

TrolMaster

TS-2

Thermostat Station

For Hydro-X Control System

Overview

Thank you for purchasing TrolMaster's TS-2 Thermostat Station for use with the Hydro-X master controller. It is specifically designed to replace the traditional thermostat to control four different systems (Heat/Cool , Cool only , Heat only , Heat pump) for the purpose of constant temperature auto control.

Mount the TS-2 near the thermostat device using the pre-existing control wires, now you can use the TS-2 in conjunction with the Hydro-X to control your thermostat devices easily. Choose your desired temperature setpoints for the Day / Night mode (see Temperature Settings in Hydro-X's instructions), the TS-2 will turn on/off Cooling Mode or Heating Mode automatically based on the setpoint.

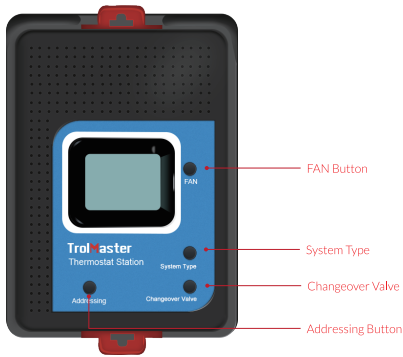
There is no need to provide power supply for the TS-2 unit. It can be connected to the Hydro-X with a simple RJ12 cable. After power-on, the Hydro-X will send the control data to the TS-2 automatically. The LCD screen of the TS-2 will display the temperature setpoint (upper part) and current temperature (lower part). When the current measured temperature is beyond the setpoints, the TS-2 unit will control the the thermostat device to perform cooling mode (Cool On) or heating mode (Heat On) automatically.

Features

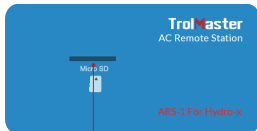
- No Extra Power Needed
- LCD Display, Easy Operation
- Micro-SD slot for Firmware Upgrades
- Seamless Connectivity with Hydro-X
- Replace Thermostat to Control Commercial AC Units

Installation

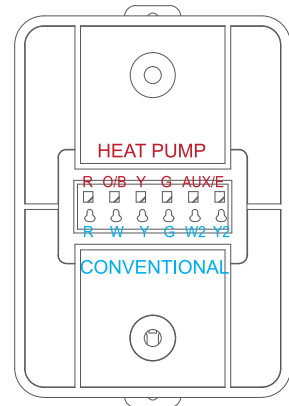
Pull the 2 tabs outward to release the bracket from the unit, mount the bracket to wall or surface near the thermostat cable, which is consist of 5 or 6 color signal wires. Peel off the outer sheath of all wires to reveal the copper wire. Then insert each bare wire into Heat Pump Terminals (R, O/B, Y, G, AUX/E) or Conventional Terminals (R, W, Y, G, W2, Y2) on the back panel while pressing the button of the terminal designation at the same time. Release the button to clamp the wire in each terminal. Verify wire is firmly secured by gently pulling on wire. Finally, place the unit back on the bracket and press the 2 tabs back in to lock the unit in place.



RJ12 Cable Socket



Micro SD Slot



Wiring terminal designations

Heat Pump Terminals:

- R** 24VAC power from heating transformer
- O/B** Changeover valve
- Y** Compressor contactor
- G** Fan relay
- AUX/E** Auxiliary/Emergency heat relay

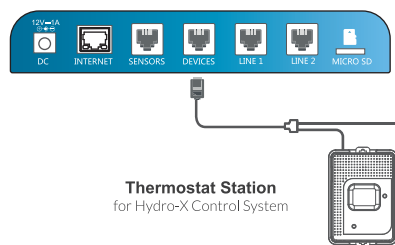
Conventional Terminals:

- R** 24VAC power from heating transformer
- W** Heat relay (stage 1)
- Y** Compressor contactor(stage 1)
- G** Fan relay
- W2** Heat relay (stage 2)
- Y2** Compressor contactor(stage 2)

Operation Instructions

1. Connection to Hydro-X

After the signal wires are successfully connected to the TS-1 unit, connect the TS-1 to the Hydro-X with a RJ12 cable through the DEVICES port on the bottom of Hydro-X. See below connection diagram for reference.



After power-on, the LCD screen of TS-2 will show "Please press Addressing Key" when the TS-2 is connected correctly. Otherwise, it will show "Offline" when the TS-2 is connected incorrectly.



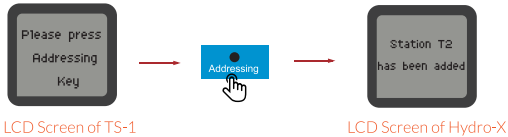
Correct Connection



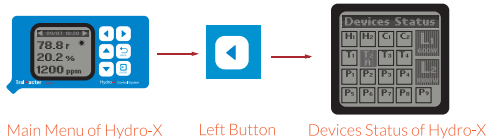
Incorrect Connection

2. Address Assignment

Press the Addressing button on the TS-2 unit so that the Hydro-X will assign an address such as "T2" to the TS-2 unit accordingly. The LCD screen of Hydro-X will display "Station T2 has been added". T2 is not the constant address code, it can be T1, T3 or T4 depending on the connection sequence of the temperature devices. The first one is marked as T1, the second one as T2, and so on.



You can also check the address code on the Hydro-X as shown below:



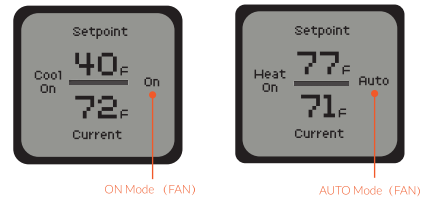
3. FAN Setting

Press FAN button to switch between ON mode and AUTO mode for the fan inside an air-conditioner.

AUTO: Fan runs only when the heating or cooling mode is on (Auto is the most commonly used setting).

ON: Fan is always on.

NOTE: Options may vary depending on your heating/cooling equipment.

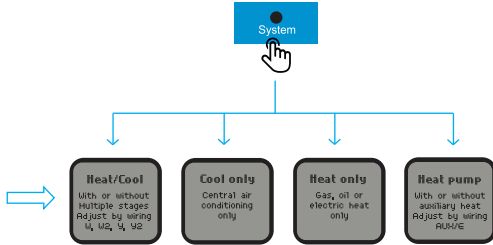


NOTE:

1. When one of the four system types is selected, press and hold the "System Type" button for 3 seconds and the LCD screen of TS-2 will return back to main menu.
2. When the FAN is set into Auto mode, FAN will continue to work for 1 minute before stop when Heat or Cool is stopped.

4. Select System Type

After power-on, the LCD screen of TS-2 unit will display the setting temperature (setpoint) and current temperature. Press and hold the “System Type” button for 3 seconds on the main menu, the LCD screen of TS-2 will display in 4 modes in sequence: Heat/Cool, Cool only, Heat only, Heat pump as illustrated below.



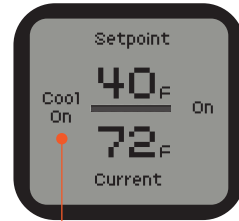
Heat/Cool: Heat/cool device that can be use for heating or cooling. With or without multiple stages by wiring W, W2, Y, Y2, W (stage 1) and W2 (stage 2) for heat control wire. Y(stage 1) and Y2 (stage 2) for cool control wire.

Cool only: Control air conditioner only.

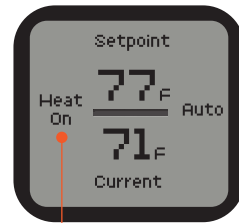
Heat Only: Control gas heater, oil heater or electric heater only.

Heat Pump: Control heat pump. With or without auxiliary heater by wiring terminal AUX/E.

The TS-2 will turn on Cooling Mode or Heating Mode automatically depending on the variance between current temperature and setpoint. For example, when the current temperature is HIGHER than the setpoint, the TS-2 will start cooling mode and display “Cool On” on the screen. When the current temperature is LOWER than the setpoint, the TS-2 will start heating mode and display “Heat On” on the screen.



Cooling Mode

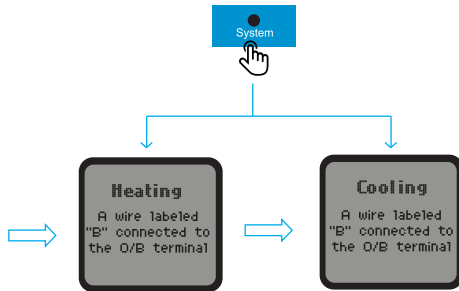


Heating Mode

NOTE: When one of the four system types is selected, press and hold the “System Type” button for 3 seconds and the LCD screen of TS-2 will return back to main menu. Or wait for a 1 minute timeout to automatically return to the main interface.

5. Changeover Valve

When the Heat Pump mode is selected, press and hold the "Changeover Valve" button for 3 seconds, the LCD screen of TS-2 will display Heating and Cooling mode in sequence.



Heating changeover valve: Use this setting if you have connected a wire labelled "B" to the O/B terminal.

Cooling changeover valve: Use this setting if you have connected a wire labelled "O" to the O/B terminal.

NOTE:

1. When the device type is Heat Pump, the time interval for restart must be 5 minutes after stopping the Heating mode or Cooling mode. If less than 5 minutes, the output will not be opened and the LCD screen displays "Heart On" or "Cool On" and blinks.
2. When the device type is Heat/Cool or Cool only, the time interval for restart must be 5 minutes after stopping the Cooling mode. If less than 5 minutes, the output will not be opened and the LCD screen displays "Cool On" and blinks.

6. Firmware Upgrade

Press and hold "Addressing" button while replugging the RJ12 cable, the upgrade process will be done automatically.



***NOTE:** Make sure the file name of firmware upgrade should be named as "ts2_update.hex".

TrolMaster

Designed by TrolMaster in California

Assembled in China

For more information, please visit:

www.trolmaster.com