1. Before you use this, please make sure that you make use of this after you are fully well-informed of the precautions of safety at all cost.
2. If you have any details to confirm during the time to use it, please make a call for the care line for any advice.

⚠ Warning

1. Since this temperature regulator was not produced as a safety device, you must be surely equipped with double safety apparatus if you use it for devices that might cause expected death accidents or property loss.

Danger

1. When applying an electric current, you must not contact with any support insulator at all times.
2. When you check up the input/output or support insulator, you must shut off an input power source. As instantaneous electric shocks can lead to losses of life, make sure to keep its Observance.

⚠ Cautions

1. Make sure to avoid sharply sudden increases of temperature as well as humidity, and excessive shocks.
2. Please make an installation of it without the spot of strong acidity, alkalinity, oil, dust and other direct rays of the sun.
3. It is recommended to use the device of which the temperatures be kept between 0~60℃ compared to surroundings and humidity be within 60%.
4. Please make an installation job after you keep substantial distances from high frequency devices(motor or SCR etc.), High voltage devices, and an engine or generator.
5. The electric wiring of this regulator should be separated from the supporting positions respectively in order to prevent its error done by inductive noise from coming into motion.
6. For a sensor extension, other independent pipe must be used to separate it from input or output source, electric power and supporting lines and you must also be cautioned not to expose the connecting part in the middle.
7. Since relay device installed inside the regulator is used for the signal only, not for the load, you must not use it for the load(Allowable Heater only 100watt/250vac).
8. In case you don't use it for a long time, lightning or thunderbolt to be shock, please make sure whether an input power is kept to shut off.
9. Our company do not take any responsibilities for any damages caused by not observing the following warning or cautions and making mistake to be charged for consumers.

◆. Warranty : This product is warranted against defects in materials and workmanship for a period of one year from the date of purchase. During the warranty period, product determined by us to be defective in form or function will be repaired or, at our option, replaced at no charge. This warranty does not apply if the product has been damaged by accident, abuse, and misuse or as a result of service or modification other than the company. This warranty is in lieu of any other warranty expressed or implied.

1. If this regulator becomes out of order due to excessive shock or sharp temperature rises.
2. If a certain product was disassembled or remodelled for other perposes.
3. If it is out of order due to the fire or other natural catastrophe.

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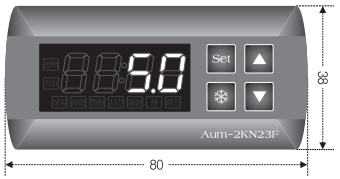
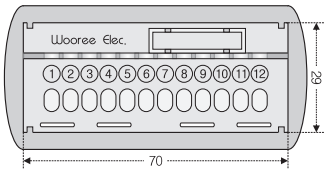
ISO CE INNOBIZ

Front view

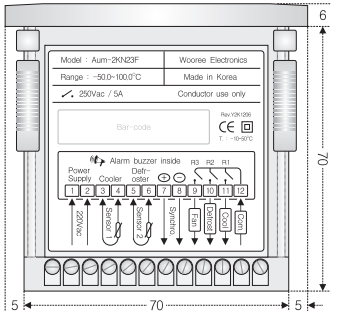


Behind view

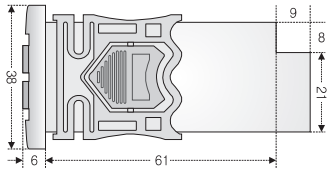


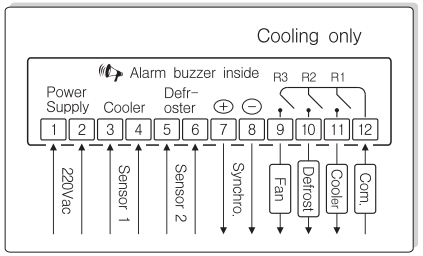
Unit : mm
Scale :1/2

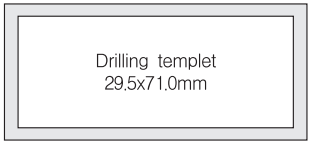
Top view

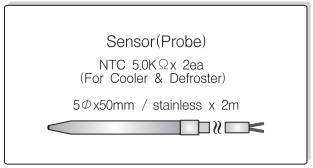


Side view









◆. Model Aum-2KN23F : For Cooling only

1. For exclusive use of Cooling Comp., Fan, Defroster, Alarm buzzer can be selected.
2. When defrost is operated interlock, Please wire terminal numbers 7 and 8 to the same number terminals. Wired controllers are operated with defrost start and initial cooling times simultaneously interlocked.

Defrosting	Sensor(1) fault	Sensor(2) fault	No working
dEFr	Err1	Err2	OFF

Nos	Status	Range	Functional Description	Apply	Initial value
1.	Selection value	-50.0 ~ 100.0°C.	Estimated keeping temperature SV	Chamber	5.0
2.	Differential V.	00 ~ 12.7°C	S.V(1)±Dif. = Hysterisis Dif.	Select'n V.	1.5
3.	Calibration	-6.3 ~ 6.3°C	Temperature Calibration Ca	Present temp.	0.0
4.	Time Delay	Pr00 ~ Pr15min..	Time Delay (Cooler Protect=Pr)	Cooling delay	Pr0.0
5.	Alarm High	-50.0 ~ 100.0°C.	Alarm highest temp. limit -HI-	Alarm	50.0
6.	Alarm Low	-50.0 ~ 100.0°C.	Alarm lowest temp. limit -LO-	Alarm	-25.0
7.	Alarm delay	ALOF/A000~A254min.	A000~A254 / ALOF=Alarm OFF	Alarm	A000
8.	Defrost method	HEAt / Hot.	HEAt=Electric Heater / Hot gas.	Defrost	HEAt
9.	Defrost Interval	Int. / rtc.	"Int"=Interval/"rtc"=Real time control.	Defrost step	Int
10.	Defrost temp.	E00.0 ~ E37.7°C	Estimated defrost End temp. (E=End)	Defrost stop	E08.0
11.	Defrost time.	Ft01 ~ Ft63min.	Estimated Defrost Finish time (Ft).	Defrost stop	Ft30
12.	Drain time	dr00 ~ dr10min.	Droplet water dry. (Dr=drain)	Draining time	dr01
13.	Fan delay	Fd00 ~ Fd15min.	Defrost End ⇨ Fan delay time	Fan 지연	Fd00
14.	Fan mode	FLIn / FULL.	FLin=Cooling+Fan/ FULL(Defrost N/A)	Fan 작동	FLnA
15.	Time Setting	00:00 ~ 24:00	Real time adjusting.	Present time	12:34
16.	Visual temp.	CELS / FAhr.	CELSius / Fahrenheit	Display	CELS
17.	Lock mode.	SAFE / UnSAFe	SAFE / UnSAFe	Data hold	USAF
18.	ON /OFF	on / OFF	Working "ON/OFF"	-----	on

Defrosting Data

1. In cases when the defrost and cooling time are proceeding simultaneously, the terminal 7, 8 need to be connected with the same numbers. The controller that starts defrost first and the controller that is interlocked for defrost are to start the defrost at the same time. After completing the drain time of last controller, the controllers that are interlocked for defrost are to be switched over to cooling mode at the same time.

2. In case of group interlock, for the defrost cycle, select either the same Interval or time.
3. During operation, the "▲" button shows the Cooler side(sensor1) and the "▼" button shows defrost side(sensor2) temperature.

4. By defrost, drainage and by delaying 10-minutes, it is indicated with "dEFr". Even if it's within 10-minutes, when the chamber temperature reaches the selected temperature(SV) after drainage, it is changed to the present temperature(Sensor1).
5. Manual defrost, "❄" button is pressed for 5 seconds, defrost becomes "ON/OFF".

◆. Descriptions for all the functions.

★. Each function needs to be selected by useing the "SET" button and after setting each value by useing the "▲/▼" button. The inputting of the modified values for each function must be completed by pressing the "SET" button. After 20-seconds or when the "SET" button is pressed every time. The temperature is returned back to chamber temperature.
★. When the "SET" button is pressed while the "❄" button is pressed, each function becomes set in the reverse direction.

1. Selection value : Please set a proper temperature for the chamber.(S.V.)
2. Differential value : Using S.V.(1) as base, high or low is applied.
   Except, press "SET" button for 5-seconds to delect this function.
   (At this time, "SV" LED is maintained in "ON" state.(Dif)
3. Calibration : It corrects for present temperature base.(Ca.)
4. Time Delay(4) : Delay time is applied from the time if cooler "OFF".
   Please set for more then 1-minute in normal operations.(T.D.)

5. Alarm High : Alarm High or Low point temperature is set.(-HI-)
6. Alarm Low : Alarm Low point temperature is set.(-LO-)
7. Alarm Delay : Alarm delay time is applied from Alarm "ON" time. When Alarm relay and buzzer are turned "OFF", after A254. set to "AL:OFF". Except, if sensor malfunctions, It operated immedeatedly.(A000) Alarm stop when "▲" button is pressed and it is automatically reset within the High and Low selected range.

8. Defrosting method : set defrost method(Electric HEAter or Hot gas).
9. Defrosting Interval : set defrosting "Interval" or "Real time control".(Refer to below data)
10. Defrost temp. : set a proper temperature for the defrost termination.
11. Defrost time : set a proper time for the defrost termination.
12. Drain time : this is drying time of the water remaining in the Evaporator after the termination of defrost. Defrost "Interval" restarts from the drain termination time.

13. Fan delay : After the termination of draining, from initial Cooling time the Fan delay time is applied(Fd00)
14. Fan mode : "FLIn=Link" interlocks Fan and cooler, and "FULL" operates Fan during the entire process. Except during defrost of drain(drxx) are stopped.

15. Real time : Please set time after completing all the setting values.
16. Celsius/Fahrenheit : Temp. is displayed with Celsius or Fahrenheit depending on the setting.
17 Lock : when protecting the setting Data, if it is set for "SAFE=Lock", then it is impossible to correct. When correcting "UnSAFe=Unlock" mode must be checked before resetting.
18. ON/OFF : please select, if individual operation or stop is needed.(on~0FF)

Method for defrost Int./Real time setting

★. Int ▲/▼ rtc (SET) = select among the Interval/Real time controls.
1. Int (SET) 0.00 ~ 24:55 (SET) Select the defrost interval(/hour)
2. rtc (SET) St:01 ~ St:99 (SET) Select a number(Step) among 24hours
St:01 / 00:00 (SET) when the step number and time are flashing alternatively, after selecting time(/10-minutes)
Press (SET), next (SET) to select the time sequentially.