

FX3H

User's Manual



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Cautions

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 2 ③ At an altitude of 2000m or below
 4. Power input must be within the designated ranges.
 5. 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.
 6. Please be understood that if this product is dismantled or modified discretionary, after sales service will not be able to be provided.
 7. An output wire to be used for this product should be inflammable grade FV1 (V-1 grade or above), the thickness of the wire should be AWG No. 20 or above(0.50mm²).
 8. In order to prevent it from an inductive noise, please maintain the high-voltage wire and power wire separated.
 9. Please avoid installing the product in a place where a strong magnetism, noise, severe vibration and impact exist.
 10. When extending the sensor wire, use a shield wire and do not extend it unnecessary long.
 11. The sensor wire and signal wire should be away from the power and load wires using conduits separately installed.
 12. 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)
 13. Product's damages other than those described in the guarantee conditions provided by the manufacturer shall not be responsible by us.
 14. If this unit is used to control machineries (Medical equipment, vehicle, train, airplane, combustion apparatus, entertainment, processing and transportation equipment, elevator and various safety device etc.) enabling to effect on human or property, it is required to install fail-safe device.
- ※ The Aforementioned precautions must be observed, and if you fail to do so, it may cause a product's breakdown.
 ※ The specifications, dimensions, and etc. are subject to change for enhancement without a prior notice.



Technical Specifications

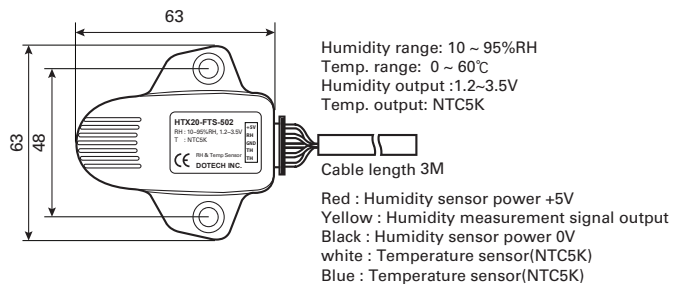
Power	100~240Vac, 50/60Hz
Current	MAX 6 VA
Connection	Screw Bolt Connector(1.5mm ² Wire Use Possibility)
Output	Relay Output 1 Point (250Vac / 16A)
Input	Humidity 1 Point (HTX20-FTS-502, HTX3515)
Dimensions	78(W)mm X 35(H)mm X 78(D)mm
Operation	Temperature: -10 ~ 50°C, Humidity: Below 90%RH
Storage	Temperature: -20 ~ 60°C, Humidity: Below 90%RH

Ordering guide

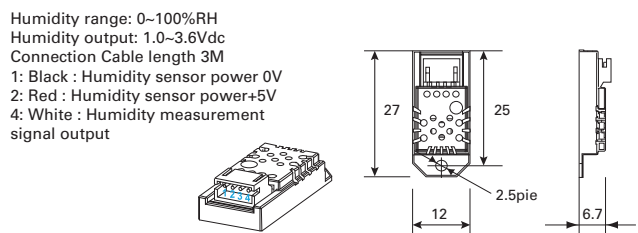
FX3H-00	Basic Model
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Accessories

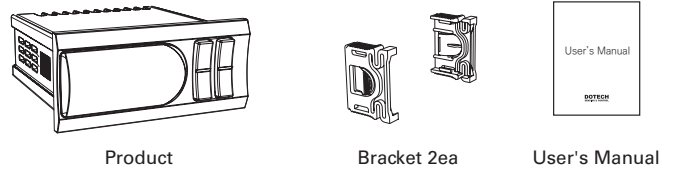
HTX20-FTS-502 : Temp.& Humidity sensor



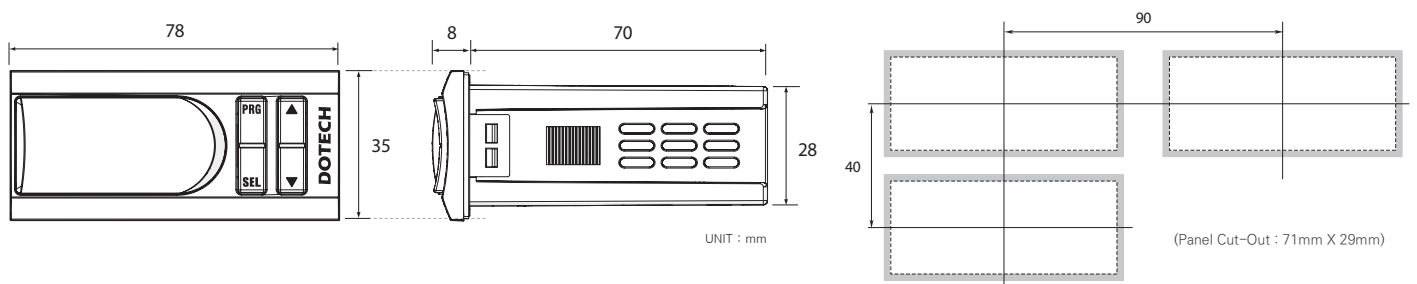
HTX3515 : Humidity sensor



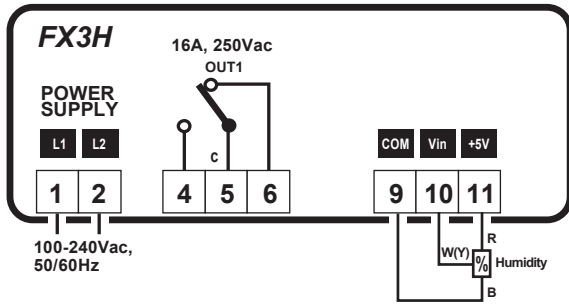
Components



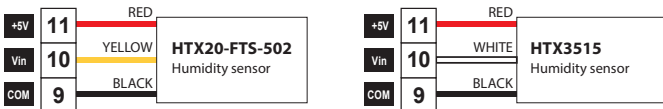
Dimensions and Panel Cut-Out Form



Wiring

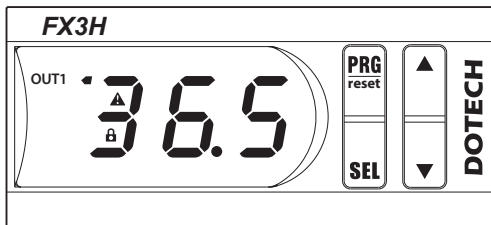


Sensor connection



NO	Connection	Description
1	POWER	100-240Vac, 50/60Hz
2		
4	OUT1	Relay output OUT1 when closed
5		Common signal
6		Relay output OUT1 when open
9	COM	Common signal
10	Vin	Humidity sensor input
11	+5V	Humidity sensor power (5Vdc)

Constitution (Function of Display Lamp and Button)



LED	OUT1	Turn on when output #1 is ON (Flickering at standby)
	▲	ON at trip, Flickering at alarm
	🔒	Parameter set up locked
	PRG	Use at program setup
	SEL	Execute selected menu or Input setup value
BUTTON	▲	Move between menus & Increase setup value
	▼	Move between menus & Decrease setup value
	PRG + ▼	If pushing for 10 sec. at the same time, setup value is initialized

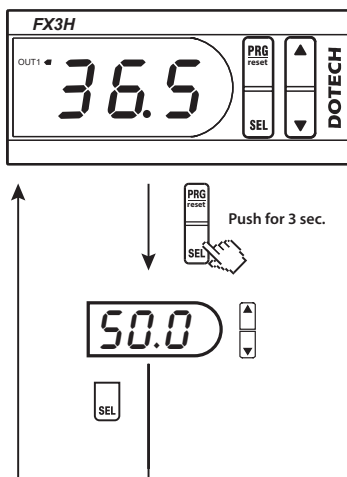
Trip / Alarm Messages

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

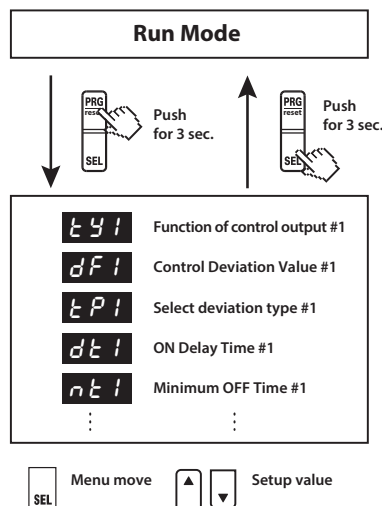
Code	Menu	Description / Instructions	Response at Detection	Reset Type
555	Internal Parameter Error	In Case of change of set value by an unknown case.	Immediate Stop	Automatic Reset
HOP	Humidy Sensor Open	In case of Input sensor open wire(Normal operation after sensor connecting)	Immediate Stop	Automatic Reset
HSE	Humidy Sensor Short	In case of Input sensor short circuit	Immediate Stop	Automatic Reset
HLL	Humidy Lower Input	Lower sensor input than measuring range	Immediate Stop	Automatic Reset
HHH	Humidy Higher Input	Higher sensor input than measuring range	Immediate Stop	Automatic Reset

Parameter

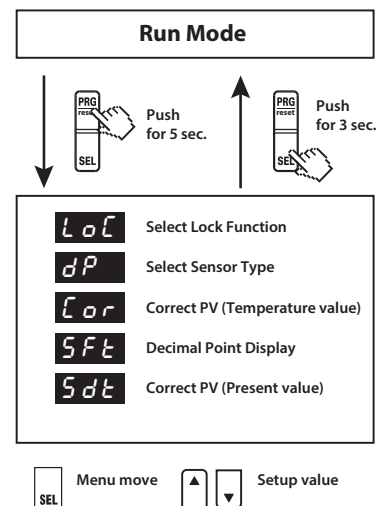
Humidy Setting Group



Setting 1 Group



Setting 2 Group



Humidity Setting Group (SEL Button Push for 3 Sec.)

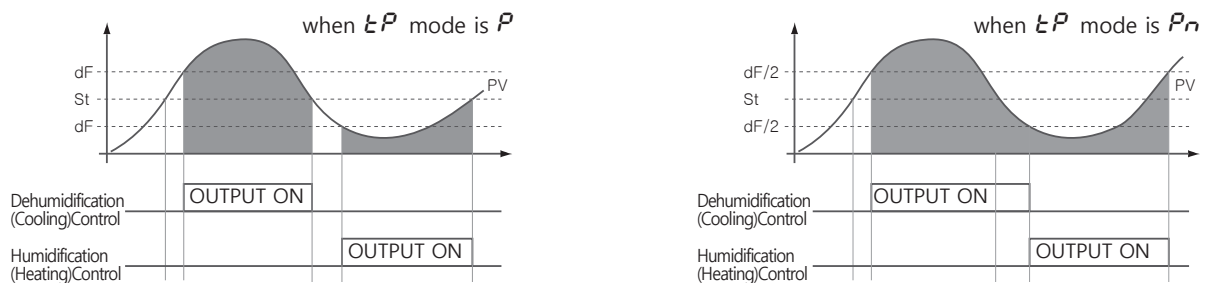
Menu	Code	Unit	Step	Min	Max	Default	Custom Setup
Output #1 setup value	<i>SEI</i>	%	0.1	<i>ULI</i>	<i>UHI</i>	<i>50.0</i>	

Setting 1 Group (PRG Button Push for 3 Sec.)

No	Menu	Code	Unit	Step	Min	Max	Default	Custom Setup
1	Select Control Type	<i>LYI</i>	<i>oFF</i> : Display <i>℄</i> : Cooling mode <i>H</i> : Heating mode <i>RL1</i> : Deviation high limit alarm <i>RL2</i> : Deviation low limit alarm <i>RL3</i> : Deviation high, low limit alarm <i>RL4</i> : Deviation high, low limit reverse alarm <i>RL5</i> : Absolute value high limit alarm <i>RL6</i> : Absolute value low limit alarm				<i>℄</i>	
2	Control Deviation Value	<i>dFI</i>	%	0.1	0.1	999.9	<i>2.0</i>	
3	Select Deviation Value	<i>℄PI</i>	<i>P</i> : + Deviation <i>Pn</i> : ± Deviation				<i>P</i>	
4	ON Delay Time (※1)	<i>dEI</i>	Sec	1	0	999	<i>1</i>	
5	Minimum OFF Time (※2)	<i>F℄I</i>	Sec	1	0	999	<i>5</i>	
6	Minimum ON Time (※3)	<i>n℄I</i>	Sec	1	0	999	<i>5</i>	
7	Output at Sensor Error (※4)	<i>SFI</i>	<i>oFF</i> <i>On</i>				<i>oFF</i>	
8	Alarm Deviation Value	<i>HYI</i>	%	0.1	0.1	999.9	<i>1.0</i>	
9	Alarm Option	<i>RPI</i>	<i>RLA</i> : General alarm, <i>RLb</i> : Maintain alarm, <i>RLC</i> : Standby alarm, <i>RLd</i> : Maintain & standby alarm				<i>RLA</i>	
10	High limit by user setup	<i>UHI</i>	%	1	<i>ULI</i>	<i>105</i>	<i>100</i>	
11	Low limit by user setup	<i>ULI</i>	%	1	<i>-50</i>	<i>UHI</i>	<i>0</i>	

- (※1) ON delay time : It outputs after setting delay time in spite of output condition. During ON delay time, output lamp is turned on with output after flickering in fast cycle
- (※2) Min OFF Time : It lets output not occur within min. OFF time after it is turned off. During min. OFF time, output lamp is turned on with output after it flickers every 1 second intervals
- (※3) Min ON Time : It is for avoiding frequent ON/OFF of control output and maintains ON condition in spite of OFF condition during Min ON Time after being turned on. (In case of sensor error, OFF at once)
- (※4) Output at Sensor Error : In case of sensor error such as open wire/short, it sets ON/OFF status of the related output.

Deviation Control



Alarm Operation Group (* SV : 5t1 * dF : dF1 * HY : HY1)

RL1		<p>Deviation High Limit Alarm Output is ON when the deviation between PV value and SV value is higher than setup value of control deviation</p>
RL2		<p>Deviation Low Limit Alarm Output is ON when the deviation between PV value and SV value is lower than setup value of control deviation.</p>
RL3		<p>Deviation High & Low Limit Alarm 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.</p>
RL4		<p>Deviation High & Low Limit Reverse Alarm 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.</p>
RL5		<p>Absolute Value High Limit Alarm 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).</p>
RL6		<p>Absolute Value Low Limit Alarm 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).</p>

Alarm Operation Group

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

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

Setting 2 Group (PRG Button Push for 5 Sec.)

No	Menu	Code	Unit	Step	Min	Max	Default	Custom Setup
1	Lock Function	L o L	oFF : Lock cancel L L 1 : Setting 2 group lock L L 2 : Setting 1,2 group lock L L 3 : Setting 1, 2 group, Humidity setup lock				oFF	
2	Decimal Point Display (※1)	dP	0.1 : Decimal point display				0.1	
3	Sensor Correction	L o r	%	0.1	-19.9	19.9	0.0	
4	Sensor Input Filter (※2)	S F t	Sec	0.1	0.1	5.0	2.0	
5	Sensor Value Display Cycle	S d t	Sec	0.1	0	5.0	0.5	

※1) PV Decimal Point Display : In case of setting as '1', it displays the current value with cutting the decimal place.

※2) Sensor Input Filter Value : It avoids hunting by giving temperature measuring delay.