

Operating Manual



FOX-2P1

FOX-2P2

1 Caution

※ Safety and Hazard Instructions

⚠ Safety

Pls use this item after installing the duplex safety device in which is applied at dangerous factors such as serious human injury or serious damages of property & important machine because this item is not designed as safety device

⚠ Safety Instruction and Hazard Warnings

- Please read the operating manual throughly before putting the device into operation
- We will not assume any responsibility for damage to assets or persons caused by improper handling or failure to observe the safety instructions or hazard warnings
- For safety and licensing reasons, unauthorized conversion and/or modification of the device is not permitted.
- Do not exceed the maximum permissible current – in case of higher loads, use a contactor of adequate power. Make sure that the supplied voltage matches the values specified for the instrument.
- The device must be adequately protected from water and dust as per the application and must be accessible via the use of appropriate tools
- The device must not be exposed to extreme temperature, sunlight, strong vibrations or high levels of humidity.
- Operation or installation is not permitted under unfavorable ambient conditions such as wetness or excessive induction loads or solenoid and dust, combustible gases, vapors or solvents, especially high-frequency noise
- Avoid operation or installation close to high-frequency fields such as welding devices, sewing machines, wireless transmitter, radio systems, SCR controller, etc
- Do not install the sensor cable nearby signal cable, power cable, load cable,
- Please use the shield cable when the sensor cable's lengthen, however do not make it too much longer
- Please use the sensor cable without any cutting or flaw, blemish.
- The device is not a toy and should be kept away from children
- Installation work must only be carried out by suitably qualified personnel who are familiar with the hazards involved and with the relevant regulations.
- You shouldn't tinker with anything or the product may not be opened or disassembled unless you know what you're doing.
- Please ask us about this questioning

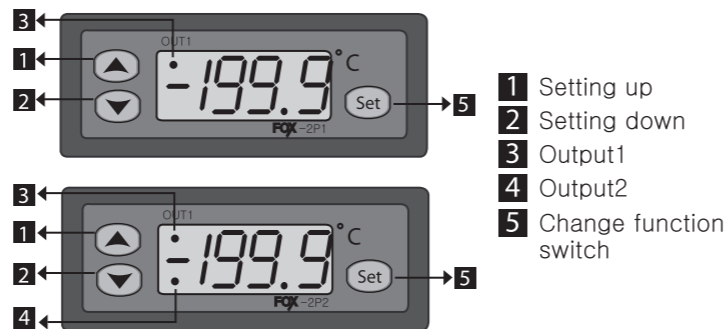
⚠ Danger

■ Attention! Never work on electrical connections when the machine is switched on

2 Composition

Model	Sensor	Temp.range	Size(mm)	Output	Function
FOX-2P1	PT100Ω	-199.9℃ ~ +400℃	77(W)x35(H)	100~240VAC 50/60Hz	Temp. control(1R)
FOX-2P2	PT100Ω	-199.9℃ ~ +400℃	77(W)x35(H)	100~240VAC 50/60Hz	Temp.(1R) def./alarm(2R)
FOX-2P1-D	PT100Ω	-199.9℃ ~ +400℃	77(W)x35(H)	AC:17~28V DC:12~35V	Temp. control(1R)
FOX-2P2-D	PT100Ω	-199.9℃ ~ +400℃	77(W)x35(H)	AC:17~28V DC:12~35V	Temp.(1R) def./alarm(2R)

3 Part name



Setting temperature & programs

• setting temperature

The present temperature shall be displayed after turning on of the power supply.

If **Set** key is pressed softly, **SET** letter will be showed and then, if **Set** key is pressed again, setting temperature will be flicked.

Press **▲▼** key to change the set values

If **Set** key is pressed again, **o-L** letter shall be showed and the setting temperature value shall be saved and the present temperature shall be displayed.

• Setting programs

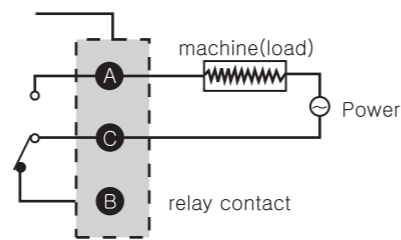
If **Set** key is pressed for more than 5seconds, the program mode will be proceeded as following sequences : HSP->LSP->TYP->DLT->DIF->COR->,,

The setting value of each mode should be changed by pressing **▲▼** key and then press **Set** key to move to next mode

※ The set or programming mode is terminated, if you press the **Set** key for more than 2 second,

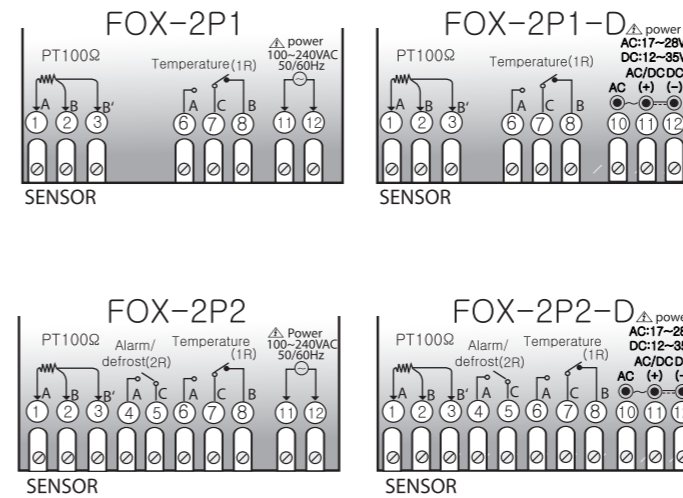
parameters(set values) are saved after showing **o-L** letter or return to the present temperature automatically after 10seconds

■ Relay junction



※ Relay contact capacity – less than 250VAC 2A

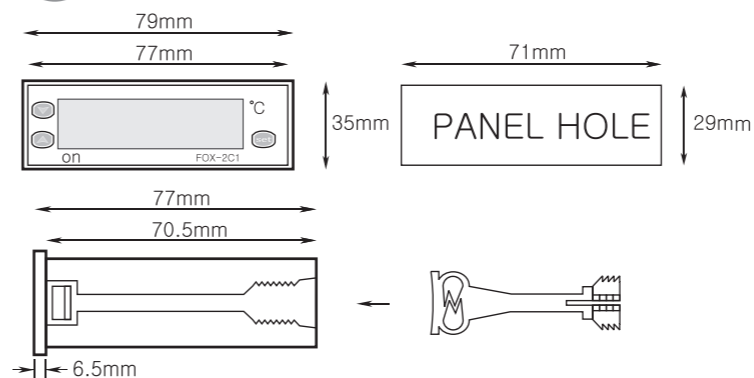
4 Connection



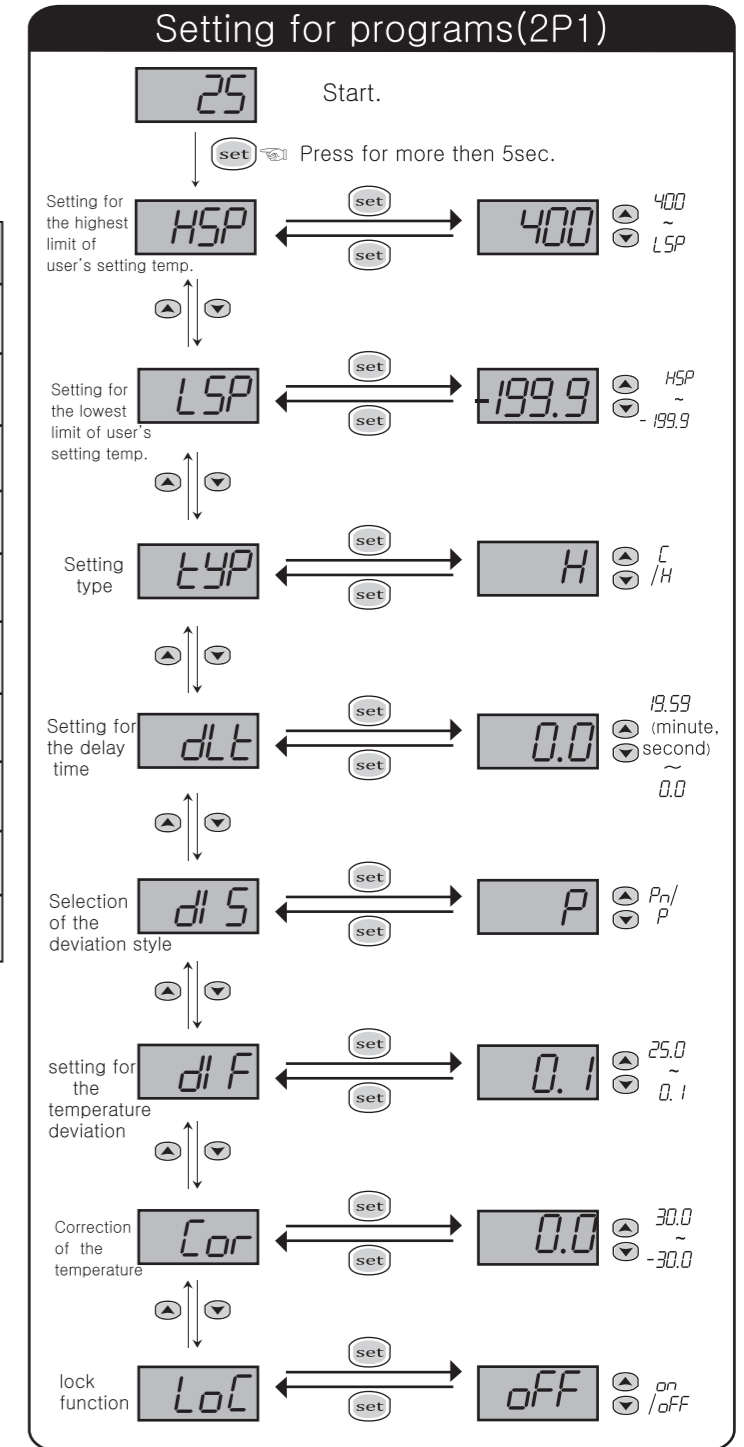
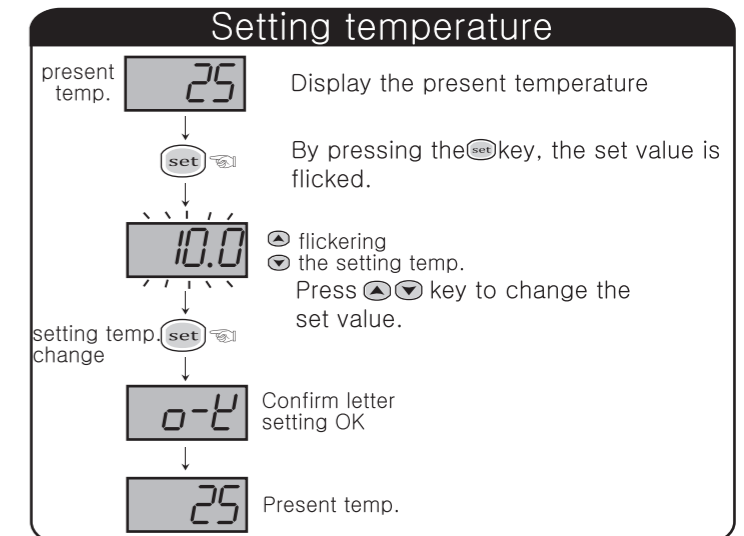
5 Temp.range&set value when deliver

Function	Set value when deliver	Function	Set value when deliver
HSP	400	ALY	L
LSP	-199.9	AdF	1.0
TYP	H	HPr	400
dLt	0.0	LPr	-199.9
dIF	1.0	JSP	off
Cor	0.0	SEU	off
LoC	off	dtP	off
oU2	Pro	oft	4
ALr	off	ont	10
		ddt	0.00

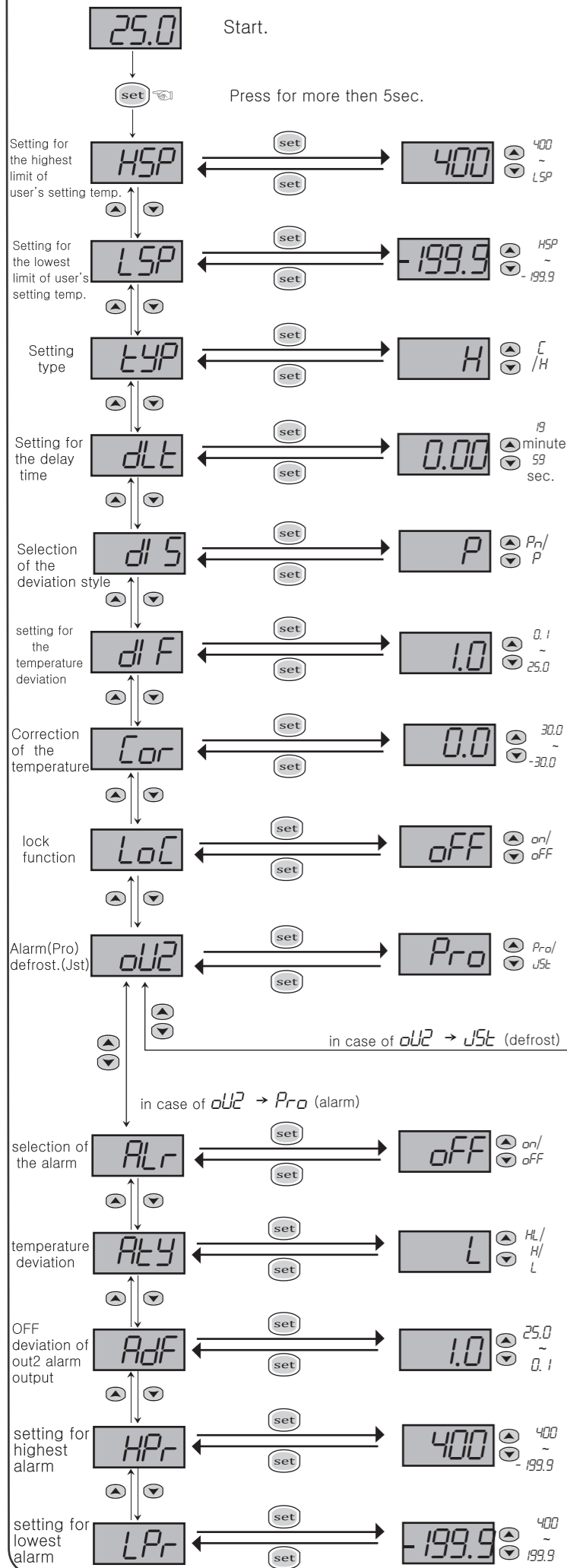
6 Dimension



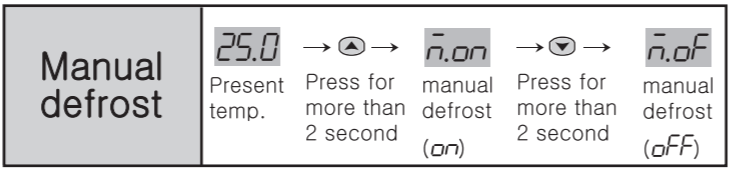
7 Sequence



# Setting for programs(2P2)



## 8 Detailed manual

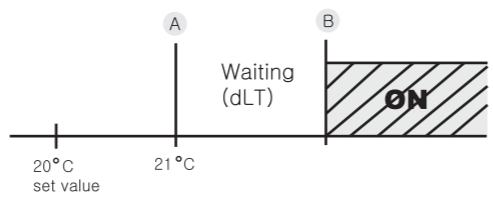


**HSP** : Setting function of the highest limit of temperature range (Maximum set point allowed to the end user)  
 -Impossible to set up the set value more than HSP set value  
 ex) HSP = 25°C setting → impossible to raise the set value more than 25°C

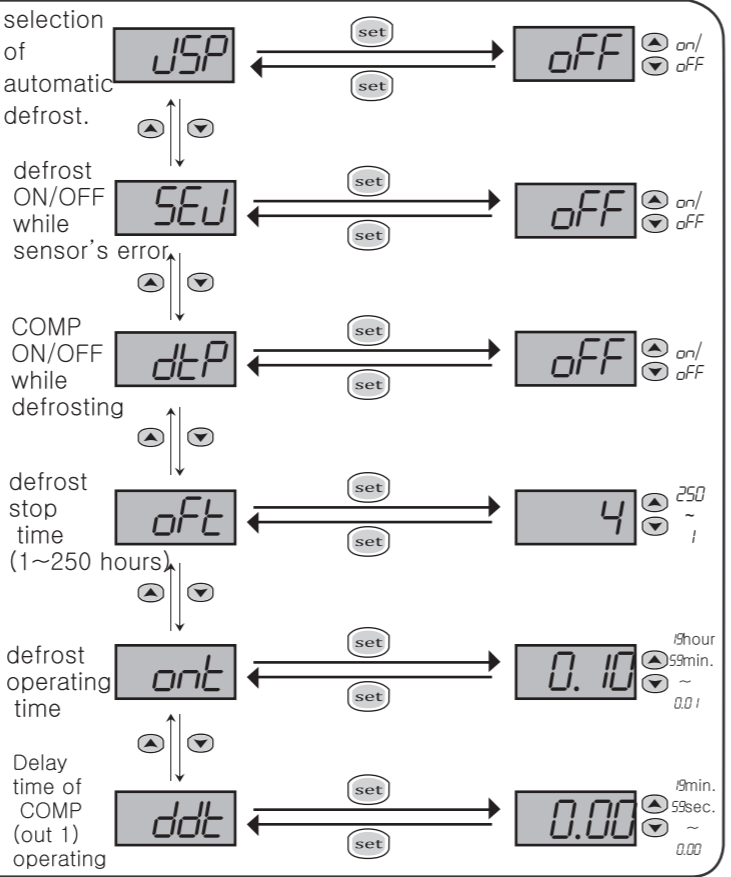
**LSP** : Setting function of the lowest limit of temperature range (Minimum set point allowed to the end user)  
 -Impossible to set up the set value less than LSP set value  
 ex) LSP = 10°C setting → impossible to lower the set value less than 10°C

**LYP** : Selection of the Cooling (CoL) & Heating (HEt)

**dLT** : Delay time of the output  
 It is widely used as the followings  
 -in case of operation machinery when re-input of the power supply or momentary stoppage of power supply



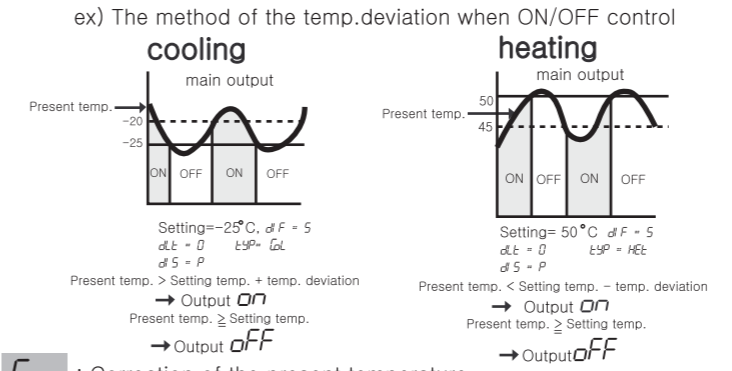
ex) If the set value is 1 :  
 from A until B time → the relay is ON in the B point after as delay as the dLT setting time(1min.)  
 (flickering the Output lamp during the dLT time)



**dlS** : Selection of deviation style  
**P** Output : +deviation (be off at setting point)  
 ex) setting 10.0 C, LYP: CoL, dlF: 5.0  
 15.0°C — output on  
 10.0°C — setting point off  
 5.0°C — output on  
 <cooling>  
 <heating>

**Pn** Output : +deviation (based on the setting point)  
 ex) setting 10.0 C, LYP: CoL, dlF: 5.0  
 15.0°C — on  
 10.0°C — setting point  
 5.0°C — off  
 <cooling>  
 ex) setting 10.0°C, LYP: HEt, dlF: 5.0  
 15.0°C — off  
 10.0°C — setting point  
 5.0°C — on  
 <heating>

**dlF** : Setting for temperature deviation  
 - In the ON/OFF control, it needs at regular interval between ON and OFF  
 - By operating the ON/OFF control frequently, the relay or its output contact can be damaged quickly and it also occurs the hunting (oscillating, chattering) by virtue of external noise, You can make use of the temperature deviation in order to protect its relay or contact and so on



**Cor** : Correction of the present temperature.  
 It is used for the correction of a discrepancy between the display temperature and an actual temperature.  
 ex) actual temp. : 10°C → Cor : 0.0 → -2 correction → 10°C display  
 display : 12°C change

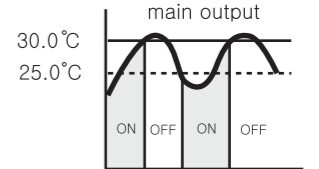
**LoC** : on: lock function on  
 off: lock function off  
**oU2** : selection of out2 output  
 Pro: turn on of the alarm output for output 2  
 JSt: turn on of the defrost output for output 2  
**ALr** : on: alarm on  
 off: alarm off  
**ALy** : selection of the alarm  
 HL : alarm of the highest & lowest limit  
 Output on - more than HPR setting value or less than LPR setting value



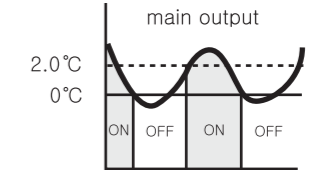
**H** : alarm of the highest limit  
 Output on - more than HPR setting values  
**L** : alarm of the lowest limit  
 Output on - less than LPR setting values

**AdF** : OFF deviation of Out2 alarm output  
**HPr** : setting for highest alarm  
**LPr** : setting for lowest alarm  
**JSP** : selection of automatic defrost.  
 on : defrost ( working on both automatic defrost and manual one)  
 off : manual defrost ( working on only manual defrost)  
**SEU** : defrost ON/OFF while sensor's error  
 on : defrost on while defrosting  
 off : defrost off while defrosting  
**dTP** : COMP ON/OFF while defrosting  
 on : COMP on while defrosting  
 off : COMP off while defrosting  
**oFT** : defrost stop time (1~250 hours)  
 Start defrost by passing OFT setting time  
**onT** : defrost operating time  
 Defrost output (out 2) on while ONT setting time.  
**ddt** : Delay time of the COMP(out 1) operating  
 It is used for draining of a drop of water left after terminating of the defrost,  
 COMP(out 1) will be operated after terminating of the delay time

ex) application  
 ex) Heater → turn off at 30°C, turn on at 25°C  
 How to operate (setting for the temperature & programs)?



<Setting temp.> (see the setting temperature)  
 setting : 30.0°C  
 <Setting program> (see the setting for program)  
 LYP : HEt  
 dlS : P (deviation → one side, set point → off)  
 dlF : 5 (on/off interval → 5 )  
 ex) Cooler → turn off at 0°C, turn on at 2°C  
 How to operate (setting for the temperature & programs)?



<Setting temp.> (see the setting temperature)  
 setting : 0°C  
 <Setting program> (see the setting for program)  
 LYP : CoL  
 dlS : P (deviation → one side, set point → off)  
 dlF : 2.0 (on/off interval → 2.0 )

## 9 Error message

**Er** : Memory error. Turn the power off and turn it on again  
 If the error message persists, please request us A/S by return  
**S-E** : Sensor error. The sensor is interrupted. Check the cable.  
**5-E** : Sensor error. The sensor is short-circuited. Check the cable

※ The product's specification can be changed without any notification to improve its quality.  
 ■ H. Office : Ballyonsandan 1-ro, Jangan-eup, Gijang, Busan, Republic of Korea  
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 ※ This device works proper operation with :  
 Ambient Temp : 0 ~ 60°C  
 Ambient Humi. : below 80%RH  
 Regular power : 220VAC ±10% 50/60Hz