Temperature & Humidity Controller Manual

TX3-S22

1.GENERAL WARNING

1.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Check the application limits before proceeding.

1.2 SAFETY PRECAUTIONS

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation.
- Warning: disconnect all electrical connections before any kind of maintenance.
- Fit the probe where it is not accessible by the End User. The instrument must not be opened.
- If failure or faulty operation send the instrument back to our company with a detailed description of the fault.
- Consider the maximum current which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, load s and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of application s in industrial environments, the use of mains filters in parallel with inductive loads could be useful.

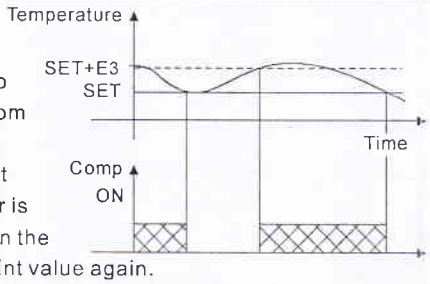
2. GENERAL DESCRIPTION

It is suit for automatic humidifier. It provides two relays output to drive compressor and humidifier, one humidity sensor input to control humidity and one room sensor input for room temperature. Special parameter can be easilyprogrmmed through the keyboard.

3. CONTROLLING LOADS

3.1 THE COMPRESSOR

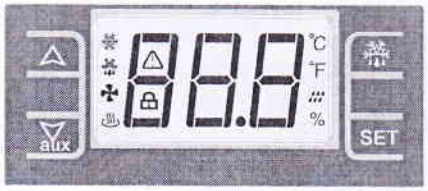
The regulation is performed according to the temperature measured by the thermostat pro be with a positive differential from the set point: if the temperature increases and reaches set point plus differential the compressor is started and then turned off when the temperaturereaches the set point value again.



In case of fault in the thermostat probe the start and stop of the compressor are timed through parameters "**E8**" and "**E9**" . And display "LL" or "HH"

3.2 Humidifier

4. KEYBOARD



SET To display target set point; in programming mode it selects a Parameter or confirm an operation.

(**DEF**) **Start or stop defrost**。

△ (UP) Increase the parameter value.

▽ (**DOWN**) Decrease the parameter value.

KEY COMBINATIONS:

△ + ▽ Resume the parameters to factory defaults

4.1 USE OF LEDS

Each LED function is described in the following table.

LED	MODE	FUNCTION
❄	**ON**	Compressor enabled
❄	**Flashing**	Compressor start delay
≈	**ON**	Humidifier enabled
❄	ON	Defrost enabled
❄	**Flashing**	Drip time or display lock time
SV	**ON**	Display mode is set tempearture
△	**ON**	Alarm at probe temperature overlimit
🔒	**ON**	Parameter locking
℃ %	ON	Temperature / Humidity unit

4.2 HOW TO SEE THE DEFROST TEMPERATURE

Push ≜ key and hold for 6S,the evaporator temperature is displayed, after 10s the cold-room temperature is resumed to be displayed.

4.3 HOW TO SEE THE SETPOINT

1,Push and immediately release the **SET** key: the display will show th Set point value;

2,Push and immediately release the **SET** key or wait for 5 seconds to display the probe value again.

4.4 How to check humidity set point

1、Push **SET** and release immediately, to show the set point

2、Push **SET** and release immediately,
or wait for 10s to display acutal humidity

4.5 How to change humidity set point

1、Push **SET** and release immediately: flashing display set point

2、Then Push △ or ▽ to change humidity value;

3、Push **SET** again or wait for 10s to save new set value and back t display acutal humidity.

4.6 Start or stop defrost by manual

Push ❄ key for 6s to start or stop defrost by manual

4.7 How to resume to factory default

Push ▽ for 1s, then push △ for 6s at same time, flashing display, all parame will resume to factory default

4.8 How to revise parameter

1、Push **SET** for 6s, enter pragramming mode(**PA flashing**);

2、Push **SET** again to display E1、E2 …… CPA、E1 by cycle, push ▽ or △ to display and revise its value

3、Wait for 30s to exit and save new set value

Notes: If no correct password for pragramming mode (display PA), the parameter could be checked, but could not be changed.

4.9 How to change menu password

The CPA value can be checked and revised only after you input correct passw in pragramming mode (Display PA). After enter pragramming mode "**CPA**" push △ or ▽ to display and revise password. Press ❄ (the key on top of **S** to confirm and save new password.(If "**CPA**" value is set to "**00**" ,mea to cancel password locking)

5. Parameter

Password

PA **Menu password**: The code what must be inputted(when flashing **PA**) to change the parameter, namely the "**CPA**" value.

CPA **Password revision**: It means locking cancelled if CPA is set "0

E3 Differential: Intervention differential for set point. Compressor Cut IN is Set Point Plus Differential . Compressor Cut OUT is when the temperature reaches the set point.

E1 Minimum set point: Set the minimum acceptable value for set point.

E2 Maximum set point: Set the maximum acceptable value for set point.

E4 Outputs activation delay at start up: Minimum interval between the compressor stop and the following restart.

E5 Cold-room probe calibration: Allows to adjust possible offset of the cold-room probe.

E6 Defrost probe calibration: Allows to adjust possible offset of the defrost probe.

E8 Compressor ON time with faulty probe: Time during which the compressor is active in case of faulty thermostat probe.

E9 Compressor OFF time with faulty probe: Time during which the compressor is OFF in case of faulty thermostat probe.

h1 Set humidity: set value for humidifier starting

h2 Humidity hystersis: when probe humidity ≤ (controlled humidity − humidity hystersis) , Humidifier work; probe humidity ≥ controlled humidity, humidifier shut off.

h3 Humidity probe adjusting: provide Humidity compensation for probe

DISPLAY

C0 Accuracy: 00=±1℃; 01=±0.1℃

C1 Display mode: 00= display probe value;
01=display set temperature

DEFROST

F4 Temperature displayed during defrost: (00 = real temperature; 01 = temperature at defrost start; 02 = "DEF" label), if choose "00" or "01" , it will continue displays this temp.or lable for 20 min.

F6 Drip time: Time interval between reaching defrost termination temperature and the restoring of the control's normal operation. This time allows the evaporator to eliminate water drops that might have formed due to defrost.

F2 Interval between defrost cycles: Determines the time interval between the beginning of two defrost cycles.

F02 Defrost duration calculating: =0, by interval
=1, defrost start after compressor run F2 time (memory when power off)

ALARMS

H1 Maximum temperature alarm: When this temperature is reached the alarm is enabled, after the delay time.

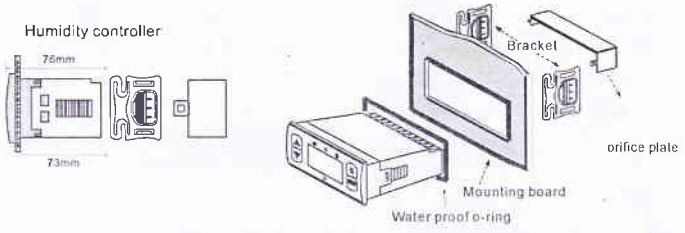
H2 Minimum temperature alarm: When this temperature is reached the alarm is enabled, after the delay time.

H5 Alarm delay at Initial start up : Time interval between the detection of an alarm condition and alarm signalling at Initial start up.

H6 Temperature alarm delay: Time interval between the detection of an alarm condition and alarm signalling.

6. INSTALLING AND MOUNTING

Product dimension: 78 (L) ×35 (W) ×76 (H) mm;
Mounting dimension : 71 (L) ×29 (W) mm
Main controller fixes with special bracket, water proof in front panel
Enviroment temperature should be-10~+60℃, and avoid to strong vibrations, corrosive gases, excessive dirt or humidity place



8. TECHNICAL DATA

1、Housing: ABS lightgrey antiflaming material
2、Protection level: IP20;
3、Front protection level: IP65;
4、Power supply: 230V/AC±10%, 50/60Hz;
5、Power consumption: <5W;
6、Sensor: 1 humidity sensor; 1 NTC
7、Range of humidity display: 01 ~ 99%;
8、Range of humidity control: 01 ~ 99%;
9、Factory default : 75%;
10、Accuracy: ±1%;
11、Software class: A ;
12、Relative humidity: 20~85% (no frost) ;
13、Operating temperature: -10~+60℃ ;
14、Storage temperature: -30~+80℃;
15、Connections: wire (Screw terminal block≤2.5²mm);
16、Relay ouput:
Compressor: N.O. 30A/240V~, 50/60Hz;
Humidifier: N.O. 10A/240V~, 50/60Hz;

9. FACATORY DEFAULT SETTING

Label	Name	Range	Defau
PA	Menu password	00 ~ 99	00
E1	Lower set point limit	-45℃ / -40℉ ~ Set temperature	-35℃
E2	Higher set point limit	Set temperature ~ 45℃ / 120℉	20℃
E3	Temperature hysteresis	01 ~ 10℃ 01 ~ 36℉	04℃
E4	Comp. Start delay time	00 ~ 10Min	02
E5	Comp. Start delay time after stop	00 ~ 10Min	02
E6	Offset on room temp.	-05℃ ~ 05℃ / ℉	00
E8	Comp. Stop time when room temp. Err.	01 ~ 180min	45
E9	Comp runs time when room temp.Err.	01 ~ 180min	15
F02	Defrost duration calculating	00=by interval 01=by comp. Working time	00
F1	Max. Defrost duration	01 ~ 60min	20
F2	Defrost interval time	00 ~ 24h	06
F5	Display during defrost	00=Normal display 01=Last value before defrost 02= "DEF"	00
F6	Draining time	00 ~ 60%	02
h1	Humidity set value	01 ~ 99%	75
h2	Humidity hystersis	01 ~ 30%	10
h3	Probe revision	-10 ~ 10%	00
H1	Room temp. Overhigh alarm	45℃ ~ H2 120℉ ~ H2	45℃
H2	Room temp. Too low alarm	H1~ -45℃ H1~ -40℉	-45℃
H5	Alarm starts delay time after boot-strap	00 ~180min	60
H6	Alarm starts delay time	00 ~180min	00
C0	Accuracy	00=±1℃ 01=±0.1℃	00
C2	Display mode	00= display probe value 01=display set temperature	00
CPA	Changing menu password	00 ~ 99(Setting "00" , the menu password is cancelled)	00

10 WIRING DIAGRAM