



DSFOX[®]

Digital Temperature Controller

DAESUNG ENG

www.foxeng.co.kr

Operating Manual



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

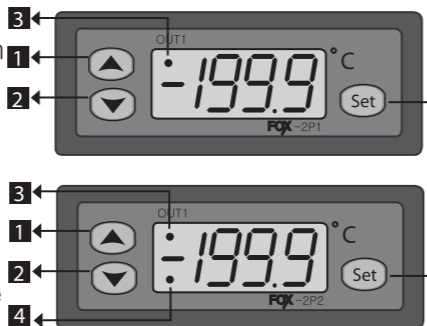
⚠ Danger

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

2 Composition

Model	Sensor	Temp.range	Size(mm)	Output	Function
2P1	PT100 Ω	-199.9°C ~ +400°C	77(W)x35(H)	100~240VAC 50/60Hz	Temp. control(1R)
2P2	PT100 Ω	-199.9°C ~ +400°C	77(W)x35(H)	100~240VAC 50/60Hz	Temp.(1R) def./alarm(2R)
2P1-D	PT100 Ω	-199.9°C ~ +400°C	77(W)x35(H)	DC12 ~ 24V	Temp. control(1R)
2P2-D	PT100 Ω	-199.9°C ~ +400°C	77(W)x35(H)	DC12 ~ 24V	Temp.(1R) def./alarm(2R)

3 Part name



- 1 Setting up
- 2 Setting down
- 3 Output1
- 4 Output2
- 5 Change function switch

Setting temperature & programs

- setting temperature

The present temperature shall be displayed after 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.

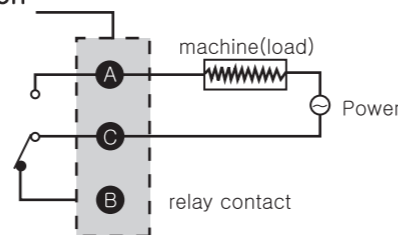
- Setting programs

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 changed by pressing **▲▼** key and then press **Set** key to move to next mode

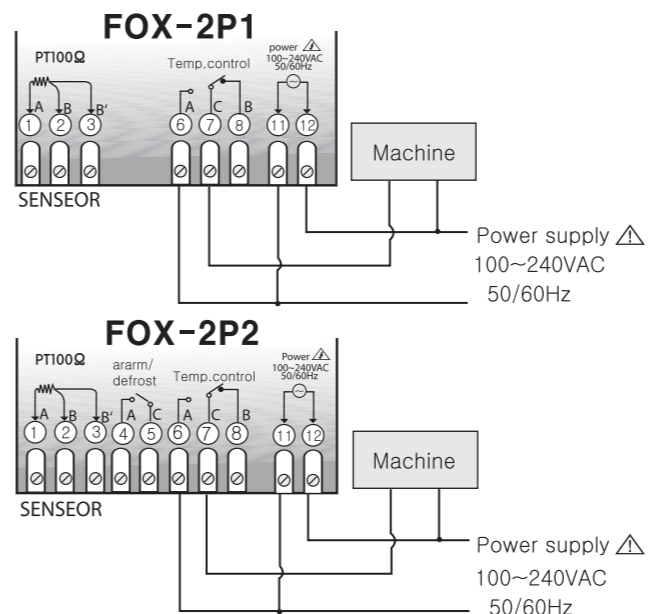
※ The set or programming mode is terminated, if you press the **Set** key for more than 2 second, parameters(set values) are saved after showing **o-L** letter or return to the present temperature automatically after 10seconds

■ Relay junction



※ Relay contact capacity – less than 250VAC 2A

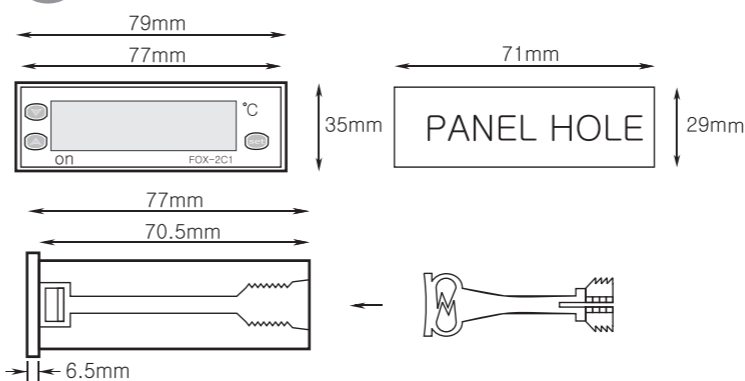
4 Connection



5 Temp.range&set value when deliver

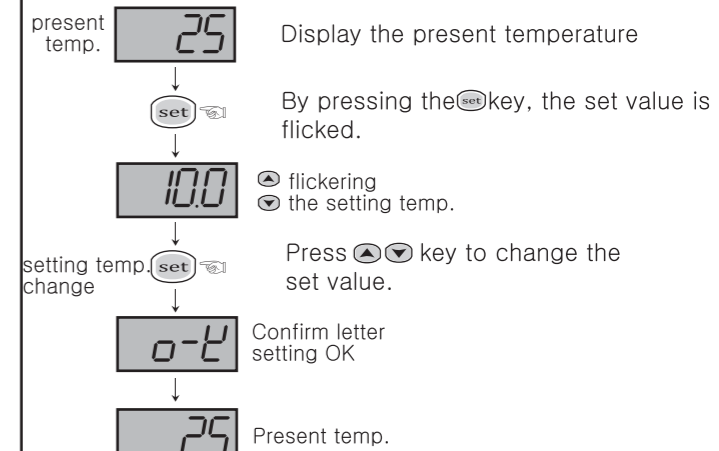
Function	Set value when deliver	Function	Set value when deliver
HSP	400	ALY	L
LSP	-199.9	ADF	10
TYP	C	HPF	400
DLT	00	LPF	-199.9
DIF	10	JSP	off
COR	00	SEU	off
LoC	off	dtP	off
oU2	Pro	oft	4
ALr	off	ont	10
		ddt	0.00

6 Dimension

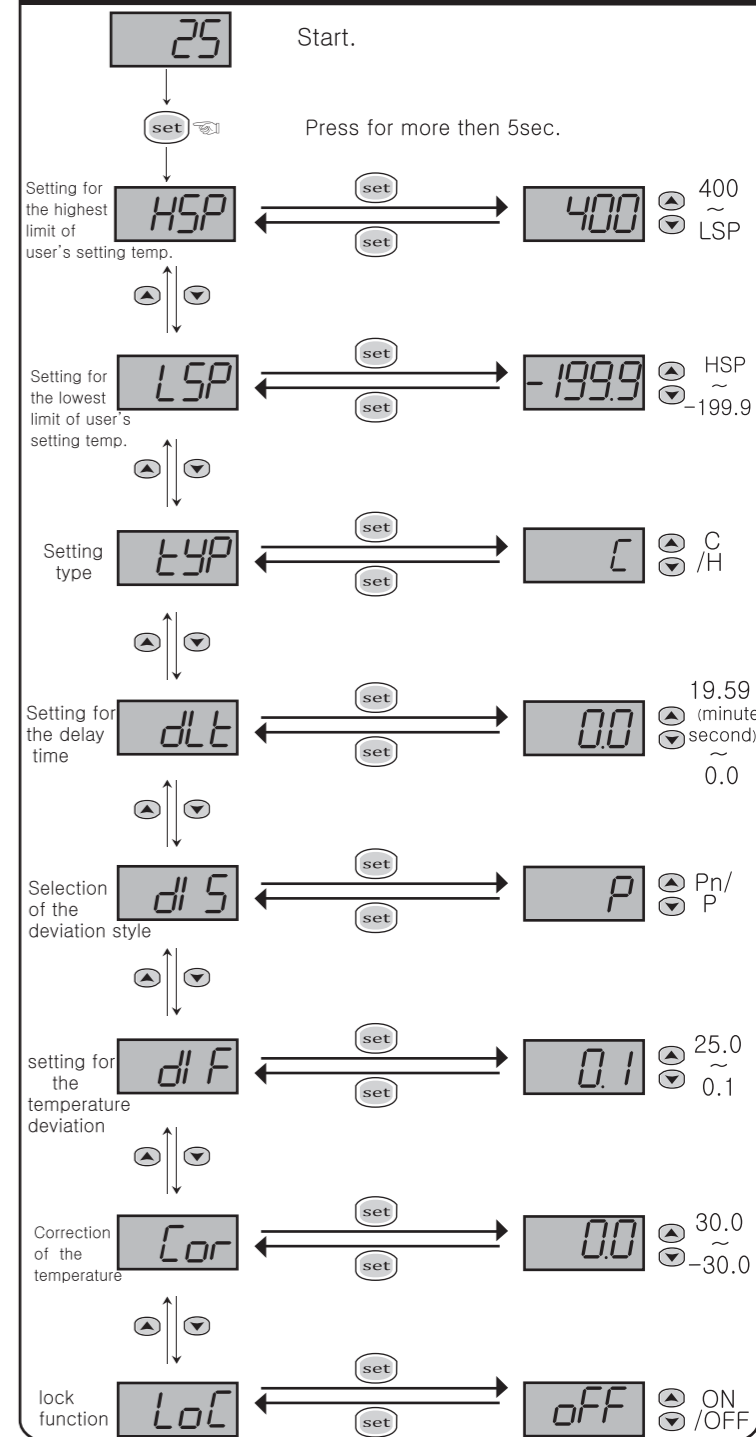


7 Sequence

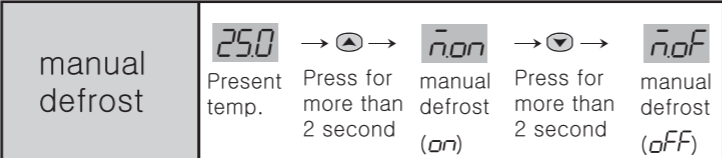
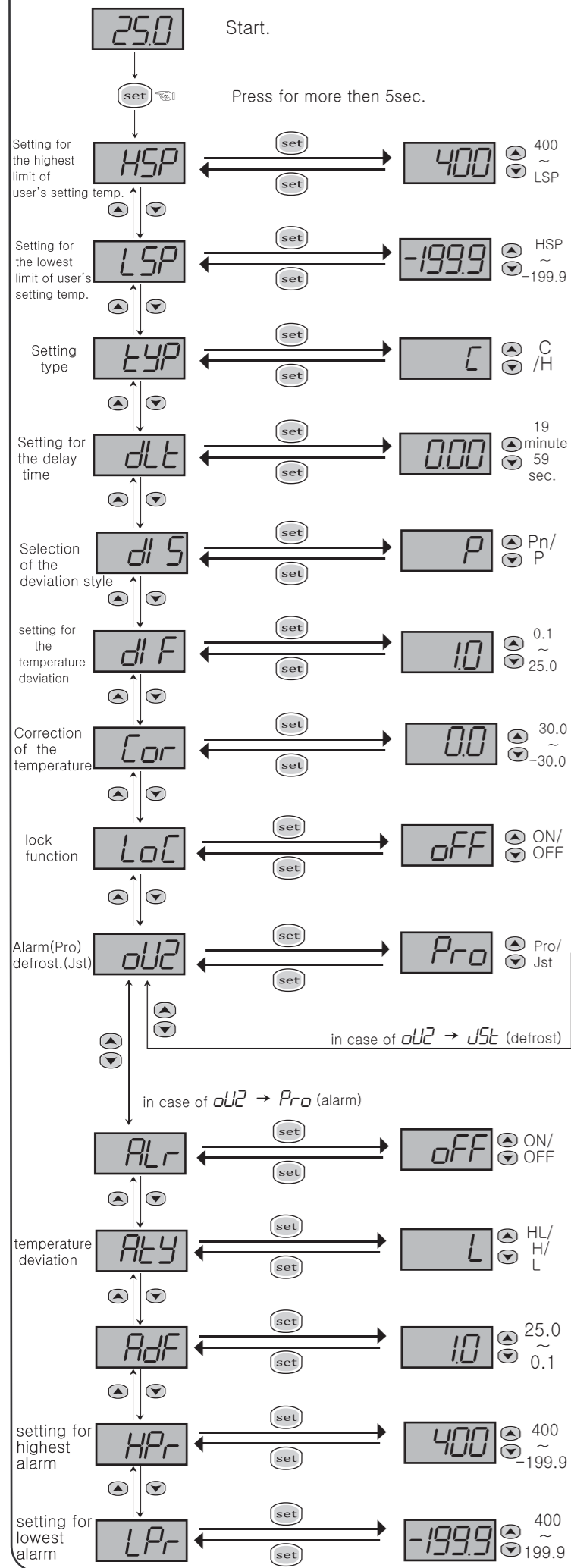
Setting temperature



Setting for programs(2P1)



Setting for programs(2P2)

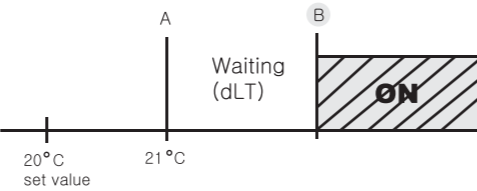


HSP : Setting function of the highest limit of temperature range (Maximum set point allowed to the end user)
 -Impossible to set up the set value more than **HSP** set value
 ex) **HSP** = 25°C setting → impossible to raise the set value more than 25°C

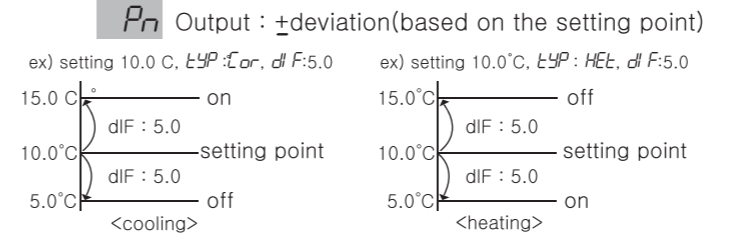
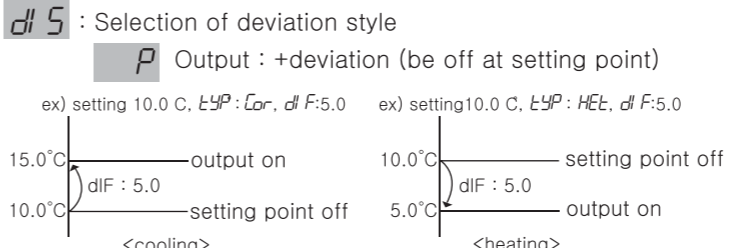
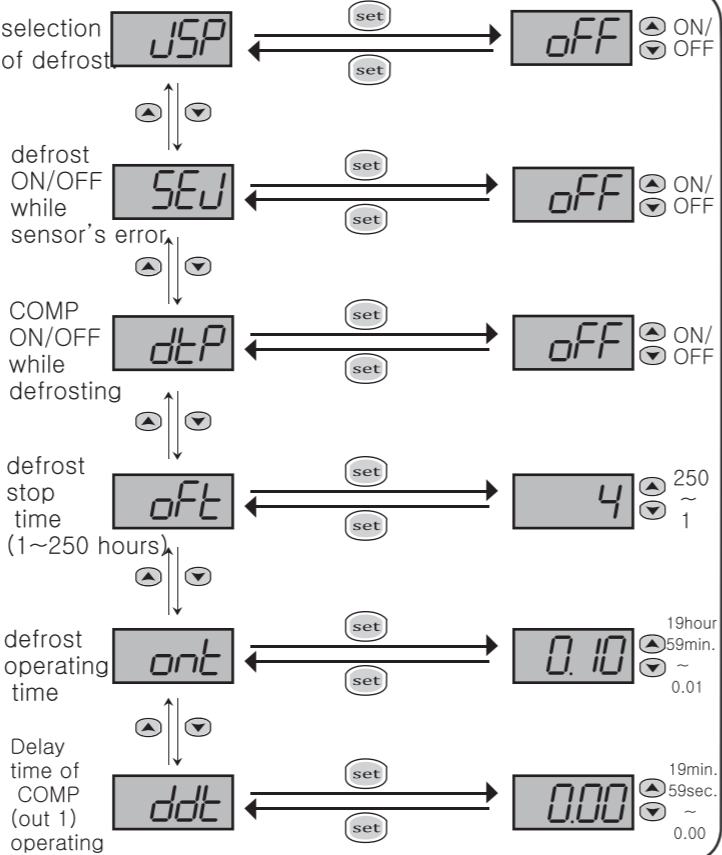
LSP : Setting function of the lowest limit of temperature range (Minimum set point allowed to the end user)
 -Impossible to set up the set value less than **LSP** set value
 ex) **LSP** = 10°C setting → impossible to lower the set value less than 10°C

TYP : Selection of the Cooling(CoL) & Heating(HEt)

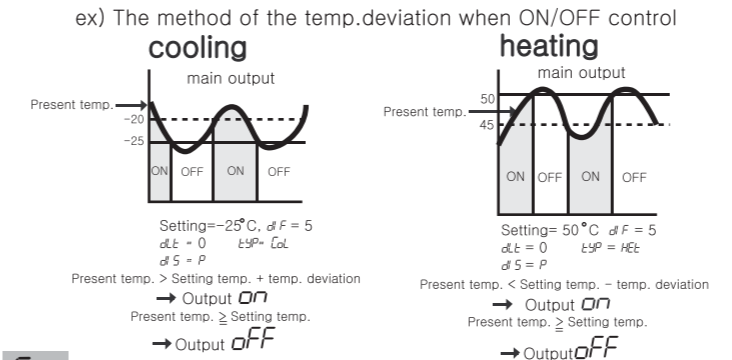
dLT : Delay time of the output
 It is widely used as the followings
 -in case of operation machinery when re-input of the power supply or momentary stoppage of power supply



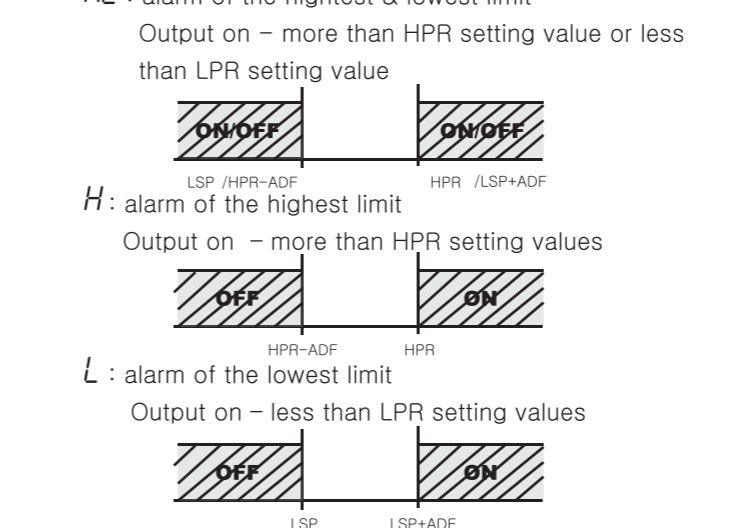
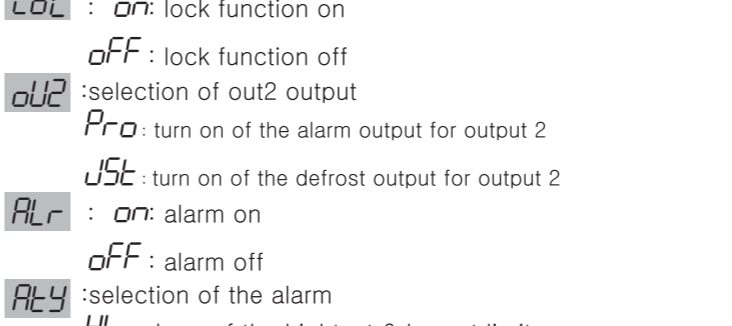
ex) If the set value is 1 :
 from A until B time → the relay is ON in the B point after as delay as the **dLT** setting time(1min.)
 (flickering the Output lamp during the **dLT** time)



dLF : Setting for temperature deviation
 - In the ON/OFF control, it need 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

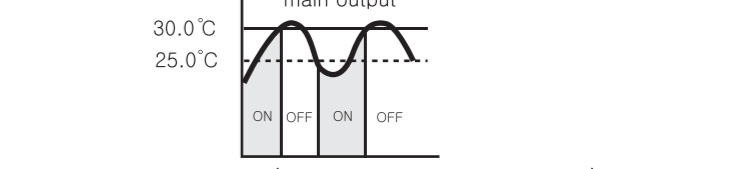


Cor : Correction of the present temperature.
 It is used for the correction of an discrepancy between the display temperature and an actual temperature.
 ex) actual temp. : 10°C → **Cor** : 0.0 → -2 correction → 10°C display
 display : 12°C change



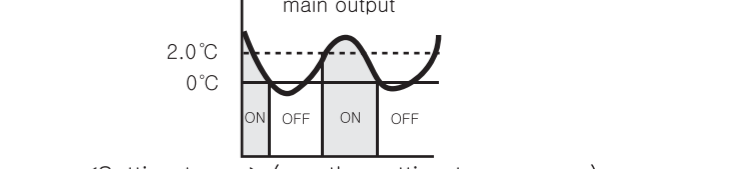
AdF : OFF deviation of Out2 alarm output
HPr : setting for highest alarm
LPr : setting for lowest alarm
JSP : selection of defrost.
on : defrost (working on both automatic defrost and manual one)
off : manual defrost (working on only manual defrost)
SEU : defrost ON/OFF while sensor's error
on : defrost on while defrosting
off : defrost off while defrosting
dLP : 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
 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)
TYP : 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)
TYP : CoL
dLS : P(deviation → one side, set point → off)
dLF : 2.0 (on/off interval → 2.0)

9 Error message

Er 1 Memory error. Turn the power off and turn it on again
 If the error message persists, please request us A/S by return
σ-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.

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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