



OPERATING MANUAL FOX-2003TX



1 Caution for Your Safety

Please read this instruction carefully before using this controller.
※ The Manual's information & specification can be changeable to improve its quality without any notification.

Safety

1. 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.
2. Do not checking or repairing when it is power on
3. Please check the terminal number before connecting power supply.
4. Do not disassemble or open, remodel, repair without any permission.

Safety Instruction and Hazard Warnings

- Please read the operating manual through completely before putting the device into operation.
- Do not install or wire to it under an excessive induction loads or solenoid.
- Pls use the shield cable when the sensor cable's lengthen, however do not make it too much longer.
- Do not use same power supply or any component to cause arc when make and break near directly.
- 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 be exposed to extreme temperature, sunlight, strong vibrations or high levels of humidity.
- Keep away and use independence piping with place that strong alkalinity, strong acidic material appears directly.
- When establish in the kitchen, do not sprinkle water directly due to cleaning.
- Do not install the device for the temperature/humidity in excess of the rated.
- Please use the sensor cable without any cutting or flaw, blemish.
- Do not install the sensor cable close to signal cable, power cable load cable.
- Please be understanding that the device may not be after service when disassembled or remodelled by random.
- The mark in the diagram for connection is for caution or safety phrase.
- Avoid operation or installation close to high-frequency fields such as welding devices, sewing machines, wireless transmitter, radio systems, SCR controller, etc.
- 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.
- 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 relevant regulations.

DANGER

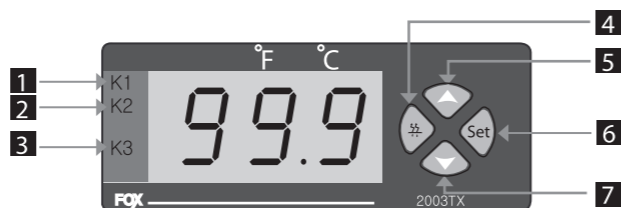
- Caution, Danger of electric shock
- Electric shock-Do not touch AC board on power because of electric shock.
- Pls intercept surely when checking power input

2 MODELS

MODEL	SENSOR	OUTPUT CONTROL	TEMP. RANGE	FUNCTION
FOX-2003TX	NTC	RELAY OUTPUT	°C : -55.0°C ~ 99.0°C	T/C
		RELAY OUTPUT		DEFROST
		RELAY OUTPUT		FAN
FOX-2003TX-RS	NTC	SSR OPER. VDC (12V DC30mA MAX)	°F : -67°C ~ 212°C	T/C
		RELAY OUTPUT		DEFROST
		RELAY OUTPUT		FAN
FOX-2003TX-SR	NTC	SSR OPER. VDC (12V DC30mA MAX)	°F : -67°C ~ 212°C	T/C
		RELAY OUTPUT		DEFROST
		RELAY OUTPUT		FAN

3 PART'S NAME

External shape & each name of part

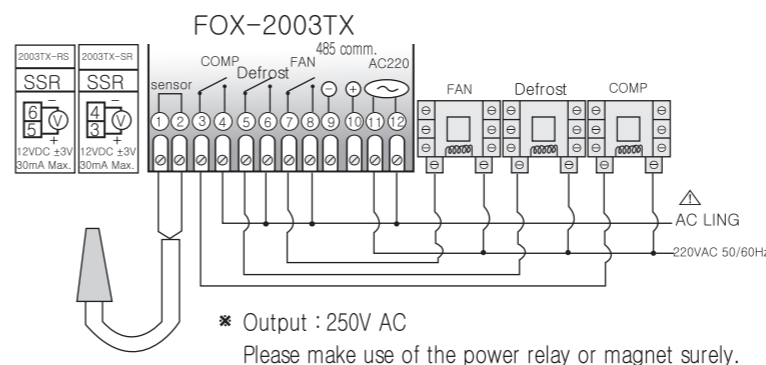


- 1 COMP. OUTPUT DISPLAY
- 2 DEFROSTING OUTPUT DISPLAY
- 3 FAN OUTPUT DISPLAY
- 4 DEFROSTING SWITCH
- 5 SETTING UP
- 6 FUNCTION CHANGING
- 7 SETTING DOWN

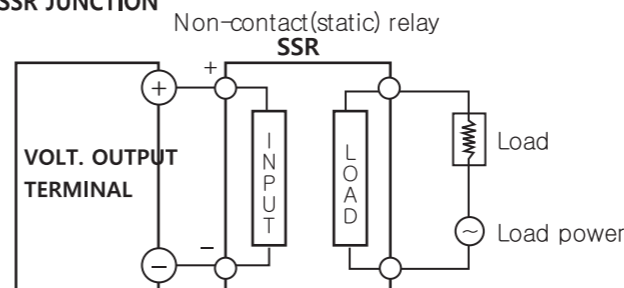
MODE SETTING FOR USER(TEMPERATURE)

- How to change the setting temp. for Main output
 - ◀ If press it once, the setting value is flickered.
 - ◀ or ▶ the value can be up & down with this key.
 - ▶ Defrosting key by manual
- How to set mode function for installer
 - ▶ A key to enter to installer mode if press for more than 5 sec. ▶ change with these keys.

4 CONNECTIONS

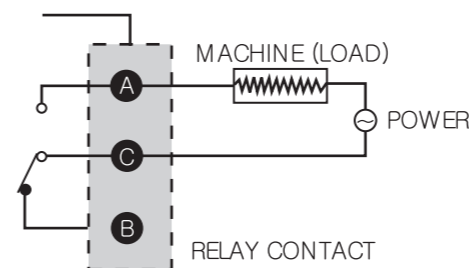


SSR JUNCTION



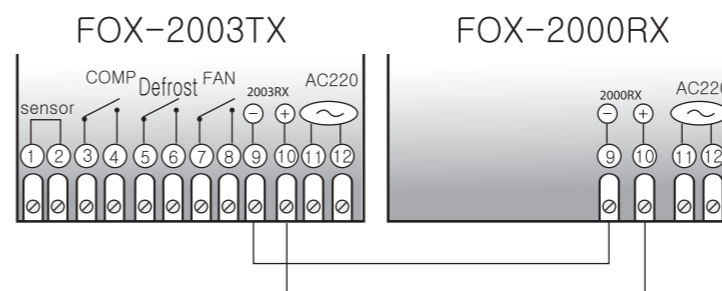
※ Please make sure that the SSR's capacity should be used more than load capacity.

RELAY JUNCTION

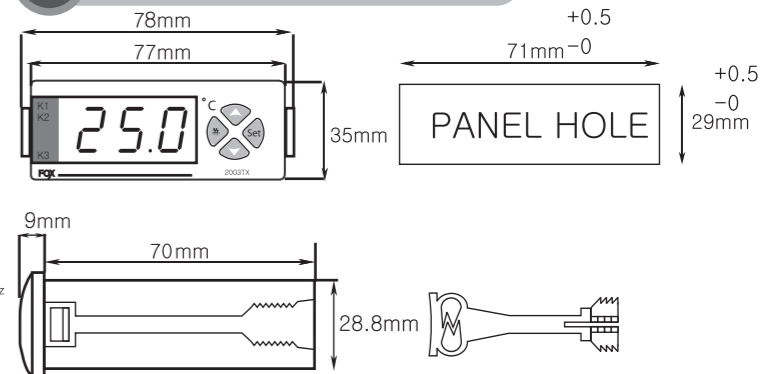


※ Relay contact capacity is less than 250VAC 2A. If using the load to exceed contact capacity, be cautious on those can be caused by contact deposited, contact failure, relay damaged, etc.

5 HOW TO CONNECT TO 2000RX



6 EXTERNAL & PANEL SIZES



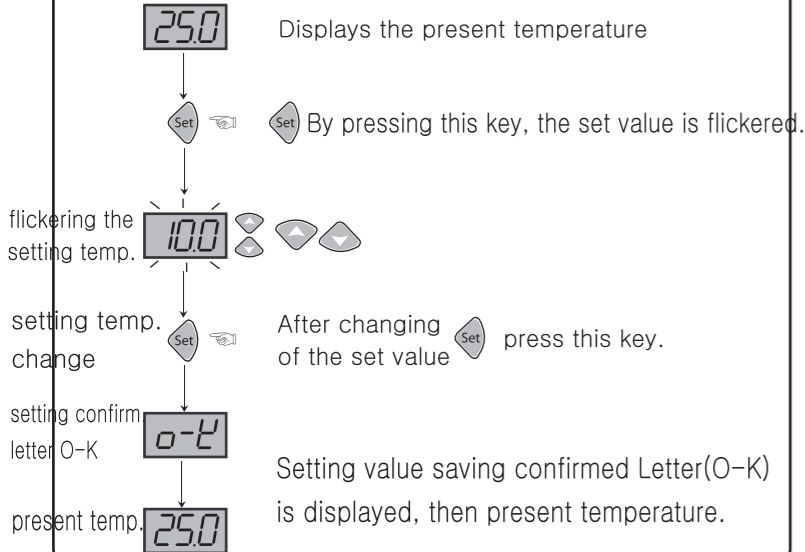
7 SETTING RANGE & SET VALUE WHEN DELIVER

DISPLAY	FUNCTIONS	°C	°F	SETTING VALUE	REMARKS
	TEMP. SETTING	-55.0 ~ 99.9	-67 ~ 212	10.0	
Unit	Temperature display unit	°C / °F		°C	°C : Celsius °F : Fahrenheit
HSP	Setting for the highest limit of user	LSP ~ 99.9	LSP ~ 212	99.9	Irrelevant to the relay output
LSP	Setting for the lowest limit of user	-55.0 ~ HSP	-67 ~ HSP	-55.0	Irrelevant to the relay output
dl S	Select for deviation style	P / Pn		P	Pn : deviation ± P : deviation +
dl F	Temperature deviation	0.1 ~ 19.9	1 ~ 35	1.0	
dl t	Delay time of the output	0.00 ~ 9.99		0.00	Min, Hour
Cor	Correction of temperature	-10.0 ~ 10.0	-18 ~ 18	0.0	Correc. Difference between displayed & actual temp.
SEr	Sensor Error	on / off		off	on : output ON off : output OFF
dtP	COMP select when defrost	on / off		off	on : COMP off : COMP
doF	Defrost stop time	0 ~ 99		4	Setting Hour. units
don	Defrosting time	0 ~ 99		10	Setting Min. units
ddt	After defrost, COMP delay time	0.00 ~ 9.99		0.00	Min, Hour
FSt	FAN setting	1 ~ 4		1	Refer to the chart
Fdt	After defrost, Fan delay time	0.00 ~ 9.99		0.00	
LoL	Lock Function	on / off		off	on : Setting lock function but except the value of temp. off : Setting unlock function but except the value of temp.

	COMP ON	COMP OFF	Defrost
FAN operating	F1 ON	OFF	OFF
	F2 ON	ON	ON
	F3 ON	OFF	ON
	F4 ON	ON	OFF

How to set manual defrost
1. Manual defrost ON : ▶ if press the key for more than 3 sec., K2LED lights on, and starts to defrost manually, then displays on the screen this.
2. Manual defrost OFF : if press for 3 sec. in ON state, ▶ press this key again, it turns OFF. Or, after don turns off automatically.

Setting Temperature



Unit : Display unit changing

°C : displays in Celsius
°F : displays in Fahrenheit
 Caution : Please re-set all setting values due to all setting values except for Unit are returned to the value for ex-factory if you change the unit in operating.

In case of changing HSP=99.9 LSP=-55.0 EYP=C dl S=P dl F=1.0 to Celsius
 dLt=0.00 Cor=0.0 SEr=OFF dtP=OFF don=4 doF=10
 ddt=0.00 FSt=1 Fdt=0.00 LoC=OFF

In case of changing: HSP=212 LSP=-67 EYP=C dl S=P dl F=1 to Fahrenheit
 dLt=0 Cor=0 SEr=OFF dtP=OFF don=4 doF=10
 ddt=0 FSt=1 Fdt=0 LoC=OFF

HSP : Setting for the highest limit of user's setting temperature. (Maximum set point allowed to the end user)
 Impossible to set up the set value more than HSP set value.
 ex) HSP = when setting to 25.0°C → Impossible to set higher than 25.0°C

LSP : Setting for the lowest limit of user's setting temperature. (Minimum set point allowed to the end user)
 Impossible to set up the set value less than LSP set value.
 ex) LSP = when setting to 10.0°C → Impossible to set up the set value less than 10.0°C

dl S : Selection for the hysteresis application direction (deviation)
 P : deviation value(DIF) applied (+) direction only (OFF in the setting point)
 Pn : deviation value(DIF) applied (±) direction (setting point basis)

dl F : Setting for temperature deviation

In the ON/OFF control, it needs at regular intervals between ON and OFF. If ON/OFF operation is activated frequently, the relay or output contact can be damaging quickly and it occurs the hunting (oscillating, chattering) by virtue of external noise, and so on. To prevent these happenings, you can set up the temperature deviation in order to protect its relay or contact and so on.

when defrost COMP selection **dtP** ← **OFF** on ~ OFF

defrosting time **don** ← **4** 0 ~ 99 (hour)

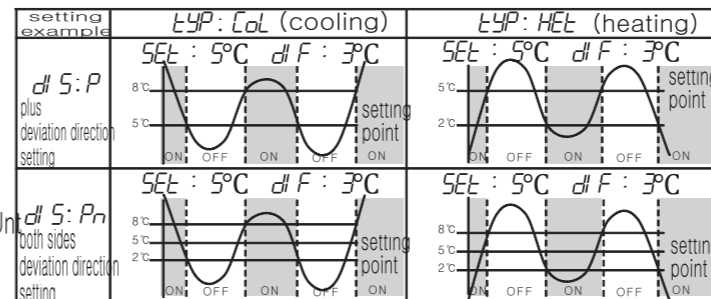
defrost stoppage time **doF** ← **10** 0 ~ 99 (min)

COMP delay time after defrost **ddt** ← **0.00** 0.00 ~ 9.99

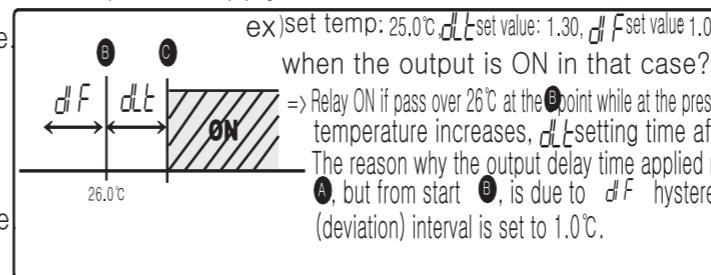
FAN setting **FSt** ← **1** 1 ~ 4

FAN delay time after defrost **Fdt** ← **0.00** 0.00 ~ 9.99 (min, sec)

Lock function **LoC** ← **OFF** on / OFF



dLt : Delay time of the output
 In case of operating the ON/OFF control very often. To protect the operation machinery when re-input of the power supply or momentary stoppage of power supply.



Cor : Correction of the present temp.
 The product itself has no problem, but the correction functioned for that if temp. differs between an error occurs in the input sensor from outside and basic temp.

ex) real temp.: 25.0°C display : 28.0°C if 3°C differs from the real temp.
 Cor : 0.0 → -3.0 if changing like this screen shown in 25.0°C

SEr : in case of a sensor error (o-E, S-E)
 COMP output setting : ON : continue ON
 OFF : continue OFF

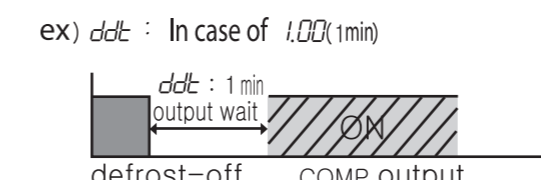
dtP : COMP select Cor : when defrost COMP ON
 CoF : when defrost COMP OFF

don : defrost time
 setting range 1 ~ 99 (hour)
 defrosting at the defrost cycle time
 ex) ddF : 4 (4hours), don : 10 (10min) when setting



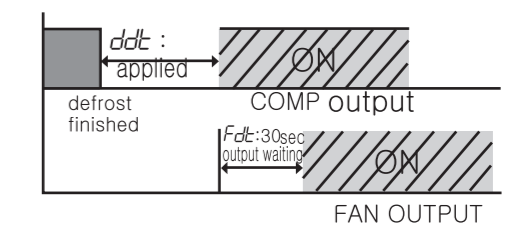
doF : defrost stoppage time
 setting range 0 ~ 99 (hour)
 defrosting at the defrost cycle time

ddt : COMP delay time after defrost
 setting range 0.0 ~ 9.99 (min, sec)
 COMP output is ON : after as delay as the setting time after closing of the defrost



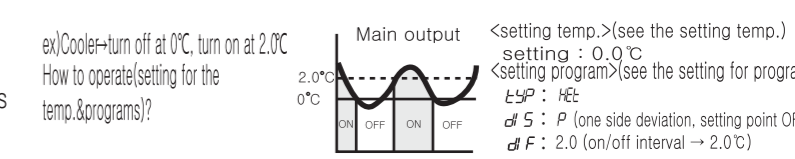
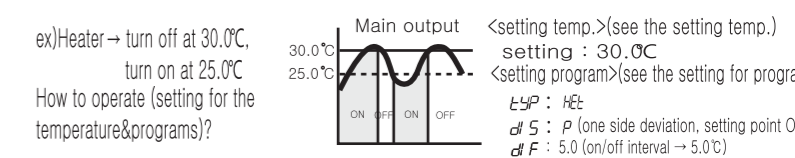
FSt : Fan setting (F1 ~ F4)
 refer to the chart for program setting

Fdt : FAN ON delay time after defrost
 setting range 0.00 ~ 9.50 (min,sec)
 ex) Fdt : 0.30 (30sec)



LoC : Program Lock func. setting
 on : Program Lock
 OFF : Program Unlock

ex) Application



Related items

output	2001CC	2002CC	2003CC	2001TX	2000TX	2003TX	2000RX
temp.	o	o	o	o	o	o	-
alarm	-	o	-	-	o	-	-
defros	-	-	o	-	-	o	-
FAN outpu	-	-	o	-	-	o	-
communi	o	o	o	o	o	o	o

10 How to diagnose a breakdown

Indicating ERROR on using items
 ● This **Err** is the damage of memory data for various of inner-Data due to be get noised strongly from outside while using this items. Please request us A/S by return. Although our controller is designed as the complementary measures regarding these noise from outside, it is not endurable against these noise with endlessly.
 If noise (2kv) disordering become an inflow, the inner-part will be damaged.
 ● When shows these letter **oEr** (open error) **SEr** (short error) error in sensor. Pls check sensor.

*Above Products information can be changed to improve it's quality without any notification When this products use, pls observe the information of caution & Warning due to give rise to disordering.

H. Office : 56, Ballyongsandan 1-ro, Jangan-eup, Gijang, Busan, Republic of Korea
Factory : 56, Ballyongsandan 1-ro, Jangan-eup, Gijang, Busan, Republic of Korea

TEL : +82-51-819-0426
 FAX : +82-51-819-4562

e-mail : conotec@conotec.co.kr
 URL : www.conotec.co.kr

This device works proper operation with:
 surrounding Temp. : 0°C ~ 60°C
 surrounding Humi. : below 80%Rh
 Regular : 220Vac ±10% 50/60Hz

Main products & Development
 - Digital temperature/humidity controller
 - Digital timer, Current/voltage meter
 - The other development products