User's Guide
Program version T304

TempTron 304

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 This manual may contain mistakes and or printing errors. We accept no liability for technical mistakes, printing errors or their consequences.

This control unit is supplied with default settings. These setting are only general settings and should not be seen as final settings. We accept no liability for any consequences that may occur because of these settings.

The TempTron 304 is a stand-alone 4 stage temperature/humidity controller. One 0-10V-output is included in this unit.

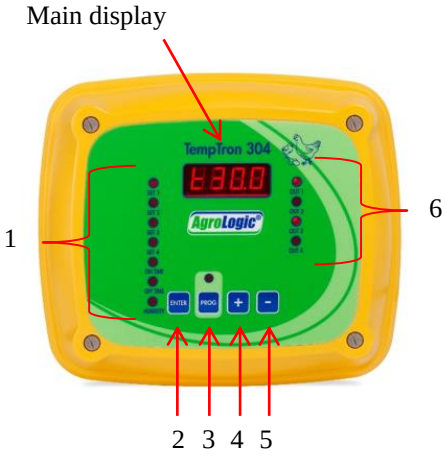
One temperature sensor and one humidity sensor can be connected to the TempTron 304.

The TempTron 304 displays the measured temperature and humidity on its front display.

Each of the four relays can be setup to operate either above or below set temperatures.

The 0-10V output can be set to operate from a temperature set point and an addition temperature span for increasing the output.

Front Panel



Main Display= Displays the current temperature/humidity reading. All programed values can be recalled and displayed here.

1= LED indicators for each relay plus 3 additional LEDs for the 0-10V output. The LED is on when the function is being programed or when viewing its settings.

2= *ENTER* key. Use this key to store settings into the unit's memory.

3= *PROG* key. Use this key to enter the programing mode.

4= + key. This key has two functions. The first is to scroll through the seven functions. The second usage is to increase the value used for the chosen function.

5= – key. This key has two functions. The first is to scroll through the seven functions. The second usage is to reduce the value used for the chosen function.

6= Four LED indicators, one for each relay. The indicator will light up when the relay is in use.

OPERATION

Turn the main power supply on. On the main display will appear **----** for approximately 5 seconds.

If all four relays have been programed to work by temperature, only the current temperature reading will be displayed. For relay configuration see Relay configuration on page 5

If at least one of the relays has been programed to work according to humidity, the main display will toggle between the temperature and humidity reading, **T** stands for temperature and **H** for humidity. For relay configuration see Relay configuration on page 5

View settings

Press once on the **+** key. The upper top left LED indicator, named Set1, will light up. On the main display will be the temperature or humidity setting for Set 1 (relay 1).
An additional press on the **+** key will light up the next LED indicator, named Set 2. On the main display will be the temperature or humidity setting for Set 2 (relay 2).
Continue in this manner to see all of the seven functions.

When no LED indicator on the left side is on, the current temperature/Humidity will be shown on the main display.

When one of the relays is activated, its corresponding OUT LED indicator on the right hand side or the panel will light up.

CHANGING SET POINTS

It is possible to change the setting for each of the seven functions.

1) Press once on the **+** key until the Set 1 LED is on.

2) Press on *PROG* key. The *PROG* and Set 1 LEDS will flash.

3) Press on the **+** or **–** keys until you reach the desired value.
   Hold down the **+** or **–** key to advance the value quicker.

4) When you have reached the desired value, press the *ENTER* key. The LED lights will stop flashing. The new information is now stored in the control units memory.

Relay configuration

Each of the four relays can be setup to work either by temperature or by humidity.

To enter the configuration mode, follow these steps:

- Press on the **+** key until the desired LED light is on. Example; press once on the **+** key to light up Set 1.
- Press on *PROG* key**.** The *PROG* and SET 1 LEDS will flash.
- Press on **+** and **–** keys simultaneously. When either **T-H**, **T-C**, **H-D**, or **H-R** appears on the main display, release the **+** and **–** keys.
- Choose desired set up for the relay according to the table below by pressing on **+** or **–** keys.
- Press on the *Enter* key to store to memory.

Display	Action
T-H	Close contact when temperature reading is below the set temperature. Example of usage; heating system.
T-C	Close contact when temperature reading is above the set temperature. Example of usage; ventilation or cooling system.
H-D	Close contact when the humidity reading is below the set humidity. Example of usage; fogger or cooling system.
H-R	Close contact when the humidity reading is above the set humidity. Example of usage; stop cooling or fogger systems.
T-H for 0-10V Temperature setting	The 0-10V output will start to operate if the temperature reading is below the set temperature. Example of usage; heating system.
T-C for 0-10V Temperature setting	The 0-10V output will start to operate if the temperature reading is above the set temperature. Example of usage; ventilation system.

See examples 1-3 on page 6-7 for more information.

H-D & ***H-R*** can only be used when a humidity sensor is connected to the unit.

Example 1

Set 1 (relay 1) is to be used to operate a fan when the temperature reading is above 25º.

- Press once on the + key. Set 1 LED indicator will light up.
- Press on *PROG* key**.** The *PROG* and SET 1 LED indicators will flash.
- Press on **+** and **–** keys simultaneously until either **T-H**, **T-C**, **H-D**, or **H-R** appears on the main display. Release **+** & **–** keys.
- Press on the **+** key until **T-C** appears on the main screen.
- Press on the *Enter* key to store into memory.
- Press on *PROG* key**.** The *PROG* and SET 1 LED indicators will flash.
- Use the **+** or **–** key to increase or decrease the value until 25.0 is reached.
- Press on the *Enter* key to store into memory.

When the temperature reading is 25.0º, relay 1 will be activated, OUT 1 LED indicator will light up and the fan will start to run.

Example 2

Set 2 (relay 2) is to be used to operate a heater when the temperature reading is below 23º.

- Press twice on the + key. Set 2 LED indicator will light up.
- Press on *PROG* key**.** The *PROG* and SET 2 LED indicators will flash.
- Press on **+** and **–** keys simultaneously until either **T-H**, **T-C**, **H-D**, or **H-R** appears on the main display. Release **+** & **–** keys.
- Press on the **+** key until **T-H** appears on the main screen.
- Press on the *Enter* key to store into memory.
- Press on *PROG* key**.** The *PROG* and SET 2 LED indicators will flash
- Use the **+** or **–** key to increase or decrease the value until 23.0 is reached.
- Press on the *Enter* key to store into memory.

When the temperature reading is less than 23º, relay 2 will be activated. OUT 2 LED indicator will light up and the heater will start to run.

Example 3

Set 3 (relay 3) is to be used to operate a fogger system when the humidity reading is below 65%.

- Press three times on the + key. Set 3 LED indicator will light up.
- Press on *PROG* key**.** The *PROG* and SET 3 LED indicators will flash.
- Press on + and – keys simultaneously until either **T-H**, **T-C**, **H-D**, or **H-R** appears on the main display. Release + & – keys.
- Press on the + key until **H-D** appears on the main screen.
- Press on the *Enter* key to store into memory.
- Press on *PROG* key**.** The *PROG* and SET 3 LED indicators will flash.
- Use the + or – key to increase or decrease the value until 65 is reached.
- Press on the *Enter* key to store into memory.

When the humidity reading is less than 65%, relay 3 will be activated. OUT 3 LED indicator will light up and the fogger will start to run.

0-10V output

The 0-10V output can be used to control a variable speed fan, heater or flap.
There are three functions used for the 0-10V output.

Temp; program the temperature that will bring the 0-10V output into operation. From this temperature the output voltage will start to increase in speed starting at the minimum setting (Min Pos) and increasing over the TempDiff function as a temperature Band Width (BW).

TempDiff; this is the temperature differential set above the *Temp* temperature setting. This is the BW used to increase or decrease the output voltage.

MinPos; this is the minimum voltage output used once the *Temp* setting is reached.

Example;
At 24.0º you want a variable speed fan to turn on. You want it to start running at 20%. By the time the temperature has reached 26.0º you want the fan to be running at 100%.

Program the unit as follows.

Temp function;

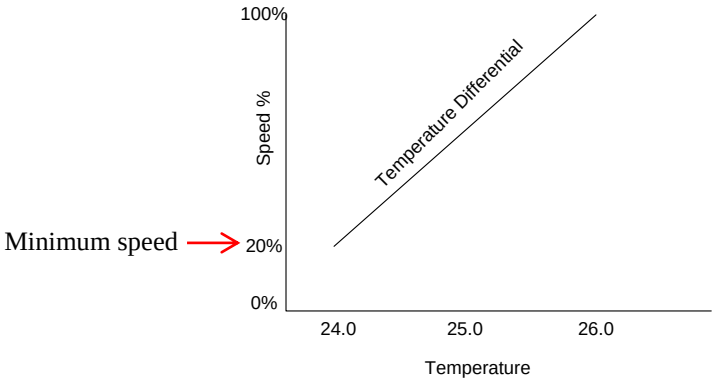
- Press five times on the + key. TEMP LED indicator will light up.
- Press on *PROG* key**.** The *PROG* and TEMP LED indicators will flash.
- Use the + or – key to increase or decrease the value until 24.0 is reached.
- Press on the *Enter* key to store into memory.

Temp Diff function;

- Press once again on the + key. TEMP DIFF LED indicator will light up.
- Press on *PROG* key**.** The *PROG* and TEMP DIFF LED indicators will flash.
- Use the + or – key to increase or decrease the value until 02.0 is reached.
- Press on the *Enter* key to store into memory.

Min Pos function;

- Press once again on the + key. MIN POS LED indicator will light up.
- Press on *PROG* key. The *PROG* and MIN POS LED indicators will flash.
- Use the + or – key to increase or decrease the value until 20 is reached.
- Press on the *Enter* key to store into memory.



Installation

1. Carefully unscrew the four screws on the front panel and carefully remove the cover. Disconnect the flat cable that connects the base and the front panel. Pay attention to the connection polarity before reconnecting it.

2. Connect the 220V supply to the **AC ~** and **N** clamps on the unit's power board.

3. Connect the supplied temperature sensor to the unit's temperature sensor **SIG** & **GND** clamps on the unit's power board. The sensor may be connected up to 100 meters away from the main unit with an ordinary two wire cable. The sensor wire polarity is not important.

   Do not use a shielded cable.

4. Connect the optional humidity sensor using a three wire cable. Connect the brown wire to **12V** clamp, blue wire to **GND** clamp and the yellow wire to the **SIG HUM** clamp found on the unit's power board.

5. Connect a two wire twisted cable between your external control unit to the 0-10V OUT & GND.

   Only a two wire twisted cable should be used.

6. Connect the four dry changeover relays. Each relay is 220V/2 AMP.

Reconnect the flat cable and close the front panel with the four screws.

See Connection Diagram on page 9 for more information.

A temperature sensor must be connected at all times to the unit.

TROUBLE SHOOTING

SYMPTOM	CAUSE	SOLUTION
Display Shows: **T888**	Temperature sensor or cable disconnected	Check wiring or replace temperature sensor
Display shows: **T999**	Temperature sensor or cable shorted	Check wiring or replace temperature sensor
Display Black	Fuse burn out	Replace fuse 100 mA

Connection Diagram