ZL-6280A Temperature Controller
Instruction Manual A1.0b

Introduction

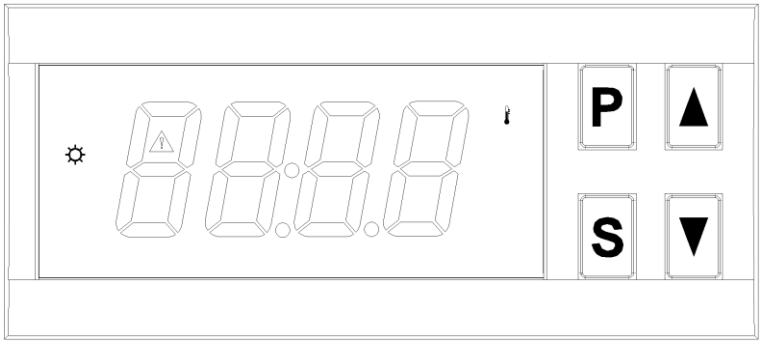
ZL-6280A makes use of PT100 sensor for heating control of high temperature, with front panel waterproof level IP65.
It is suitable to control oven, water heater, and other objects between 2～400℃.

Main Function

Sense and display temperature to 490℃
Temperature control to 400℃
Temperature output (R1) delay protection for load
Warning output (R2, R3)
Over temperature and sensor failure warning
Buzzing warning

Specification

Temp. output, R1: 16A, 250Vac; R2/R3, 3A, 250Vac. (the parameters are under **pure resistance loads**)
Sensor: PT100 (**excluded in package of selling**)，For 2 wire pt100, connect to terminal 8 and 10!
Set / control range: 2 ~ 400℃, resolution: 1℃
Display range: -10 ~ 490℃, resolution: 1℃
Accuracy: 1.5℃
Working: -20 ~ 45℃, 5 ~ 90%RH without dew
Dimension: W78 x H34.5 x D71 (mm)
Installation drilling: W71 x H29 (mm)
Case materials: PC + ABS, fireproof
Protection level: IP65 (Front side only)
Power supply: 100 ~ 240Vac, 50/60Hz



Keypad and Display

Icon	Function	On	Blinking
☼	Temperature output R1	R1 energized	R1 is under delay protecting
⚠	Warn	----	Warning
🌡	Temperature display	Displaying temp.	Warning
8888	Hint	Restoring to factory default settings	----
LL	Failure	----	Sensor short
HH	Failure	----	Sensor open
EL	Failure	----	Low temperature warning
EH	Failure	----	High temperature warning

Operation

Set Set-Point

Press〖S〗to enter into the set status. The current set-point value displays.
Press〖▲〗or〖▼〗 to set the value (keeping depressed can fast set).
The status will exit, and the setting will be saved, if no key operation within 6 seconds.
Factory default set is 100℃. Range is from LS to HS (see parameter code table below).

Set System Parameters

Keep〖P〗depressed for 6 seconds to enter into parameter setting status.
Press〖P〗to select the parameter code (see parameter code table below). Press〖▲〗or〖▼〗to set the value.
The status will exit, and the settings will be saved, if no key operation for 6 seconds.

Parameter Code Table

Code	Function	Range	Factory Default Set
LS	Low temperature warning	0 ~ (set-point – hysteresis - 1)	0℃
HS	High temperature warning	(set-point + hysteresis) ~ 415℃	415℃
Pt	Delay protection	0 ~ 3 minute	0 minute
CA	Calibration	-15 ~ +15℃	0℃
d	Hysteresis	1 ~ 15 ℃	5℃

Control

Heating Control

If **Troom** ≤ Set-point -【d】, and R1 has been de-energized for 【Pt】, then R1 energized;

If **Troom** ≥ Set-point +【d】, then R1 de-energized.

R1 Load Delay Protection

After power supplied, R1 could be energized after 【Pt】;

After R1 de-energized, it could be energized again after 【Pt】.

Warning

- When sensor fails, Blinking display the failure code “LL” or “HH”, buzzing, R1 de-energized.
- If **Troom** ≥【HS】, blinking display “EH”, buzzing, warning output (R2 R3) acts (see table below), R1 de-energized.
- After power supplied, and after once having reached to set-point +【d】, if **Troom** ≤【LS】, blinking display “EL”, buzzing, warning output (R2 R3) acts (see table below), R1 energized.

Note: when buzzing warning, pressing〖P〗will stop buzzing.

Warning Output (R1 R2) Table:

Terminal	Remark
R3	After power supplied: open when warning, closed when no warning. When no power supply: open
R2	After power supplied: closed when warning, open when no warning. When no power supply: closed
COM	Common terminal

Calibration

The sensor absolute accuracy could be calibrated by setting【CA】.

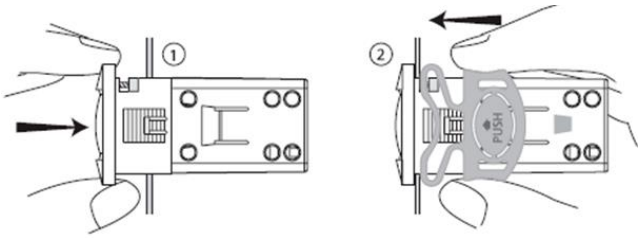
Restore to Factory Default Settings

Under none-setting status, keep all four keys depressed simultaneously for 6 seconds, the “8888” will display, and all system parameters will be restored to factory default settings.

Installation

1st: Insert into drilling hole.

2nd: Clamp



Attention

- Do not make wiring (R1, R2, R3 and sensor) when power supplied.
- Wiring work should be manipulated by certified technicians.
- Wrong connection could damage the controller, and the loads. Power supply to terminal 7 and 8 to check the controller. If there is a multimeter, check the outputs, as well as input, by the help of settings.
- Sensor and input signal wires should not be laid together with power supply wire, and even in same pipe.
- Sensor wire is better as short as possible. Not wind the redundant length wire to electrical noise equipment.
- The loads should be within the specification of the controller output driving ability. If using ac/dc module as load, or tungsten lamp, or motor, following the below requirements to avoid surging current damaging or shorten the lifetime of the controller outputs:

  For ac/dc module as load, the rated current should be no more 1/10th of output specification **under pure resistance**.

  For tungsten lamp as load, the rated current should be no more 1/15th of output specification **under pure resistance**.

  For motor, the rate current should be no more 1/5th of output specification **under pure resistance**.

For example: a 3A (**pure resistance** spec.) relay, if drive a 660W tungsten lamp with, the **relay contactor will be burnt immediately**, if drive a 0.2A tungsten lamp (44W), the lifetime will be guaranteed.

- Don’t touch inside components.
- Avoid installing controller in the following environment:

More wet than 90%RH, or easily dew; Vibrating, or will be shocked; Possible sprayed; Under erosive air; Under explosive air.

Electrical Wiring