

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 thoroughly 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

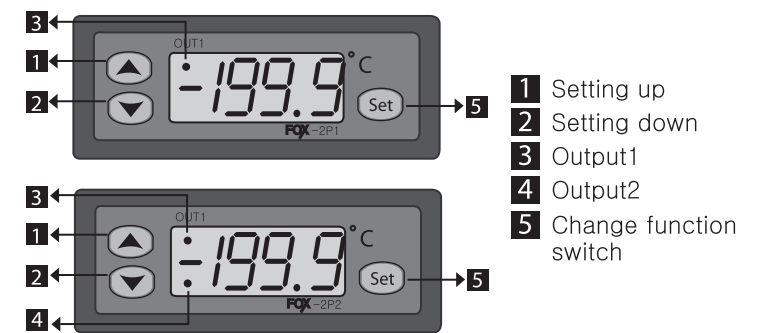
⚠ Danger

- 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.

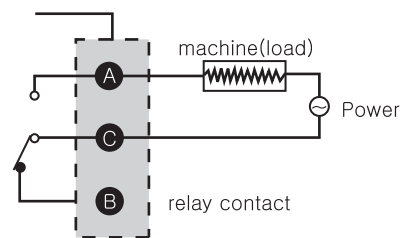
• Setting programs

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

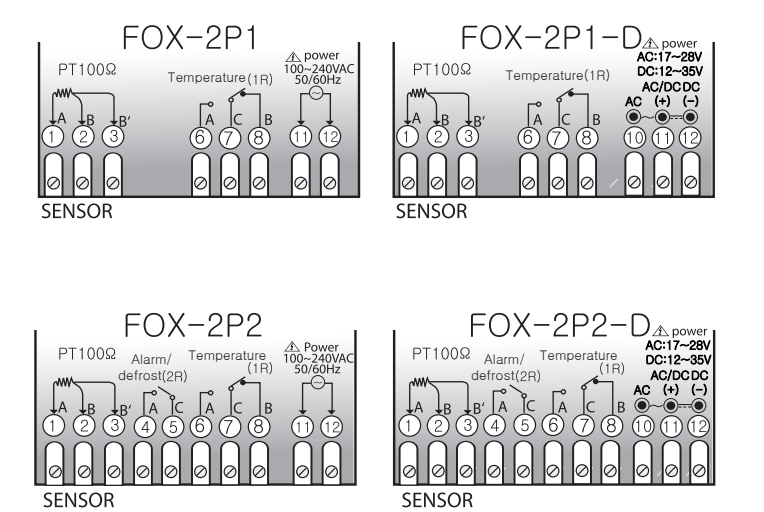
※ The set or programming mode is terminated, if you press the **Set** key for more than 2 second, parameters(set values) are saved after showing **o-L** letter or return to the present temperature automatically after 10seconds

■ Relay junction



※ Relay contact capacity – less than 250VAC 2A

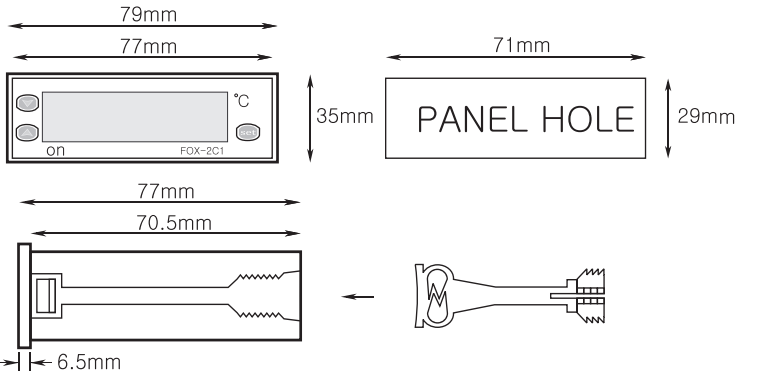
4 Connection



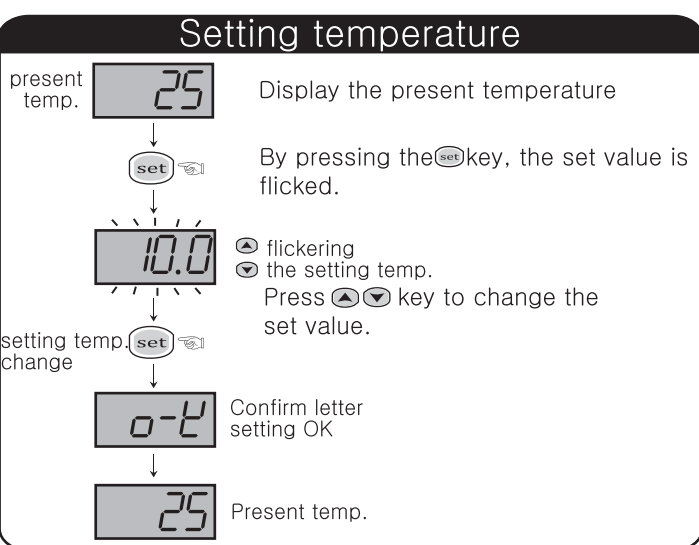
5 Temp.range&set value when deliver

Function	Set value when deliver	Function	Set value when deliver
HSP	400	ALY	L
LSP	-199.9	AdF	1.0
TYP	H	HP-	400
dLt	0.0	LP-	-199.9
dIS	P	JSP	oFF
dIF	1.0	SEU	oFF
Cor	0.0	dtP	oFF
LoC	oFF	oFt	4
oU2	Pro	ont	10
AL-	oFF	ddt	0.00

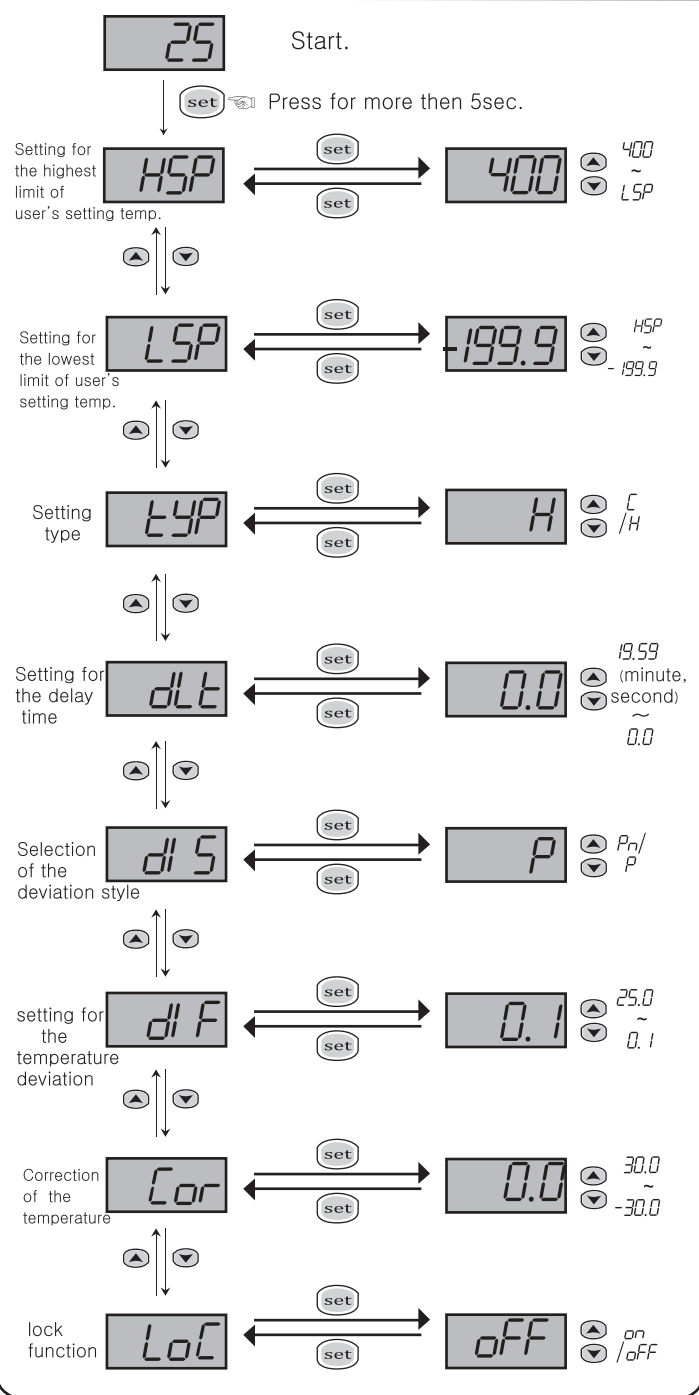
6 Dimension



7 Sequence



Setting for programs(2P1)



Setting for programs(2P2)

Start. **25.0**

Press for more then 5sec. **set**

Setting for the highest limit of user's setting temp. **HSP** **400** 400 ~ LSP

Setting for the lowest limit of user's setting temp. **LSP** **-199.9** HSP ~ 199.9

Setting type **LYP** **H** C/H

Setting for the delay time **dLt** **0.00** 0 minute ~ 59 sec.

Selection of the deviation style **dI S** **P** Pn/P

setting for the temperature deviation **dI F** **1.0** 0.1 ~ 25.0

Correction of the temperature **Cor** **0.0** 30.0 ~ -30.0

lock function **LoC** **off** on/off

Alarm(Pro) defrost.(Jst) **oU2** **Pro** Pro/ Jst

in case of **oU2** → **Jst** (defrost)

in case of **oU2** → **Pro** (alarm)

selection of the alarm **ALr** **off** on/off

temperature deviation **ALy** **L** HL/H/L

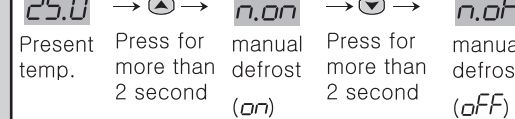
OFF deviation of out2 alarm output **AdF** **1.0** 25.0 ~ 0.1

setting for highest alarm **HPr** **400** 400 ~ 199.9

setting for lowest alarm **LPr** **-199.9** 400 ~ 199.9

8 Detailed manual

Manual defrost

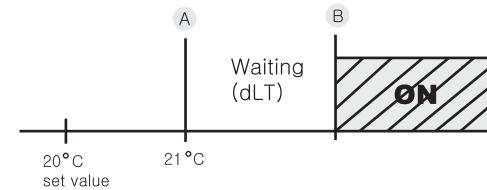


HSP : Setting function of the highest limit of temperature range (Maximum set point allowed to the end user)
-Impossible to set up the set value more than **HSP** set value
ex) **HSP** = 25°C setting → impossible to raise the set value more than 25°C

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)

selection of automatic defrost. **JSP** **off** on/off

defrost ON/OFF while sensor's error **SEU** **off** on/off

COMP ON/OFF while defrosting **dLP** **off** on/off

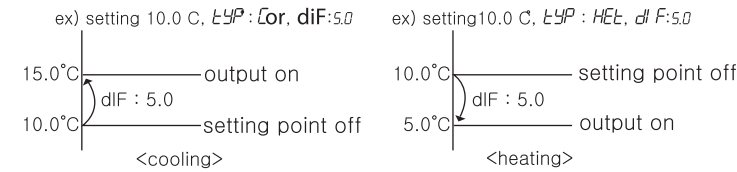
defrost stop time (1~250 hours) **oFt** **4** 250 ~ 1

defrost operating time **ont** **0.10** 0.1hour ~ 59min. ~ 0.01

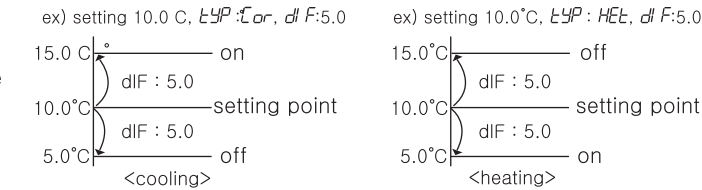
Delay time of COMP (out 1) operating **ddt** **0.00** 0.1min. ~ 59sec. ~ 0.00

dI S : Selection of deviation style

P Output : +deviation (be off at setting point)



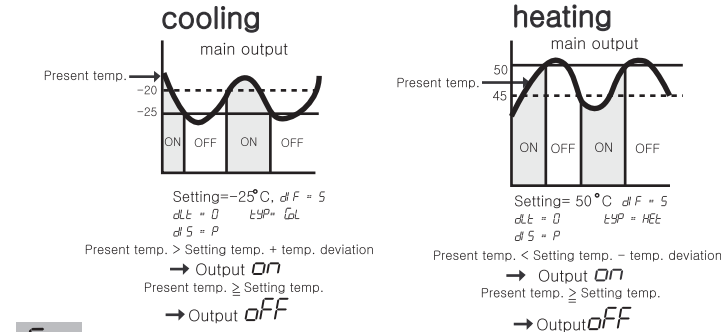
Pn Output : +deviation(based on the setting point)



dI F : 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

ex) The method of the temp.deviation when ON/OFF control



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

LoC : **on**: lock function on
off : lock function off

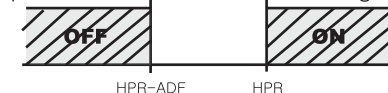
oU2 : selection of out2 output
Pro : turn on of the alarm output for output 2
Jst : turn on of the defrost output for output 2

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
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

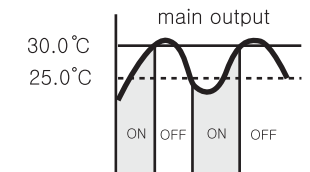
ont : defrost operating time

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

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

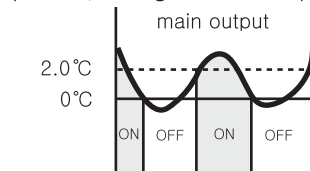
<Setting program> (see the setting for program)

LYP : **HEt**

dI S : **P** (deviation → one side, set point → off)

dI F : 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**

dI S : **P** (deviation → one side, set point → off)

dI F : 2.0 (on/off interval → 2.0)

9 Error message

E1 Memory error. Turn the power off and turn it on again

If the error message persists, please request us A/S by return

o-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 : CONOTEC B/D 2nd floor, 26, Yunsan-ro, Geumjeong-gu, Busan, 609-821 Rep. of KOREA
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■ A/S TEL : +82-51-819-0426
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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