
- Using **▼**, **▲**, adjust the current time. (For fast change hold the **▼** or **▲** button down.)
- Setting correct time would be saved, if the user press one more time or keep it without doing anything for 60 seconds.

# System Operation

## Performing of "Normal Operating"



### <HK1 controller setting>

- Not operated ⇔ "Normal Operating"  
Press **運転**, **停止** in order to switch the power on to off.

### <HK2 controller setting>

- Not operated ⇔ "Normal Operating"  
(Heating zone 1) Press **運転/停止 1** in order to switch the power on to off.  
(Heating zone 2) Press **運転/停止 2** in order to switch the power on to off.

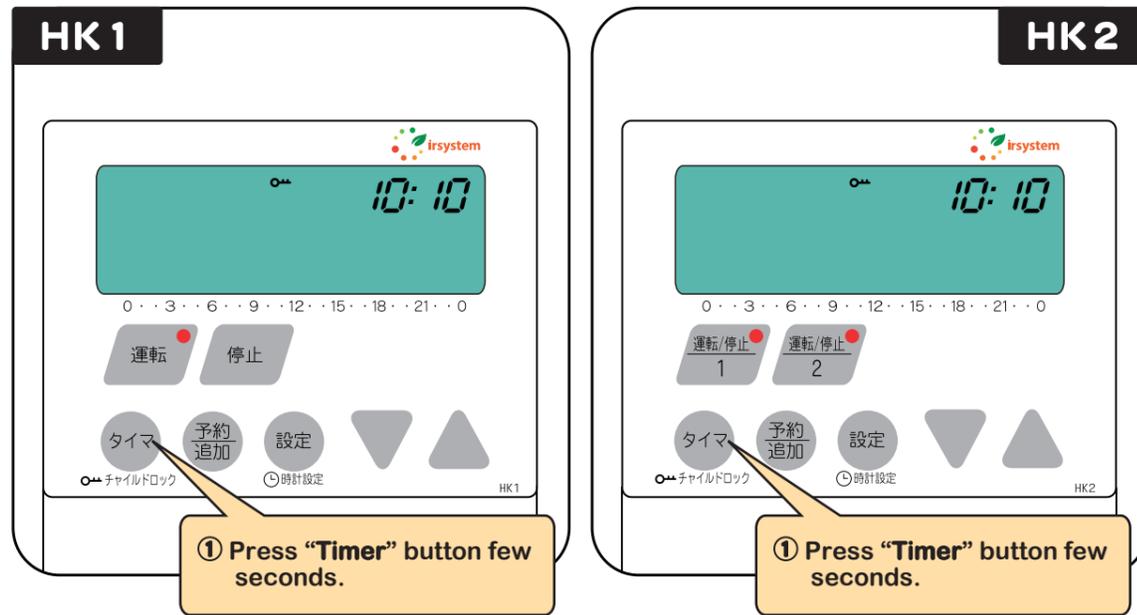
## Changing temperature level

- Press **設定** while the system is running.
- Using **▼**, **▲** adjust the comfortable temperature level.  
(If it is HK2 controller, the temperature setting of each zone will be executed step by step. Repeat this procedure until temperature level of heating zone 2 is set.)
- Setting temperature level would be saved, if the user press **設定** few seconds or without doing anything for 10 seconds.

### "ECO mode" (Energy saving operating)

When the temperature level is set to 1 or 2 stage, **エコ** will be displayed. ECO mode operating is how to use more environmentally friendly since it is less usage of electricity.

## Child-Lock function



### ● Not operated ⇔ Child-Lock function "On"

Press **タイマ** few seconds, when the system is not running.

All buttons will not work except **▼**, **▲** while Child-Lock function is running.

If the user wants to change setting condition, even though it is on Child-Lock function, press buttons for few seconds.

## Automatic Cut-Off function

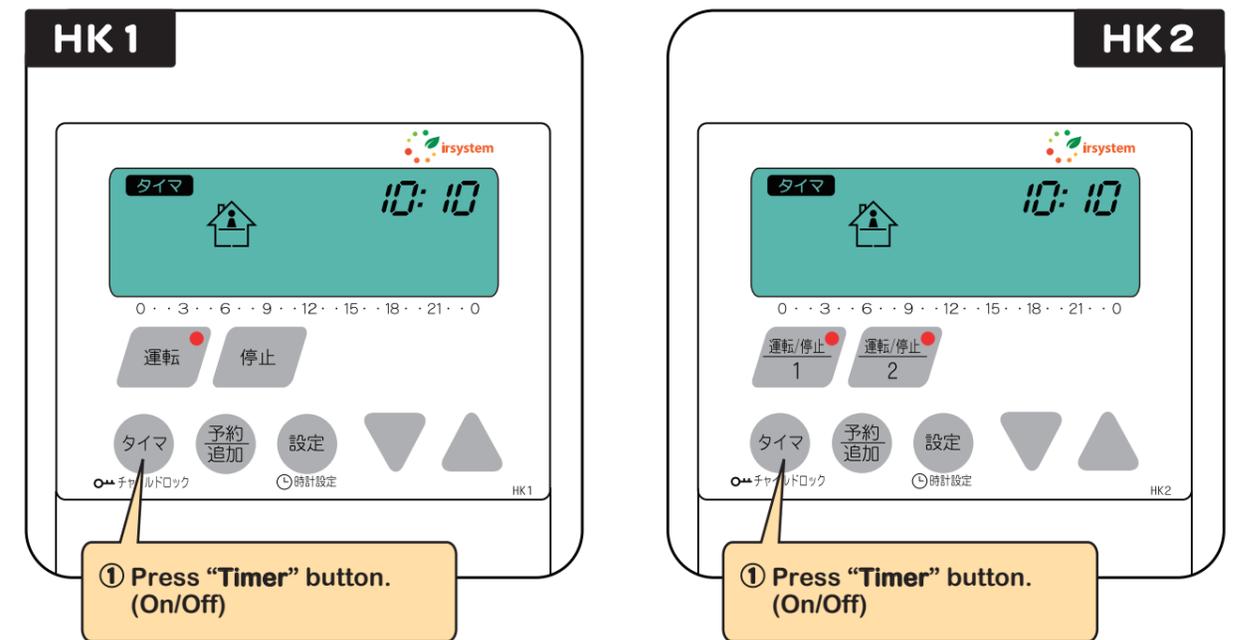
The system operating will stop automatically after 8 hours working, therefore, the user cannot set "On-Off" Time Setting over 8 hours.

# Advanced Operation 1

## "On-Off" Time Setting

Primavera is possible to set two operating time programs for each day. During "ON-OFF" Time Setting is running, the system will maintain the floor at the comfortable temperature. The user should remember that only two programs are active for each day. It will run everyday by the same time unless the user changes programs.

## Performing of "On/Off" Time Setting



### <HK1 controller setting>

#### ● Normal Operating ⇔ "On-Off" Time Setting

Press **タイマ**, while the system is running.

### <HK2 controller setting>

#### ● Normal Operating ⇔ "On-Off" Time Setting

Press **タイマ**, while the system is running.

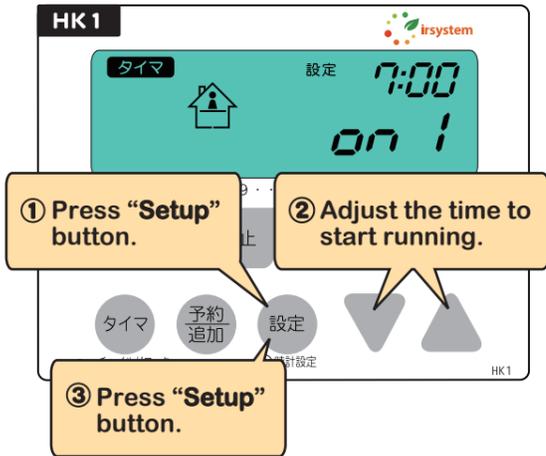
### Caution

The user cannot set "On-Off" Time Setting over 8 hours, because running time is limited 8 hours by "Automatic Cut-Off function".

Refer to demonstrations on next page. →

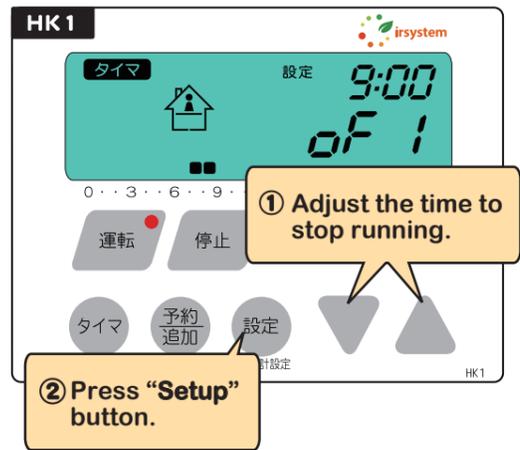
[ Demonstration ] :For example, set “On-Off” time — 7:00~9:00 and 18:00~23:00  
program(1) program(2)

### Setting procedure – On-time of Program (1)



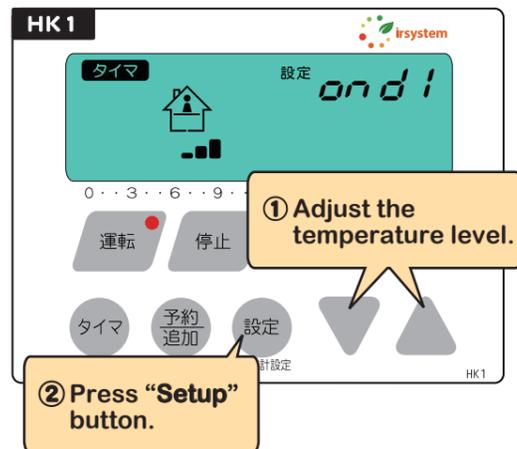
- Press **設定** while “On-Off” Time Setting is running.
- The number (On-time) displays flashing. Using **▽**, **△**, adjust time at 7:00.
- Press **設定**. (Fix On-time setting. (on 1))

### Setting procedure – Off-time of Program (1)



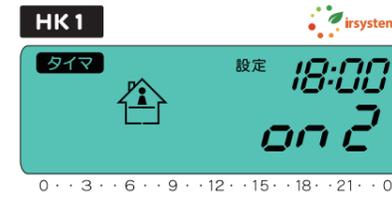
- The number (Off-time) displays flashing. Using **▽**, **△**, adjust time at 9:00.
- Press **設定**. (Fix Off-time setting. (oF 1))

### Setting procedure – temperature level of Program (1)



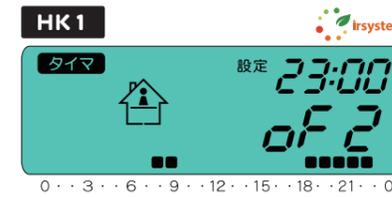
- Using **▽**, **△**, adjust the comfortable temperature level,
- Press **設定**. (Fix the temperature level setting (ond 1))

### Setting procedure – On-time of Program (2)



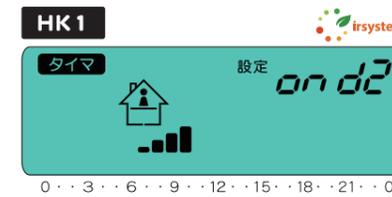
- Press **設定** while “On-Off” Time Setting is running.
- The number (On-time) displays flashing. Using **▽**, **△**, adjust time at 18:00.
- Press **設定**. (Fix On-time setting. (on 2))

### Setting procedure – Off-time of Program (2)

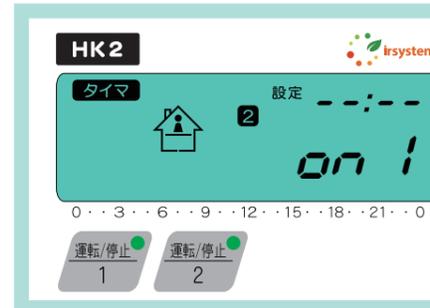


- The number (Off-time) displays flashing. Using **▽**, **△**, adjust time at 23:00.
- Press **設定**. (Fix Off-time setting. (oF 2))

### Setting procedure – temperature level of Program (2)

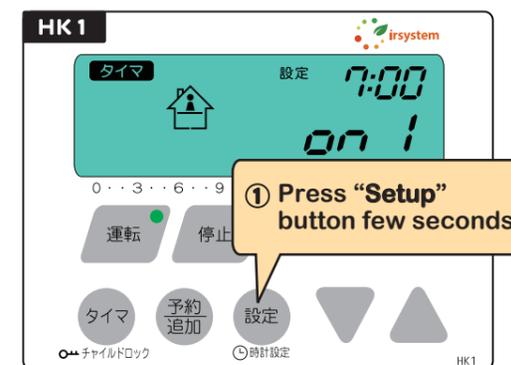


- <HK1>
- Using **▽**, **△**, adjust the comfortable temperature level,
- Press **設定**. (Fix the temperature level setting (ond 2))



- <HK2>
- “On-Off” Time Setting of “heating zone 2” starts setting continuously, after completed setting of “heating zone 1.” (Repeat the same procedure.)

### Saving programs



- Return to the status of “On-time” of program(1).
- “On-Off” Time Setting would be saved if the user press **設定** few seconds or keep it without doing anything for 10 seconds.

# Advanced Operation 2

## “Operating Term Setting”

This function allows to set the **specific heating term** (1 minute ~ 120 minutes) while the system is running on **Normal Operating**.

After driving up setting operating term in advance, the system shut down automatically.

※ The user can only set up operating term while the system is on **Normal operating** – the lamp is lighting on “red (●)”. It couldn't be set when the lamp is lighting on “green (●)” or the lamp is “off (●)” condition.

### Performing of “Operating Term Setting”



- Normal Operating ⇔ “Operating Term Setting”
- Press while the system is running on normal operating.

[ Demonstration ] :For example, set “Operating Term Setting” — 45minutes.

### Setting procedure – Programming “Operating Term Setting”



- Press , while “Operating Term Setting” is running.
- The number (Operating term) displays flashing.
- Using , , adjust the number to 45 minutes.
- Press .

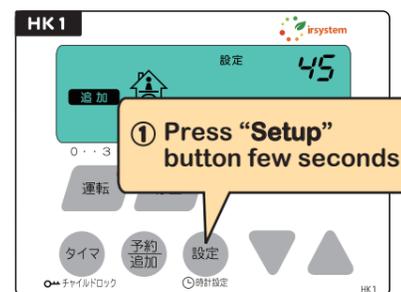
### Setting procedure – Programming temperature level



- <HK1>
- Using , , adjust the comfortable temperature level.
- Press .

<HK2>  
“Operating Term Setting” of “heating zone 2” starts setting continuously after completed setting of “heating zone 1” . (Repeat the same procedure.)

### Saving programs



- Return to the status of the “Programming Operating Term”
- “Operating Term Setting” would be saved if the user press few seconds or keep it without doing anything for 10 seconds.
- ◎ **Operating term is limited on 120 minutes.**
- ◎ **This function cannot be used in while “ON-OFF” Time Setting is running.**

# Advanced Operation 3

## “Starting Time Setting”

This function allows reserving the “Starting Time” , while the system is not operated.

※ The user can only set up “Starting Time” while the system is not working – The lamp is on “off (●)” condition. It couldn't be set when the lamp is lighting on “green (●)” or the lamp is lighting on “red (●)” .

### Performing of Programming “Starting Time Setting”



- Not operated ⇔ “Starting Time Setting”
- Press while the system is not operated.

[ Demonstration ] :For example, reserve “Starting Time Setting” — at 7:00

### Setting procedure – Programming “Starting Time”



- Press . while “Starting Time Setting” is running.
- The number (Starting Time) displays flashing.
- Using , , adjust time at 7:00.
- Press .

### Setting procedure – Programming temperature level



- <HK1>
- Using , , adjust the comfortable temperature level.
- Press .

<HK2>  
“Starting Time Setting” of “heating zone 2” starts setting continuously after completed setting of “heating zone 1” . (Repeat the same procedure.)

### Saving programs



- Return to the status of the programming “Starting Time Setting”
- “Starting Time Setting” would be saved if the user press few seconds or keep it without doing anything for 10 seconds.
- Programmed “Starting-Time” can be checked by pressing .

# TROUBLE SHOOTING

Symptoms	Solutions
The system does not start.	<b>Isn't the circuit breaker off?</b> Make sure the circuit breaker is ON, before it used.
The buttons are suddenly frozen.	<b>Isn't the Child-Lock function effective?</b> If the  icon is displayed, Child-Lock function is in effect. Make sure turn Child-Lock function off before it used.
The floor is too hot.	<b>Is the temperature setting appropriate?</b> Controller is consist of temperature level from 1 to 7 stage. It may be too hot, while level setting is on higher stage. Reduce temperature level to lower stage.
It is not warm enough.	<b>Isn't the room temperature too low?</b> The user might not feel warm enough, if the room temperature is too low. Raise up room temperature until approximately 20°C using air conditioner before running.
The system turns off by itself.	<b>Is "Operating Term Setting" running?</b> "Operating Term Setting" takes precedence over "Normal operating" . Cancel "Operating term Setting" .  <b>Wasn't it working over 8 hours continuously?</b> The system shuts down automatically after 8 hours running because it is limited by "Automatic Cut-Off function" , and LCD panel is displayed OFF mark at that time.
"On-Off" time setting could not be programmed.	<b>Didn't you attempt to set "On-Off" time more than 8 hours?</b> Operating time is limited until 8 hours at once. Set operating time within 8 hours.

When symptoms are not improved by the above methods, turn off. The circuit breaker immediately and please contact to IRSYSTEM Co., Ltd.

Error code	Countermeasure
"F1.□" (□ signifies the heating zone number)	The controller has a mechanical trouble. The user should replace controller without delay. Turn the circuit breaker off immediately and please contact to IRSYSTEM Co., Ltd.
"F2, F3, F4, F5.□" (□ signifies the heating zone number)	It could be a mechanical trouble. After turning the circuit breaker off, turn it on again. If symptoms are not improved, turn the circuit breaker off immediately and please contact to IRSYSTEM Co., Ltd.
"F6"	The controller has a mechanical trouble. It is recommended replace a controller for comfort use. Please contact to IRSYSTEM Co., Ltd.

## Others

**In such following symptoms occur, turn the circuit breaker off immediately and please contact to IRSYSTEM Co., Ltd.**

- Smoke, abnormal noise, irregular odor from the controller.
- Partly deformation, discoloration or abnormal heat of the controller.
- Spilled much water onto floor.
- Other abnormalities.

## Q: Is it safe to put the carpet on the floor heating system?

A: It could cause an accident because of the overheating between the carpet and the floor heating system.

**Avoid placing the carpet onto the floor heating system.**

## Q: Is it safe to put the furniture (such as closet or the piano) onto the floor heating system?

A: If the furniture doesn't have legs, it could cause an accident because of the overheating between surface of furniture and floor heating system.

**Make sure put furniture with at least 5cm legs.**

## Q: Is it safe to sleep onto a surface of the floor heating system directly?

A: Under certain operating conditions (such as sleeping with highly lagging clothes.), it could cause skin irritation.

**Avoid touching between PRIMAVERA and your skin for a long time without attention.**

## Q: It sounds some strange noise such as "tick-tock" in a controller. Is it a controller malfunction?

A: That sounds are happened by conversion of each setting. It is a very normal driving condition.

## Q: Should it be program set again after blackout?

A: If the blackout were temporary, re-setting is not necessary. However, re-setup might be needed when it is long term blackout.

## Q: Does PRIMAVERA emit electromagnetic waves?

A: PRIMAVERA emits out very tiny amount of electromagnetic waves. But it is much less than other electric devices like a television or a microwaves oven. It means there is no harm of human body. In addition, PRIMAVERA has discharged far-infrared rays which is very valid for human body.

## Q: Is it safe to drop water onto the floor heating system?

A: PRIMAVERA is made of waterproof structure basically. There is no problem even if it drops small amount of water. However, if it is spilled large amount of water onto the floor heating and neglect it for a long time, it could cause an accident, possibly resulting in mechanical troubles. Do not spill any liquid onto Primavera or Controllers. If it happens, turn off the circuit breaker and please contact to IRSYSTEM Co., Ltd.

## Q: Is there any tips for reducing the electric charges?

A: If temperature level is set to 1 or 2 stage (ECO mode), it could be reduced the electric charge since it is less usage of electricity. The user might not be able to feel warm enough if it runs ECO mode from the first time. But it will become warm enough due to increase in the temperature, after it is operated continuously.

## Q: Is it possible to use Primavera as a main heating system?

A: If your house has been completely furnished with a perfect conditions that we offer (perfect air tightness conditions and perfect heat insulation property) it could not need other heating devices. However, **we recommend raising your room temperature until approximately 20 °C using air conditioner before running floor heating system** because floor heating system does not raise room temperature in air directly. And that will be also one good option to save electric charges.

## Q: Is maintenance of floor heating system required?

A: Maintenance is not required basically.

In order to last a good condition, It is recommended turning the circuit breaker off if the floor heating system is not used for a long time.

## Specifications of the controller

Model Number	HK1	HK2
Manner of control	Controls electric current amount.	
Display	LCD Panel	
Control type	Control one heating zone	Control two heating zones
Operating Voltage	AC 100V/200V 50/60hz	
Rating	AC 200V 12A(load resistance) × 1	AC 200V 12A(load resistance) × 2
Capability	Less than 4W	
Temperature control range	Control of the 7 stages	
Current time display	Displays at 24 hour formation.	
Advanced functions	“ON-OFF” time setting two times for a day. Reservation “Operating term” (1 to 120 min.) “Starting Time” setting Function of protecting overuse	
Dimensions / Weights	W116mm × H120mm × D50.4mm / 270g	
Installation standard	A Switch box of JIS2 standard.All opening of installation position, Vertical installation.	
Terminals	Non screw terminal board	
Installation circumstance	-10~40°C, 45~85%RH (non condensation only)	
Protection functions	Function of protecting overuse. Prediction of the expected life span of controller. Sensor of checking internal abnormal temperature etc.	
Others	Conditions after blackout : Power Off	

※All the specifications above are represented based on testing standards of IRSYSTEM Co., Ltd.