Pymeter PY-20TT-16A Digital Temperature Controller User Guide

Contents

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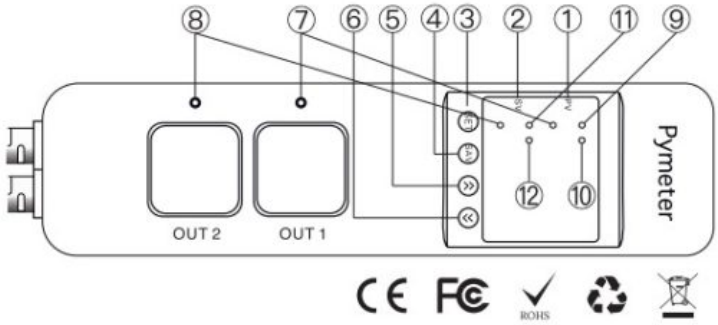
PY-20TT-16A



1. READ before USE

Q: How Pymeter Thermostat Control Temperature?
A: It controls temperature by turning ON(OFF) the Heater/Cooler to Start(Stop) Heating/Cooling.

Q: Why cannot control temperature at a single point?
A1 : Temperature is fluctuating all the time in our changing environment;
A 2: If you attempt to use a temperature controller to keep the temperature at a single point, once temperature changes slightly, it will trigger heating or cooling device ON&OFF very frequently, that will damage the heating/cooling device in a very short time.

Conclusion: All temperature controllers are used to control temperature range.

Q: How Pymeter Thermostat control temperature range?
A: In Heating mode (Low ON High OFF)

Ask yourself a question , why you need to heat? the answer is current temperature is lower than the target temperature you desired, we need to START the heater to heat up the temperature. Then there comes another question, at what point to Start Heating? Thus we need to set a low temperature point to trigger heating(Turn ON outlet for Heater), which is called “ON-Temperature” in our product, along with current temperature rising up, what if overheat? at what point to Stop Heating? Thus the next we need to set a high temperature point to Stop

Heating(Turn OFF outlet for Heater), which is called “OFF-Temperature” in our product. After heating stops, current temperature may fall down to low temperature point, then it will trigger heating again, into another loop.

In Cooling mode (High ON Low OFF)

Why you need to cool? the answer is current temperature is higher than the target temperature you desired, we need to START the cooler to cool down the temperature, at what point to Start Cooling? We need to set a high temperature point to trigger Cooling(Turn ON outlet for Cooler), which is called “ON-Temperature” in our product, along with current temperature falling down, what if too cold as we don’t wish? Thus the next we need to set a low temperature point to Stop Cooling(Turn OFF outlet for Cooler), which is called “OFF-Temperature” in our product. After cooling stops, current temperature may rise up to high temperature point, then it will trigger cooling again, into another loop.
By this way, Pymeter Thermostat controls temperature range at “ON-Temperature”~ “OFF-Temperature”.

2. Keys Instruction

(1) PV: under working mode, display sensor 1 Temperature ; under setting mode, display menu code.
(2) SV: under working mode, display sensor 2 Temperature ; under setting mode, display setting value.
(3) SET key: press SET key for 3 seconds to enter setting .
(4) SAV key: during the setting process, press SAV key to save and exit setting .
(5) INCREASE key: under setting mode, press INCREASE key to increase value.
(6) DECREASE key: under setting mode, press DECREASE key to decrease value.
(7) Indicator 1: the lights are on when outlet 1 is turned on .
(8) Indicator 2: the lights are on when outlet 2 is turned on .
(9) LED1 -L: the light is on if outlet 1 is set for **HEATING**.
(10) LED1-R: the light is on if outlet 1 is set for **COOLING**.
(11) LED2-L: the light is on if outlet 2 is set for **HEATING**.
(12) LED2-R: the light is on if outlet 2 is set for **COOLING**.

3. Working Mode (Important!!!)

Each Outlet supports Heating/Cooling Mode.

Use for Heating device:
1 Set ON-Temperature(1 On I 2On) < OFF-Temperature(1 OF / 2OF).

Outlet 1 (2) turn on when current Temperature<= ON Temperature, and turn off when current Temperature>=OFF-Temperature, it will NOT turn on until current
Temperature falls back to ON-Temperature or lower!

Heating Mode(Cold–>Hot) , MUST set 1 On/ 2On LESS than 1 OF/ 2OF :
1 On /2On : the minimum temperature(How COLD) you allow it to be (it is the point to turn ON outlet to START HEATING) ;1 OF/ 2OF: the maximum temperature(How HOT) you : allow it to be (it is the point to turn **OFF** outlet to **STOP** HEATING).

Use for Cooling device:
Set ON-Temperature(1 On I 2On) > OFF-Temperature(1 OF/ 2OF).

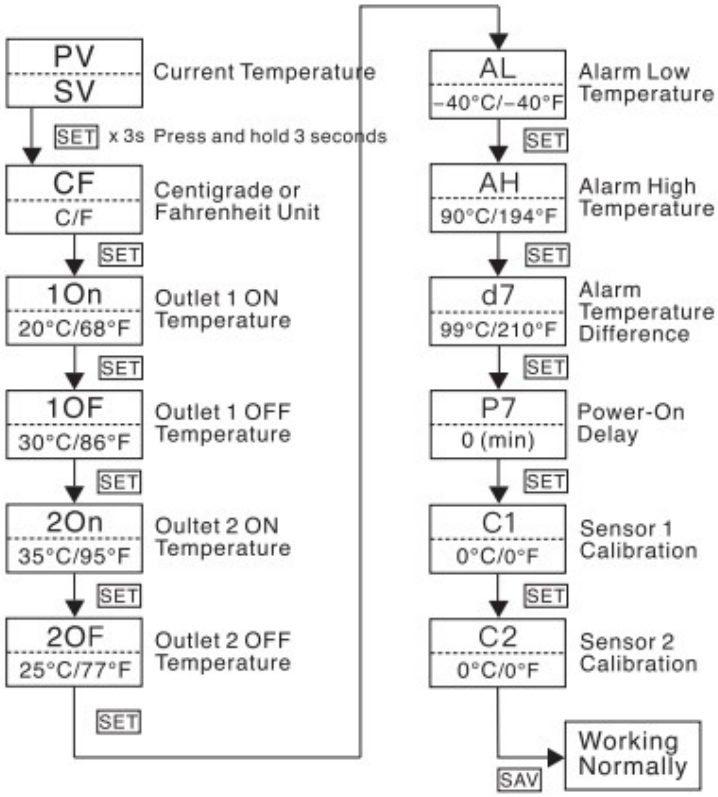
Outlet 1 (2) turn on when current Temperature>= ON Temperature, and turn off when current Temperature<= OFF-Temperature, it will **NOT** turn on until current Temperature rises back to **ON**-Temperature or higher!

Cooling Mode(Hot–>Cold), **MUST** set 1 On/ 2On **GREATER** than 1 OF/ 2OF : **1On/ 2On:** the maximum temperature(How HOT) you allow it to be (it is the point to turn **ON** outlet to **START COOLING) ; 1OF/ 2OF:** the minimum temperature(How COLD) you allow it to be (it is the point to turn **OFF** outlet to **STOP** COOLING).

4. Setup Instruction

When the controller is power on or working, press SET key for over 3 seconds to enter setting mode, PV window displays the first menu code “CF”, while SV window displays according setting value. Press SET key to go to next menu, press INCREASE key or DECREASE key to set current parameter value. After setup done, press SAV key to save the settings and return to normal temperature display mode. During setting, if there is no operation for 30 seconds, the system will save the settings and return to normal temperature display mode.

5. Setup Flow Chart



6. Main Features

- ► Designed with independent dual outlets;
- ► Dual Relays, able to control both Heating and Cooling devices at the same time, or control separately;
- ► Dual Waterproof Sensors, turn devices on and off at desired temperatures, very easy and flexible to use;
- ► Celsius or Fahrenheit Read-out;
- ► Dual LED Display, read temperature from 2 sensors;
- ► High and Low Temperature Alarm;
- ► Temperature Difference Alarm;
- ► Power-on Delay, protect output devices from excessive on/off toggling;
- ► Temperature Calibration;
- ► Settings are retained even when power off.

7.Specification

Temperature Range	-50~99°C / -58~210°F
Temperature Resolution	0.1 °C / 0.1°F
Temperature Accuracy	±1°C / ±1°F
Controller Dimension	210x55x40 mm
Input Power	85~250VAC, 50/60Hz
Output Power	85~250VAC, MAX 16A
Buzzer Alarm	High and Low Temperature, Temperature Difference
Sensor Cable	NTC Sensorx2, 2m/6.56ft
Input Power Cord	1.35m / 4.5ft

8. MENU Instruction

Attention: Once CF value is changed, all the Setting values will be reset to Default Values.

⚠**Don't compare it to common inaccurate thermometer or temp gun! Please Calibrate with ice-water mixture (0°C/32°F) if necessary!**

Remarks: Buzzer will alarm with sound "bi-bi-bi ii" until the temperature is back to normal range or any key is pressed; "EEE" is displayed on PV/SV window with "bi-bi-bi ii" alarm if sensor is fault.

Temperature Difference Alarm(d7): (Example) if set d7 to 5°C, when temperature difference between sensor 1 and sensor 2 is over 5°C, it will alarm with sound "bi-bibiji".

Power-On Delay(P7): (Example) if set P7 to 1 min, outlets won't turn on until 1 min countdown since last power off.

How to Calibrate Temperature?
Soak the probes fully into the ice-water mixture, the actual temperature should be 0°C/32°F, if the reading temperature are not, offset(+-) the difference in Setting –
C1 /C2, save and exit.

9. Support and Warranty

Pymeter products are provided Lifetime Warranty and Technical Support.

Any question/issue, please feel free to contact us any time
on **www.pymeter.com** or Email **support@pymeter.com.Rzc**

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