

CONOTEC

CONOTEC CO., LTD.
DIGITAL TEMPERATURE CONTROLLER



FOX-2002, 2002RS, 2002SR

Instruction Manual



- A user manual for this product is posted on the company website.
- Please download the technical document and communications manual on the company website

01 Safety precautions

Please read the safety precautions carefully for correct operation of the product.

- ✱ The specifications and dimensions specified in this instruction manual may be changed without any notice for performance enhancement.

▲ Warning

1. This product was not made as a safe device. Therefore, this product should be attached with dual safety devices if it is used for the control purposes (e.g. a device vulnerable to accident and property damage, etc.).
2. Do not wire, inspect or service this product while the power is being supplied.
3. You must attach this product to a panel. Otherwise, it may cause an electric shock.
4. When connecting the power, you must check the terminal number.
5. Do not ever disassemble, process, modify or repair this product.

▲ Caution

1. Please make yourself familiar with all the operation instructions, safety precautions and warnings before using this product. Comply with related specifications and capacity requirements
2. Do not wire or install this product to any unit with high inductive load (e.g. motor, solenoid, etc.).
3. Use a shielded cable with a proper length when extending a sensor.
4. Do not use any part that generates an arc when used in the same power or directly switched in close proximity.
5. Keep the power cable away from a high-voltage cable and do not install this product in any place that is full of water, oil and dust.
6. Do not install this product in any place that is exposed to direct sunlight or rain.
7. Do not install this product in any place that is subject to strong magnetic power, noise, vibration or shock.

8. Keep this product away from any place that generates strong alkaline or acid substances. Use a separate pipe.
9. Do not sprinkle water onto this product for cleaning when installing it in the kitchen.
10. Do not install this product in any place where the temperature/humidity ratings are exceeded
11. The sensor cable should not be cut or cracked..
12. Keep the sensor cable away from a signal cable, a power cable or a load cable. Use a separate pipe.
13. Keep in mind that the follow-up service will not be available if this product has been arbitrarily disassembled and modified
14. ⚠ symbol on the terminal wiring diagram indicates a safety statement that alerts a warning or caution.
15. Do not use this product near any device generating strong high-frequency noise (e.g. high-frequency welding machine high-frequency sewing machine, high-frequency radio, large-capacity SCR controller, etc.).
16. Using this product in any method other than those specified by the manufacturer may lead an injury or a property damage
17. The product is not a toy. Keep it away from children.
18. The product should be installed only by an expert or a qualified person.
19. The company will not be liable for any damage caused by the violation of the above warnings and cautions or by a consumer's fault

▲ Danger

Caution: Risk of electric shock

- Electric shock – Do not touch the AC terminal while the current is flowing. It may cause an electric shock.
- You must disconnect the input power when servicing it.

02 Model Types

Model	Sensor	Output	Temp.Range	Function
FOX-2002	NTC	relay	-55.0℃ ~ +99.9℃	Temp. control Alarm Control
FOX-2002RS	NTC	relay SSR (12VPC 30mA Max)	-55.0℃ ~ +99.9℃	Temp. control Alarm Control
FOX-2002SR	NTC	SSR (12VPC 30mA Max) relay	-55.0℃ ~ +99.9℃	Temp. control Alarm Control

03 Components



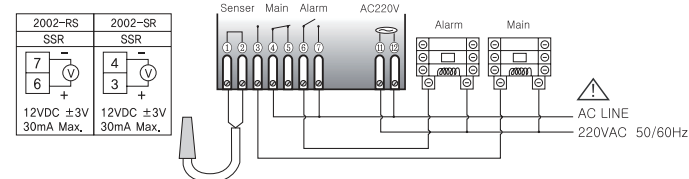
- 1 Temp. output lamp
- 2 Alarm temp. output lamp
- 3 Setting up
- 4 Change function switch
- 5 Setting down

[The function of each key.]

1. : A key to change of the programs & setting temperature
2. : A key to change of the program's set values & temperature

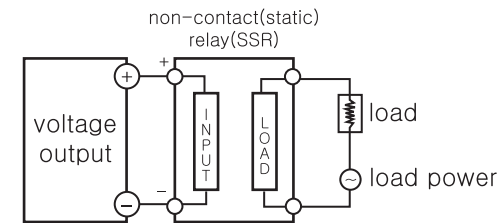
04 Terminal wiring diagram

[FOX – 2002]



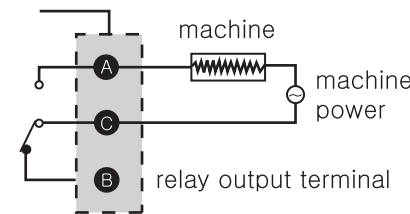
- ✱ Output: 250VAC 2A
Please make use of the power relay or magnet surely.

■ EX) SSR junction



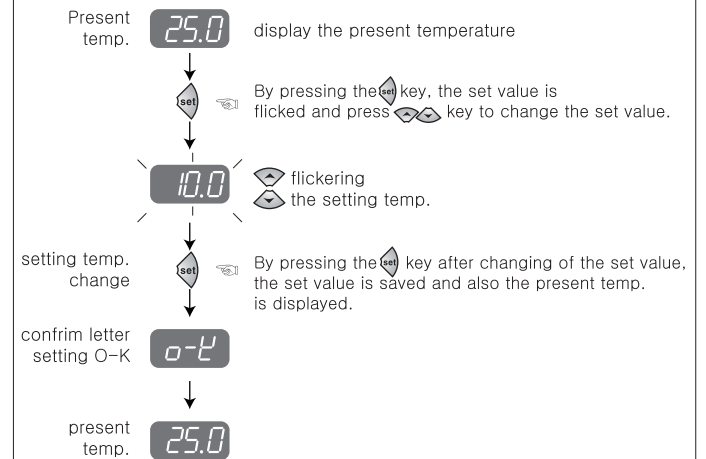
- ✱ Please make sure that the SSR's capacity should be used more than load capacity.

■ EX) Relay junction

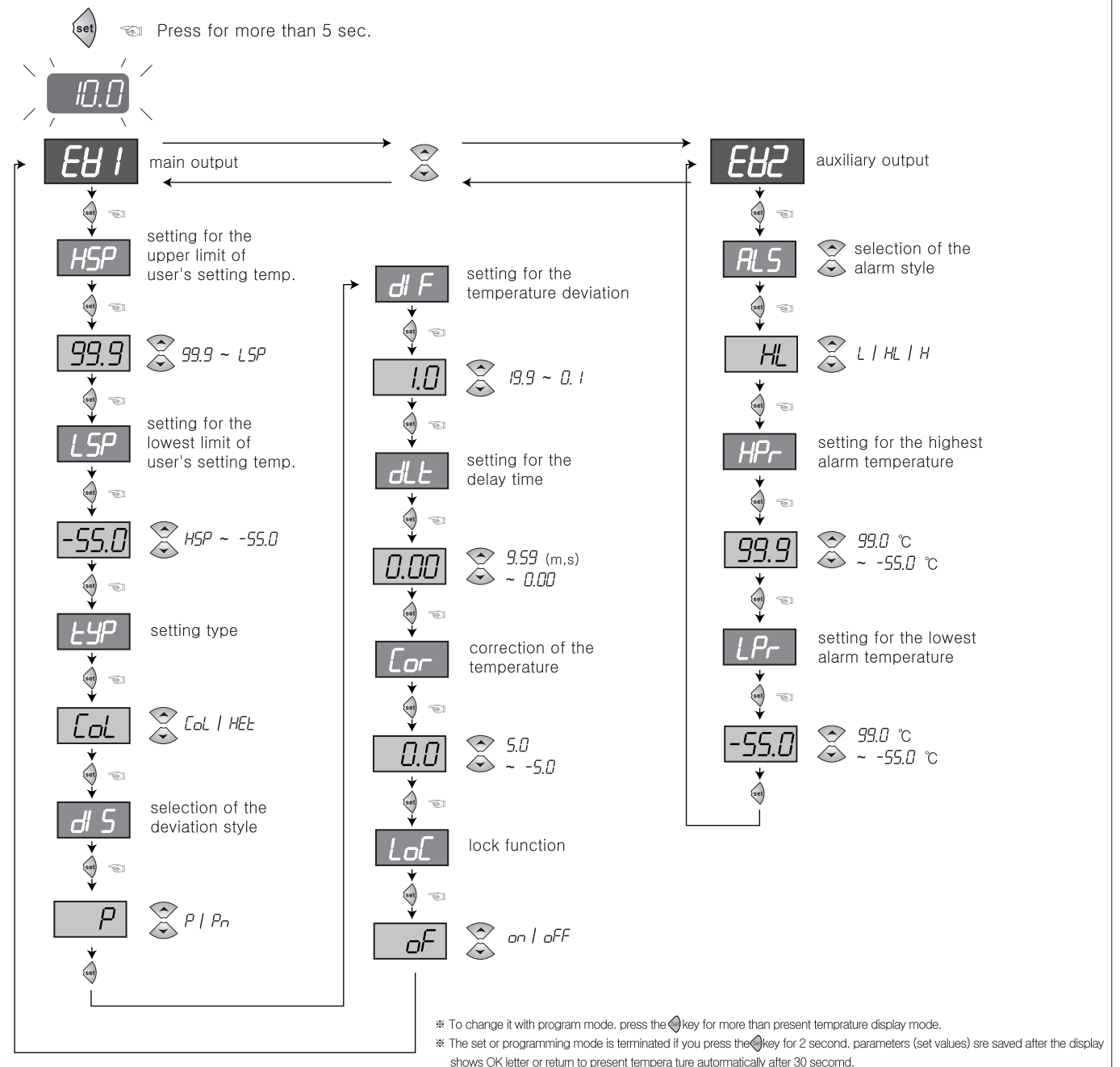


05 Setting process

Setting temperature



Program setting (The value of each item is the factory setting.)



- ✱ To change it with program mode, press the key for more than present temperature display mode.
- ✱ The set or programming mode is terminated if you press the key for 2 second, parameters (set values) are saved after the display shows OK letter or return to present temperature automatically after 30 second.

06 Function details

EHI : set values of the main output

Eh2 : set values of the auxiliary output

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** = 25.0℃ setting
→ impossible to raise the set value more than 25.0℃

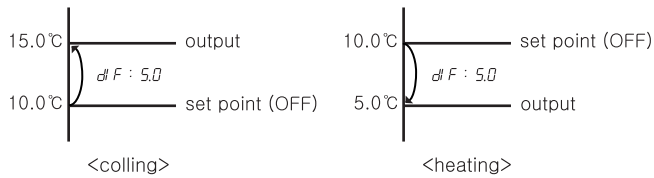
LSP : Setting function of the lowest limit of temperature range
(Minimum set point allowed to the end user)
-Impossible to set up the set value less than **LEP** set value
EX) **LSP** = 10.0℃ setting
→ impossible to lower the set value less than 10.0℃

tYP : Selection of the Cooling(**CoL**) & heating(**HEt**)

dI S : Selection of the temperature deviation

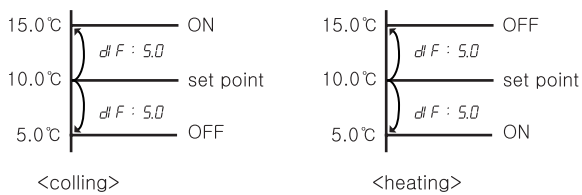
P : + deviation (in the set point > off)

ex) setting = 10.0℃ **tYP** : **CoL** , **dI F** : 5.0 ex) setting = 10.0℃ **tYP** : **HEt** , **dI F** : 5.0



Pn : ± deviation

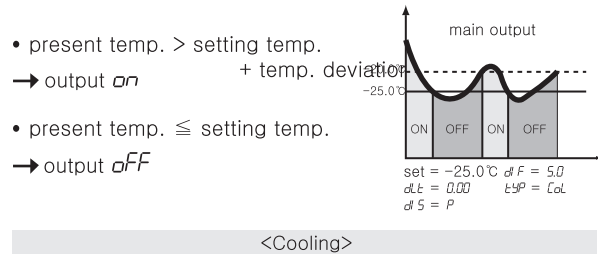
ex) setting = 10.0℃ **tYP** : **CoL** , **dI F** : 5.0 ex) setting = 10.0℃ **tYP** : **HEt** , **dI F** : 5.0



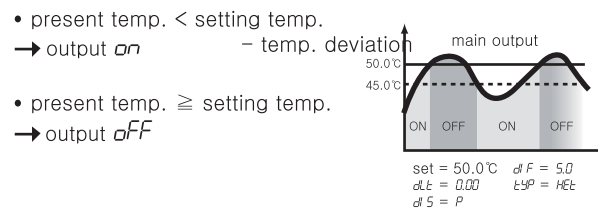
dI F : Setting for temperature deviation

-In the ON/OFF control, it needs at regular interval between ON and OFF.

-By operating the ON/OFF control frequently, the realy 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 realy or contact and so on.



<Cooling>

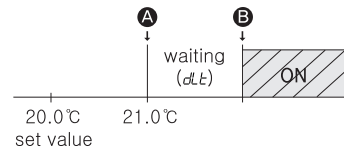


<Heating>

dLt : Delay time of the output
It is widely used as the followings.

- in case of operating the ON/OFF control very often, (Cooler, Compressor and so on)
- to protect the operation machinery when re-input of the power supply or momentary stoppage of power supply.

EX) If the set value is 1.30,
from ㉠ until ㉢ time → the relay is ON in the ㉢ point after as delay as delay as the **dLt** setting time (1min30sec).
(flickering the output lamp during the **dLt** time.)



Cor : Correction of the current temperature

- It is used for the correction of an discrepancy between the display temperature and real temperature

EX) real temp : 10.0℃ → **Cor** Modification of 0.0 to -2.0
Display : 12.0℃ → Displayed as 10.0 (current temperature modified)

LoL : The Lock Function

- As a safrty device, it is used in order not to change the set values except for the main user.
- ON – setting for the lock function.
OFF – removal for the lock function.

HP-_r : setting temp. of the highest alarm

- To prevent an excces of temperature highest limit under control

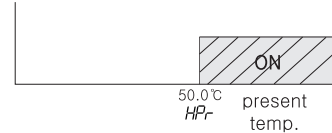
LP-_r : setting temp. of the lowest alarm

- To prevent an excces of temperature lowest limit under control

RLS : style of alarm output

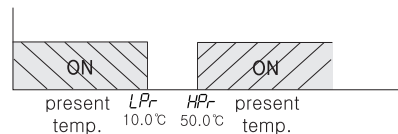
H : output on – only the present temperature is more than **HP-_r** set value

EX) **HP-_r** : 50.0℃



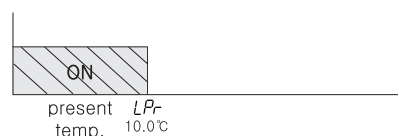
HL : output on – the present temperature is both more than **HP-_r** and less than **LP-_r**

EX) **HP-_r** : 50.0℃ **LP-_r** : 10.0℃



L : output on – only the present temperature is less than **LP-_r** set value

EX) **LP-_r** : 10.0℃



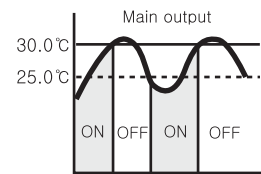
07 Model & output spec

	2001 (Sensor : 1EA)	2001D (Sensor : 1EA)	2001T (Sensor : 1EA)	2001F (Sensor : 1EA)	2000TT (Sensor : 1EA)
Temp. output	one-stage output	two-stage output	three-stage output	four-stage output	Control by the temperature & time (for greenhouse)

	2001 (sensor : 1EA)	2002 (sensor : 1EA)	2003 2003S (sensor : 1EA)	2004 (sensor : 2EA)	2005 (sensor : 2EA)	2006 (sensor : 2EA)
Temp. output	○	○	○	○	○	Temp.1 ○ Temp.2 ○
Alarm output	-	○	-	-	○	Alarm1 ○ Alarm2 ○
Defrost output	-	-	○	○	○	-
FAN output	-	-	○	○	○	-

■ Ex) application

Ex1) Heater → turn off at 30.0, turn on at 25.0 →
How to operate (setting for the temperature & programs)?



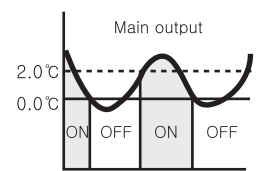
Setting temp. (see the setting temperature)
Setting : 30.0℃

Setting program. (see the setting for temperature)

tYP : HEt

dI S : P (deviation → One side, Set point → OFF)
dI F : 5.0 (on/off interval → 5.0℃)

Ex2) Cooler → turn off at 0.0, turn on at 2.0 →
How to operate (setting for the temperature & programs)?



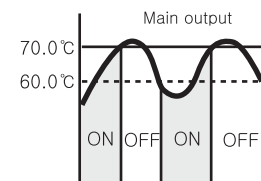
Setting temp. (see the setting temperature)
Setting : 0.0℃

Setting program. (see the setting for temperature)

tYP : CoL

dI S : P (One deviation, Set point OFF)
dI F : 2.0 (on/off interval → 2.0℃)

Ex1) Heater → turn off at 70.0, turn on at 60.0, alarm output → when more than 70.0℃
How to operate ?

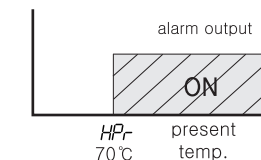


Setting temp. (see the setting temperature)
Setting : 70.0℃

Setting program. (see the setting for temperature)

tYP : HEt

dI S : P (deviation → One side, Set point → OFF)
dI F : 10.0 (on/off interval → 10.0℃)



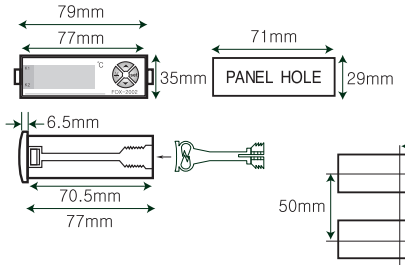
auxiliary Setting

HP-_r : 70℃ (setting for the highest alarm temperature)

RLS : H (output on – when the present temperature is more than **HP-_r** set value)

08 Diemension and panel hole sizes

(Unit : mm / error : ±0.5)



09 Easy error diagnosis instructions

✱ If an error is displayed while the product is running

- **Er1** : It is case where the product was subject to a strong external noise and internal data memories have been damaged
In this case, contact us for product service.
- Although this controller was designed to withstand a certain level of external noise, it is not supposed to withstand all levels of noise.
- If the product is subject to a noise greater than 2KV, it could be internally damaged.
- If **G-E** (open error) or **S-E** (short error) is displayed, there is something wrong with a sensor. Please check the sensor.

✱ The above specifications may be changed without any notice for performance enhancement. Please make yourself fully familiar with and follow the above precautions.

■ Warranty period: One year from the date of purchase

■ Address : (Street address) 56, Ballyongsandan 1-rp, Jangan-eup, Gijang-gun, Busan, ROK
(Land-lot address) 901-1, Ballyong-ri, Jangan-eup, Gijang-gun, Busan, ROK (46034)

- Product service : 070-7815-8289
- Customer service : 051-819-0425 ~ 0427
- FAX : 051-819-4562
- Email : conotec@conotec.co.kr
- SNS : Facebook, Instagram, Twitter, YouTube ▶ 'Search for 'Conotec'
- Website : www.conotec.co.kr

◆ Installation precautions

■ This device should be connected to a protective earth terminal and a power supply in order to prevent an electric shock.

■ Do not block the air outlet.

◆ Operation precautions

✱ An operating environment of this device is as follows.

■ Ambient temperature : 0 ~ 60℃

■ Ambient humidity : 80%RH or less

■ Indoor uses only

■ Pollution class 2

■ Altitude under 2000m

■ Installation category : II

■ This device should be laid out in a way that its power cord is easy to handle.

■ Using this product in any method other than those specified by the manufacturer may damage its protection function

■ Major products and development

- Temperature/humidity controller
- Counter and timer controller
- Current and voltage panel meter
- Temperature/humidity indicator
- Oven controller
- CO2 controller
- PID controller
- Unit cooler controller
- Heat pump controller
- Chiller controller
- Thermo-hygrostat controller
- Short message alarm
- Temperature/humidity transmitter
- Smartphone app and monitoring system

✱ This manual was prepared in the Naver Nanum fonts.