Digital Humidity Controller (FX3H SERIES)

PreCaution for Use

1. This product may cause an electric shock in handling. Please do not attempt to open it with power turned on.
2. This product should be installed in a place fixed secured by a rack or panel.
3. This product can be used under the following environmental condition
   ① Indoor ② Pollution Degree ③ At an altitude of 2000m or below ④ Installation Category Ⅱ
4. To turn on or turn off power supply for this product, please the circuit breaker or switch of a standard product of IEC 60947-1 or IEC 60947-3 product and install it within a close distance allowing convenient operation by user.
5. Please be understood that if this product is dismantled or modified discretionary, after sales service will not be able to be provided.
6. An output wire to be used for this product should be inflammable grade FV1 (V-1 grade or above), he thickness of the wire should be AWG No. 20 or above. (0.50㎟)
7. In order to prevent it from an inductive noise, please maintain the high-voltage wire and power wire separated.
8. Please avoid installing the product in a place where a strong magnetism, noise, severe vibration and impact exist.
9. When extending the sensor wire, use a shield wire and do not extend it unnecessary long.
10. The sensor wire and signal wire should be away from the power and load wires using conduits separately installed.
11. Please avoid using the product near a device generating strong high frequency noise (high-frequency welding machine, high-frequency sewing machine, high-frequency radiotelegraph, high capacity SCR controller)
12. Product's damages other than those decribed in the guarantee conditions provided by the manufacturer shall not be respoinsible by us.
13. Please use with being attached to a dual safety device in case of using for controlling instruments which could be effective to human life or property (eg: controlling atomic energy, medical instruments, cars, trains, flights, burners, amusement instruments or safety machinery)

※ The Aforementioned precautions must be observed, and if you fail to do so, it may cause a product's breakdown.

Basice Specification

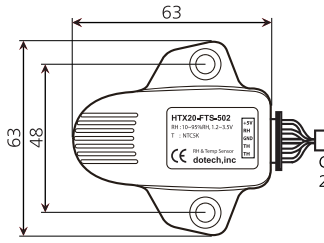
Model	FX3H
Power	AC100 - 240V ~ , 50/60Hz
Current	MAX 4VA
Connector	Screw Bolt Connector (1.5㎟ Wire Use Possibility)
Input / Output	Relay output 1p (OUT1 : 250Vac/16A)
	Humidity 1~4V Voltage input 1p.
Operation	Temp. -10~50℃ (No condensation only)
Storage	Temp. -20~60℃, Humidity Under 90%RH
Sensor	HTX20-FTS-502 (Humidity sensor of Voltage output type), HTX3515
Display Range	0.0 ~ 100.0%RH

Order Information

FX3H - 00 : Basic Model

Accessory Information

HTX20-FTS-502 Temp.& Humidity sensor (Humidity output 1~4V, Temp. output NTC5K)



Humidity range: 0~100%RH
Temp. range: -10~60℃
Humidity output 1~4Vdc
output NTC5K B3324K

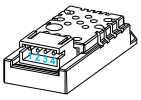
Cable length 2M

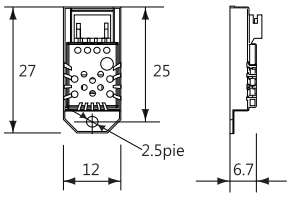
Red : Humidity sensor power+5V
Yellow : Humidity measurement signal output
Black : Humidity sensor power 0V
white : Temperature sensor(NTC5K)
Blue : Temperature sensor(NTC5K)

HTX3515 Humidity sensor (Humidity output 1~4V)

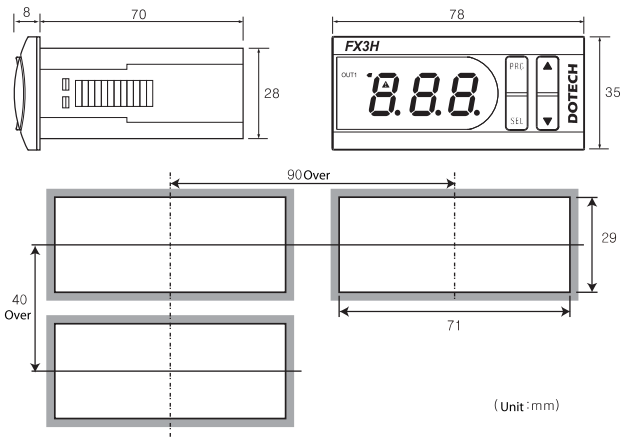
Humidity range: 0~100%RH
Humidity output 1~4Vdc
Connection Cable length 3M

1: Black : Humidity sensor power 0V
2: Red : Humidity sensor power+5V
4: White : Humidity measurement signal output

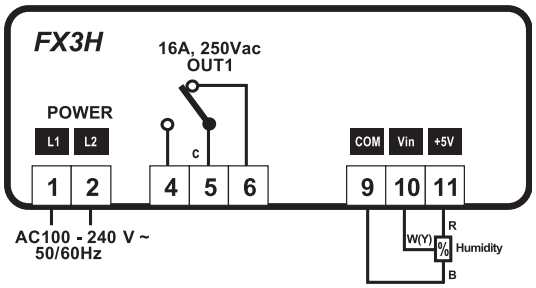




Dimensions and Panel Cut-Out Form



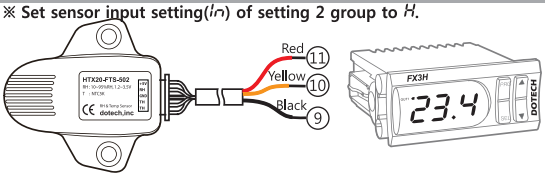
Connection Diagram



- OUT1 : Dehumidification/Humidification#1 ON/OFF output
- COM : Signal input common terminal
- Vin : Humidity sensor input
- +5V : Humidity sensor power (5Vdc)

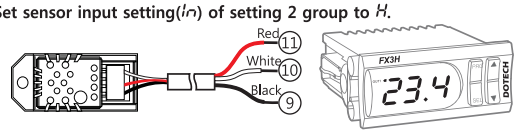
When it use for Humidity control(Apply HTX20-FTS-502 Humidity sensor)

※ Set sensor input setting(in) of setting 2 group to H.

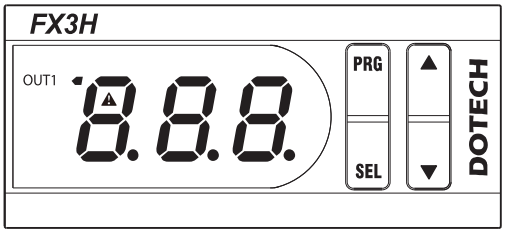


When it use for Humidity control (Apply HTX3515 Humidity sensor)

※ Set sensor input setting(in) of setting 2 group to H.



Constitution (Function of Display Lamp and Button)



OUT1 ◀	Turn on when output #1 is ON (Flickering at standby)
⚠	ON at trip, Flickering at alarm

PRG	Use at program setup	SEL	Execute selected menu or Input setup value
▲	Move between menus & Increase setup value	▼	Move between menus & Decrease setup value
PRG ▼	**Initializing setup value** If pushing for 10 sec. at the same time , setup value is initialized		

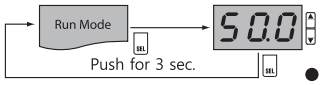
Simple Trouble Check Point

※ FX3H controls by measured value which is detected by sensor.
If sensor fault alarm occurred as following, please check wiring with sensor.

HoP	Humidity Sensor Open Wire	HLL	Minimum range for Humidity use
HSt	Humidity Sensor Short Circuit	HHH	Maximum range for Humidity use
SYS	If the stored value is changed randomly, please re-setup after parameter initialization.		

※ In case of the above-mentioned error, it will be normally operated with cancelling error status if the reason of error is solved.

Temperature Setting Group

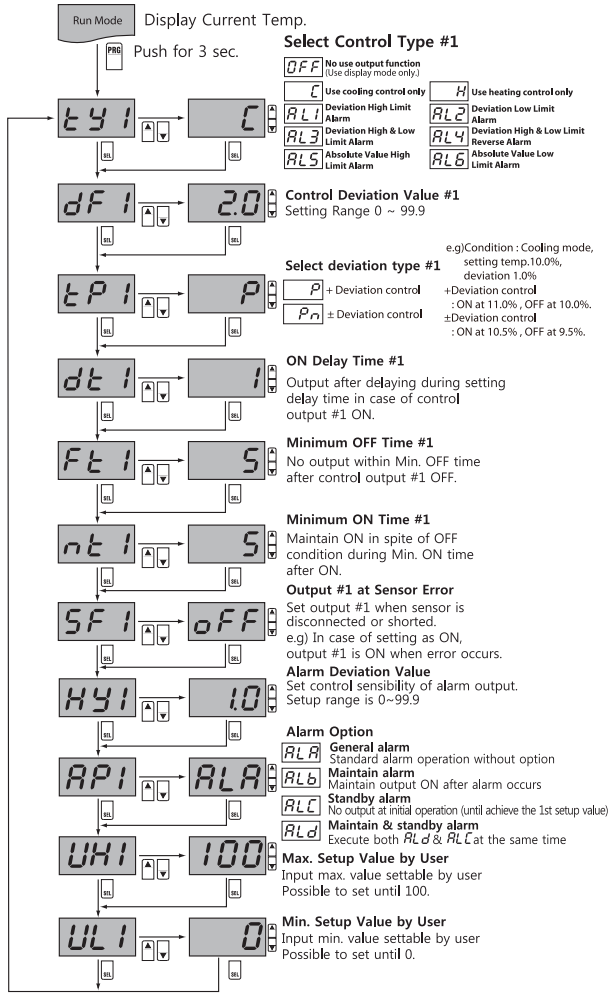


Output #1 setup value
Set output #1 setup value.

● If there's no input made for a period of 60 seconds during the setting, then it returns back to the run mode automatically.

● The set point is indicated by flickering at every 0.5 seconds intervals and this set point can be established by using the ▲ key or ▼ key.After changing set point, it displays the current temp.

Setting 1 Group



Select Control Type #1

- OFF — No use output function (Use display mode only.)
- C — Use cooling control only
- H — Use heating control only
- AL1 — Deviation High Limit Alarm
- AL2 — Deviation Low Limit Alarm
- AL3 — Deviation High & Low Limit Alarm
- AL4 — Deviation High & Low Limit Reverse Alarm
- AL5 — Absolute Value High Limit Alarm
- AL6 — Absolute Value Low Limit Alarm

Control Deviation Value #1
Setting Range 0 ~ 99.9

Select deviation type #1

- P — + Deviation control
- Pn — ± Deviation control

e.g)Condition : Cooling mode, setting temp.10.0%, deviation 1.0%
+Deviation control : ON at 11.0% , OFF at 10.0%.
±Deviation control : ON at 10.5% , OFF at 9.5%.

ON Delay Time #1
Output after delaying during setting delay time in case of control output #1 ON.

Minimum OFF Time #1
No output within Min. OFF time after control output #1 OFF.

Minimum ON Time #1
Maintain ON in spite of OFF condition during Min. ON time after ON.

Output #1 at Sensor Error
Set output #1 when sensor is disconnected or shorted.
e.g) In case of setting as ON, output #1 is ON when error occurs.

Alarm Deviation Value
Set control sensibility of alarm output.
Setup range is 0~99.9

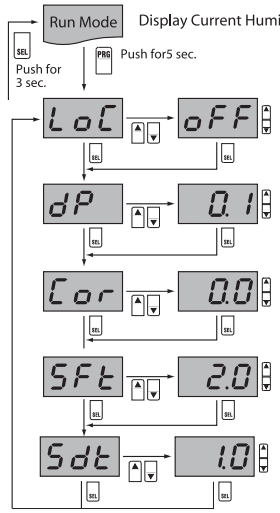
Alarm Option

- ALA — General alarm: Standard alarm operation without option
- ALb — Maintain alarm: Maintain output ON after alarm occurs
- ALC — Standby alarm: No output at initial operation (until achieve the 1st setup value)
- ALd — Maintain & standby alarm: Execute both ALd & ALC at the same time

Max. Setup Value by User
Input max. value settable by user
Possible to set until 100.

Min. Setup Value by User
Input min. value settable by user
Possible to set until 0.

Setting 2 Group



Select Lock Function

- oFF — Lock cancel
- LC1 — Setting 1group
- LC2 — Setting 1, 2 group lock
- LC3 — Setting 1, 2group, temp. setup lock

Decimal Point Display

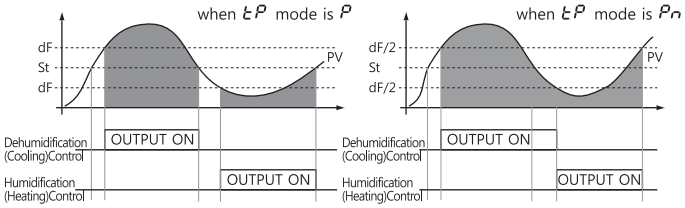
- 0.1 — Display 1st decimal place
- 1 — Display computing of 1/10

Correct PV (Present value)
Correct the accuracy of sensor
e.g) If displayed humidity is 19% and I/O humidity is 18%, it is corrected by inputting -1.0%

Sensor Input Filter
In case of frequent hunting of the present value, it is corrected by increasing filter value.

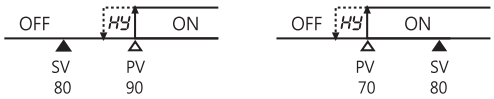
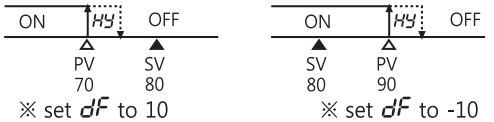
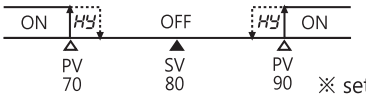
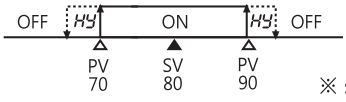
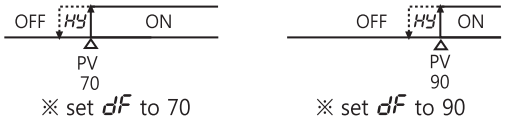
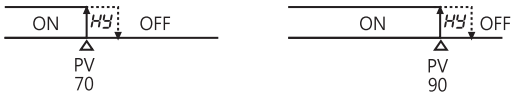
Sensor Value Display Cycle
Set the current temp. display cycle.

Deviation Control (C - Dehumidification, H-Humidification)



Alarm Operation Group

* SV : St1 * dF : dF1 * HY : HY1

AL-1 Deviation High Limit Alarm	 ※ set dF to 10 ※ set dF to -10 Output is ON when the deviation between PV value and SV value is higher than setup value of control deviation
AL-2 Deviation Loew Limit Alarm	 ※ set dF to 10 ※ set dF to -10 Output is ON when the deviation between PV value and SV value is lower than setup value of control deviation.
AL-3 Deviation High & Low Limit Alarm	 ※ set dF to 10 Output is ON when the deviation between PV value and SV value is higher or lower than setup value of control deviation . Control deviation is set up at dF in setting 1 group. If dF value ≤ 0, it is always OFF.
AL-4 Deviation High & Low Limit Reverse Alarm	 ※ set dF to 10 Output is OFF when the deviation between PV value and SV value is higher or lower than setup value of control deviation . Control deviation is set up at dF in setting 1 group. If dF value ≤ 0, it is always OFF.
AL-5 Absolute Value High Limit Alarm	 ※ set dF to 70 ※ set dF to 90 Output is ON when PV value is higher than or equal as control deviation setup value. Alarm temperature is set up at DF in setting 1 group. It works regardless of SV(Set value).
AL-6 Absolute Value Low Limit Alarm	 ※ set dF to 70 ※ set dF to 90 Output is ON when PV value is lower than or equal as control deviation setup value. Alarm temperature is set up at DF in setting 1 group. It works regardless of SV(set value).

Alarm Option Group

CODE	OPERATION TITLE	DESCRIPTION FOR ALARM OPTION OPERATION
ALA	General alarm	Standard alarm operation without option
ALb	Maintain alarm	Maintain output ON after alarm occurs
ALC	Standby alarm	No output at initial operation (until achieve the 1st setup value)
ALd	Maintain & standby alarm	Execute both ALb & ALC at the same time

※ Reboot or push PRG button in 2 successive time when alarm output is removed.