Temp:O-tron plus

Technician Data

Input voltage	**220V(+/-10%)VAC**
Frequency	**50~60 Hz**
Electrical power	**20va**
Fire proofing rate of relay	**250VAC,5A**
Temperature for using	**-20-60 ˚C**
Measurement range temperature	**-10.0-70.0˚C**
Deviation value	**±1%**
Accuracy	**0.1˚C**
Measurement range of humidity	**0.0-99.9%**
Accuracy	**0.1%RH**
Deviation value	**±5%Rh**

Temp:O-tron plus for Pakistan

Installation

1. Connect the temp:O-tron to the wall in a dry place approximately 1 meter away from the electrical cabinet
2. Connect 220 AC cable to the L,N Connector this is the unit power input
3. The temp:O-tron has on breaker fuse inside for the relay output and it must be installed externally
4. Connect a protective conductor (P.E) to the Ground connector the resistance must be not over than 5ohms we suggest that use an independent ground cable which is not shared with the one for electricity box

Analog input connections

1. **Temperature sensors**
   T1 is used for indoor temperature sensor use a two wire cable connect brown wire to analog input t1 and white wire to and input or 0v
   T2 is use for indoor temperature sensor use a two wire cable connect brown to analog input t2 and white wire to and
   T3 is use for outdoor temperature sensor use tow wire cable connect brown to analog input t3 and white to and or 0v
   T4 is use for outdoor temperature sensor use tow wire cable connect brown to analog input T4 and white to and or 0v
2. **Humidity sensor**
   Hum is used for indoor humidity use three wire cable brown to 12 green to gn5 and white to hum
3. **Analog output connections**
   Brown-out is used for the variable speed fans
4. **Digital inputs.**

Input I is used for the water clock dry contact signal use two wire cable.

Connect one wire to digital input 1 and second wire to or the signal from the water clock should be wired in such a way that when the water clock sends pulse the dry contact will be in normally closed inputs is used for the inlet contact signal use a two wire to digital input and the second to 0v the signal from inlet should be wired in such a way that when the inlet moves the dry contact will be normally Closed relay connection

Connect the relay outputs to the various systems all output are dry contact 5a relay list

Relay number	Output
1	Fan group 1
2	Fan group 2
3	Fan group 3
4	Fan group 4
5	Fan group 5
6	Fan group 6
7	Fan group 7
8	Fan group 8
9	Fan group 9
10	Fan group 10
11	Fan group 11
12	Fan group12/heater
13	Cooling System
14	Cooling pump2/heater
15	Lighting System
16	Alarm
17	Heater

Connect a 220 VAC cable to 220 v in connector near the alarm connector this is the unit power

Note: there is no breaker /fuse inside the temp:O-tion for relay output

Temp:O-tron plus for Pakistan

➢ Operation

The temp:O-tron will display the overage temp of the connected temp sensors it is Separately display each sensor separately the temp:O-tron will display the humidity of the connected sensors

➢ Turn on power:

1. Each time power is connected to the unit 3.2.U will open on the Display this number is version number and is unique for this program version.
2. The left display indicates the indoor temperature the center display shows the outdoor temperature and the right shows the indoor humidity

Change of display

Push on ▼ button for select the display this is a reading of current fan speed

t1 is a reading of indoor temp 1

t2 is a reading of indoor temp 2

t3 is a reading of indoor temp 3

t4 is a reading of indoor temp 4

Hum   this is a reading of the current indoor humidity

HAL   error of greater than or equal to high alarm   specified

LAL   error of less than or equal to low temperature specified

HHu   error of greater than or equal to the humidity specified

tHS   error of greater than or equal to time heat stress index specified

AHS   error of greater than or equal to the amount heat stress specified.

Push on ▼ button. For select the display

 F transfer Current indoor temp and outdoor temp from centigrade to Fahrenheit

Change of set point

It is possible to change each set point

1. Press "select" button for select the main functions
2. Press " ▲ " or " ▼ " button to select the sub functions
3. Press "program" button the lamp program will be turn on
4. Press " ▲ " or " ▼ " button enter the desired value the new data will appear on the display
5. Check the display to see if the desired value is correct if correct press "program button to exit

   The lamp program will off the new desired value has been stored in to the unit memory

Temp:O-tron plus for Pakistan

Set points

Functions

Temperature for fan on/off

1. F01 set on
Enter here the temperature at fan 1 turn on
2. F01 set off
Enter here the temperature of fan turn off

3. **F02 set on**

   Enter here the temp at fan 2 turn on

4. **F02 set off**

   Enter here the temp at fan 2 turn off

5. **F03 set on**

   Enter here the temp at fan 3 turn on

6. **F03 set off**

   Enter here the temp at fan 3 turn off

7. **F04 set on**

   Enter here the temp at fan 4 turn on

8. **F04 set off**

   Enter here the temp at fan 4 turn off

9. **F05 set on**

   Enter here the temp at fan 5 turn on

10. **F05 set off**

    Enter here the temp at fan 5 turn off

11. **F06 set on**

    Enter here the temp at fan 6 turn on

12. **F06 set off**

    Enter here the temp at fan 6 turn off

13. **F07 set on**

    Enter here the temp at fan 7 turn on

14. **F07 set off**

    Enter here the temp at fan 7 turn off

15. **F08 set on**

    Enter here the temp at fan 8 turn on

16. **F08 set off**

    Enter here the temp at fan 8 turn off

17.F09 set on

Enter here the temp at fan 9 turn on

18.F09 set off

Enter here the temp at fan 9 turn off

19.F010 set on

Enter here the temp at fan 10 turn on

20.F10 set off

Enter here the temp at fan 10 turn off

21.F11 set on

Enter here the temp at fan 11 turn on

22.F11 set off

Enter here the temp at fan 11 turn off

23.F12 set on

Enter here the temp at fan 12 turn on

24.F12 set on

Enter here the temp at fan 12 turn off

Timer for Fans

25.F21 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan 01 temp (Function "F01") the Fan1 will run in an on/off cycle

26.F21 set off

Enter here the time period in minutes and second (x10) that the fan01 will be off during the fan off cycle

Note: enter "0.0" to disable the function.

27.F22 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan 02 temp (Function "F02") the Fan2 will run in an on/off cycle

28.F22 set off

Enter here the time period in minutes and second (x10) that the fan 02 will be off during the fan 02 off cycle

Note: enter "0.0" to disable this function so on to f32 set off.

29.F23 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan 03 temp (Function "F03") the Fan 3 will run in an on/off cycle

30.F23 set off

Enter here the time period in minutes and second (x10) that the fan 03 will be off during the fan 03 off cycle

Note: enter "0.0" to disable this function.

31.F24 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan 04 temp (Function "F04") the Fan04 will run in an on/off cycle

32.F24 set off

Enter here the time period in minutes and second (x10) that the fan 04 will be off during the fan 04 off cycle

Note: enter "0.0" to disable this function

33.F25 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan05 temp (Function "F05") the Fan05 will run in an on/off cycle

34.F25 set off

Enter here the time period in minutes and second (x10) that the fan 05 will be off during the fan05 off cycle

Note: enter "0.0" to disable this

35.F26 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan06 temp (Function "F66") the Fan06 will run in an on/off cycle

36.F26 set off

Enter here the time period in minutes and second (x10) that the fan 06 will be off during the fan06 off cycle

Note: enter "0.0" to disable this function

37.F27 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan07 temp (Function "F07") the Fan07 will run in an on/off cycle

38.F27 set off

Enter here the time period in minutes and second (x10) that the fan07 will be off during the fan07 off cycle

Note: enter "0.0" to disable this

39.F28 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan08 temp (Function "F08") the Fan08 will run in an on/off cycle

40.F28 set off

Enter here the time period in minutes and second (x10) that the fan08 will be off during the fan08 off cycle

Note: enter "0.0" to disable this

41.F29 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan09 temp (Function "F09") the Fan09 will run in an on/off cycle

42.F29 set off

Enter here the time period in minutes and second (x10) that the fan09 will be off during the fan09 off cycle

Note: enter "0.0" to disable this

43.F30 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan10 temp (Function "F10") the Fan1 will run in an on/off cycle

44.F30 set off

Enter here the time period in minutes and second (x10) that the fan10 will be off during the fan10 off cycle

Note: enter "0.0" to disable this

45.F31 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan11 temp (Function "F11") the Fan1 will run in an on/off cycle

46.F31 set off

Enter here the time period in minutes and second (x10) that the fan11 will be off during the fan11 off cycle

Note: enter "0.0" to disable this

47.F32 set on

Enter here the time period in minutes and seconds (x10) that the fan will run once the house temp as below the fan12 temp (Function "F12") the Fan12 will run in an on/off cycle

48.F32 set off

Enter here the time period in minutes and second (x10) that the fan12 will be off during the fan12 off cycle

Note: enter "0.0" to disable this function

Example:

    Fo1 set on =31.0c

    Fo1 set off =30.0c

    F21 set on = 5.0

    F21 set off = 15.0

As long as the indoor temp is below 31.0c the fan will be turn on 5 minutes and turn off 15minutes. When the temp reaches 31 .0c the fan will be turn on continued

49   t-L

Enter here the minimum temp setting to control the fan speed minimum

50   t-∏

Enter here the medium temp setting to control the fan speed minimum

51   t-H

Enter here the maximum temp setting to control the fan speed maximum

51   FSL

Enter here the minimum speed set in percentage that the variable speed fan will run

52   FSn

Enter here the medium speed set in percentage that the variable speed fan will run

53   FSH

Enter here the maximum speed set in percentage that variable speed fan will run

FSL	**=**	**10%**
FSN	**=**	**50%**
FSH	**=**	**100%**
t-L	**=**	**21.0ᵒC**
t-∏	**=**	**25.0ᵒC**
t-H	**=**	**30.0ᵒC**

As long as the indoor temp is below 23.0c the variable speed fan will be running at 30% when the temp reaches 23.0°C the variable speed fan will start to increase the speed by the time the house temp has reaches 30.0°C variable speed will be running at 100%

Note: the above setting work only for inverter

Temperature for cooling /heater on/off

1. **C01 set on**
   Enter here the temp at cooling turn on
2. **C01 set off**
   Enter here the temp at cooling turn off
3. **C02 set on**
   Enter here the temp at cooling pad2 turn on
4. **C02 set off**
   Enter here the temp at cooling pad2 turn off
5. **H01 set on**
   Enter here the temp at heater turn on 30.0^{o}C
6. **H01 set off**
   Enter here the temp at heater turn off 32.0^{o}C
7. **C21 set on**
   Enter here the time period in minutes and seconds that the cooling system will be turn on cycle
8. **C21 set off**
   Enter here the time period in minutes and seconds that the cooling system will run in an off cycle

Note: same setting for cooling pad2

Humidity for cooling off

1. Enter here the humidity at pump turn off **HH** is the differential point for **Hu** pump will turn off at 80.0% of **Hu** and will turn on again when humidity is less or equal to 78.0%(Hu-HH)

Time update

1. **Hr**

   This is a reading of the hour Setting it is possible to adjust the hour reading.

2. **Mn**

   This is a reading of the minute setting it is possible here to adjust the minutes reading

3. **dAy**

   This is a reading of the day setting it is possible here to adjust the day reading.

4. **dd**

   This is a reading of the date setting it is possible to adjust the date reading.

5. **ΠΠ**

   This is reading of the month setting it is possible here to adjust the month reading

6. **YY**

   This is a reading of the year setting it is possible here to adjust the year reading

Set time for lighting on off

1. **L1 set on**

   Enter here the time period 1 at light turn on

2. **L1 set off**

   Enter here the time period 1 at light turn off

3. **L2 set on**

   Enter here the time period 2 at light turn on

4. **L2 set off**

   Enter here the time periode2 at light turn off

5. **L3 Set On**

   Enter here the time period3 at light turn on

6. **L3 Set Off**

   Enter here the time period 3 at light turn off

7. **L4 Set On**

   Enter here the time period 4 at light turn on

8. **L4 Set Off**

   Enter here the time period 4 at light turn off

9. **L5 Set On**

   Enter here the time period 5 at light turn on

10. **L5 Set Off**

    Enter here the time period 5 at light turn off

Alarm

1. **HAL**

   Enter here the maximum temp required notification in case of HAL the controller will activate the alarm relay

2. **LAL**

   Enter here the minimum temp required notification in case of LAL the controller will activate the alarm relay

3. **HS**

   Enter here the number of heat stress index when the indoor temp plus indoor humidity in the house above this value the heat stress status will be activate

4. **AHS**

   Enter here the number of amount time in the heat stress when amount time in the heat stress is over this value the controller will activate the alarm relay

5. **tHA**

   Enter here the time in minutes of amount time in the heat stress.

6. **tHS**

   Enter here the time in minutes in the heat stress when time period in the heat stress is above this value the controller will activate the alarm relay

7. **tAL set on**

   Enter here the time period in seconds that the alarm system will run. The alarm system will activate.

8. **tHA set off**

   Enter here the time period in second's that the alarm system will be off

Max/min values

1. **Ht1**

   This is a reading of the high indoor temp today

2. **Lt1**

   This is a reading of the low indoor temp today

3. **ht1**

   This is a reading of high out door temp today

4. **lt1**

   This is a reading of the low out door temp today

5. **Hh1**

   This is a reading of the high indoor humidity today

   Lh1

   This is a reading of the low indoor humidity today

TH1

This is a reading of the longest time period when there is heat stress indoor today

Hs1

This is a reading of the highest value if the heat stress indoor today

Ah1

This is reading of the amount of events when there are the heat stress index today

Parameter stamp

1. ### T1^{o}C indoor temperature no1

   This is a reading of the current indoor temp sensor it is possible here to adjust the temp reading

2. ### T2 ^{o}C indoor temp no2

   This is a reading of the current indoor temp2 it is possible to adjust the temp2 reading

3. ### Hu (%RH) indoor humidity

This is a reading of the current indoor humidity it is possible to adjust the humidity reading

4. ### Hen house number

It is possible to enter house number only for pc communication

Id formula

This is the Id for controller

tSN

Indoor temp sensor control

It is possible to use partial or both indoor temp sponsors to use the temp sensor 1 enter the 1 to use both temp sensor for average enter1_2

HSn indoor humidity sensor control it is possible to use indoor humidity sensor for control.

5. to use humidity sensor enter corresponding **"1"** to not use humidity sensor enter corresponding " 0"

6. **dip**

   Select display brooding temp it is possible to select display brooding temp for show

   To show brooding temp enter **t2** to show speed variable fans enter **FSP**.

   ### F12 select use relay fan12

   It is possible to use relay fan12 for other function to use for **"fan12"** enter corresponding fan to use for heater enter corresponding "**Ht**"

   ### CP2 select use relay CP2

   It is possible to use relay **CP2** for other function enter here to use for heater enter corresponding **"Ht"** to use for **CP2** enter corresponding CP2

   ### HH humidity hysteresis

   Enter here the number of percentage below the requested humidity for cooling system **"Hu"** that cooling system will be turn on

   ### dLY delay turn on system

   Enter here the time in seconds that the controller will be delay turn on in case of power on

   ### tdL

   Enter here the times interval in minutes that the data logger will get record

P change password

Enter here a change password

Note: By default password is 381
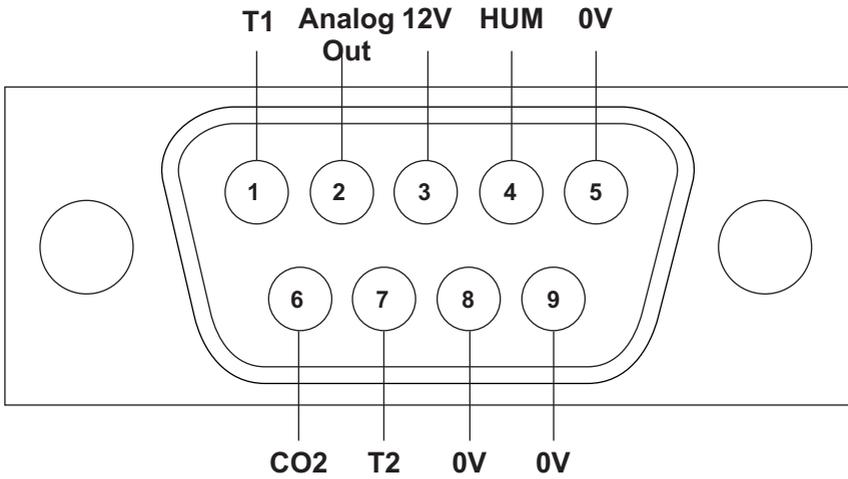
tL

This is a function for relay test

HHu set on

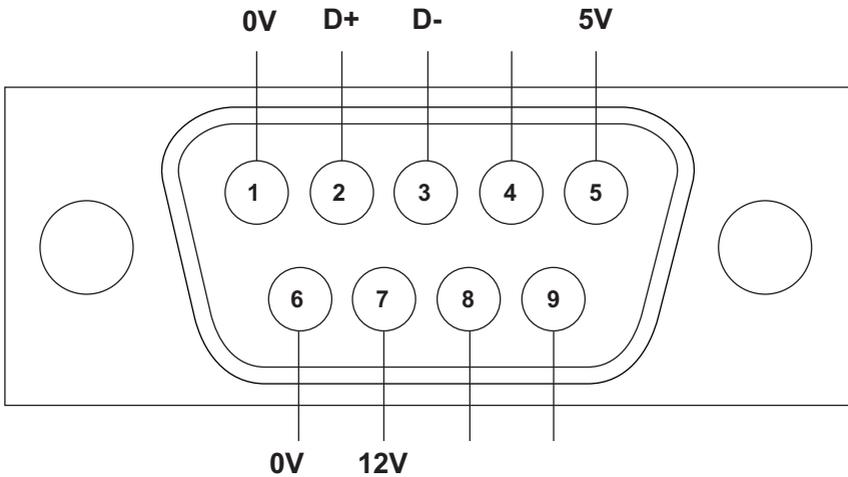Enter here the time period for humidity when humidity goes high

HHu set off

Enter here the time period for humidity when humidity goes high

DB-9 Female Connector for Sensors

T1 **Analog** **12V** **HUM** **0V**
        Out

1	2	3	4	5
6	7	8	9	

CO2 **T2** **0V** **0V**

DB-9 Male Connector for Communication

0V **D+** **D-** **5V**

1	2	3	4	5
6	7	8	9	

0V **12V**

CO2 (Corbon dioxide) Setting

Parameter	Value		Description
CO2	2.50 = 2500ppm	S On	CO2 Value for Fan on
	2.25 = 2250 ppm	S Off	CO2 Value for Fan off
	Off / F-9		Fan-9 On/Off
	0.5		Timer Value for On
	0.0		Timer Value for Off
	26.0 C		Fan Cutoff Tem.
	3.00 ppm		CO2 High Alarm

Control Cable

Wire Colour	Description	Wire Colour	Description	Wire Colour	Description
Black	FAN1	Orange	FAN7	Purple	COOL1
Black/White	FAN2	Orange/White	FAN8	Purple White	COOL2
Brown	FAN3	Yellow	FAN9	Blue	LIGHT
Brown/White	FAN4	Yellow/White	FAN10	Grey	ALARM
Red	FAN5	Green	FAN11	White + White	COMMON
Red/White	FAN6	Green/White	FAN12	Grey/White	ALARM,COM

Sensor Cable Colors

Wire Colour	Description
Red	Temp Sensor1
Blue	Analog Output
Brown	Humidity /CO2 Sensor 12v
White	Humidity Sensor input
Green	Humidity Sensor 0v
Black	Temo Sensor Common
Yellow	Temp Sensor 2
Orange	CO2