



# AT02 SERIES PID TEMPERATURE CONTROLLER

## User's Manual

### RESTRICTIONS ON USE

When using this product in applications that require particular safety or when using this product in important facilities, please pay attention to the safety of the overall system and equipment. Install fail-safe mechanisms, perform redundancy checks and periodic inspections and adopt other appropriate safety measures when it is necessary. This product is rated at Class II □. Serviced by trained and skilled personnel only.

### ATTENTION !

1. Please read the SAFETY PRECAUTION section on reverse side before use of this product.
2. Please read this user's manual before use for proper operation.
3. Please safe guard this user's manual.

### \* Function Setting \*

Warning! Please make sure the power is off, before making any changes on the DIP switch.

	DIP Switch					
	1	2	3	4	5	6
Input type	K Type	0~1200°C	ON	OFF	OFF	
	J Type	0~500°C	ON	ON	OFF	
	R Type	0~1700°C	ON	OFF	ON	
	PT-100	-50~400°C	OFF	ON	ON	
Control Mode	ON/OFF CONTROL				OFF	
	PID CONTROL				ON	
Output	RELAY				OFF	
	DC 24V (for SSR)				ON	
Function Lock	NONE					OFF
	ALL EXCEPT SV					ON

### List of Alarm Function :

1	Deviation High Alarm	OFF → ON (SV+AS1) / ON → OFF (SV)
2	Deviation Low Alarm	ON → OFF (SV+AS1) / OFF → ON (SV)
3	Process High Alarm	OFF → ON (AS1)
4	Process Low Alarm	ON → OFF (AS1)
5	Deviation High/Low Alarm	SV+AS1 → OFF (SV) / SV+AS1 → ON (SV)
6	Band Alarm	SV+AS1 → OFF (SV) / SV+AS1 → ON (SV)
7	Deviation High Alarm (Standby)	
8	Deviation Low Alarm (Standby)	
9	Process High Alarm (Standby)	
10	Process Low Alarm (Standby)	
11	Deviation High/Low Alarm (Standby)	
12	Band Alarm (Standby)	

### \* Key Lock Setting \*

Under User Level, press **▽** key for 3 seconds to enter Key Lock Mode. Set Lock Number according to the level of protection.

### List of Key Lock Mode :

	LVL	usr	Pid	SEt	ArG
Others	○	×	×	×	×
0022	○	○	×	×	×
0111	○	○	○	×	×
1122	○	○	○	○	○

Symbol ○: Can display and can be set  
X: Can't display nor can't be set

### \* Names and Functions of Parts \*

**LEDs**

- AT: Lit when the auto tuning is ON.
- OUT: Lit when the control output is ON.
- ALM: Lit when the alarm output is ON.
- LOCK: Lit when the key is locked.

**Upper Display**  
Displays PV values (current temperature, etc.) or setup items.

**Lower Display**  
Displays SV values (set temperature, etc.) and other parameter values.

**SET Key :** Switches the display. Hold down for 3 seconds to switch modes.

**▽ / △ Key :** Used to change numeric values.

**◀ Key :** Used to shift setup items or parameter digits.

### \* User Level Setting \*

1. Power ON: All displays are lit for 3 seconds.
2. The IC version is displayed for about 6 seconds.
3. Operation Mode is displayed.
4. Press **SET** key once to setup Alarm Setting.
5. Press **SET** key once to setup Auto Tuning.
6. Press **SET** key once to setup PV Offset.
7. Press **SET** key once to setup SV Offset.
8. Press **SET** key once to return to Operation Mode.

### \* PID Control Setting \*

Set the DIP switch to PID Control before proceeding.

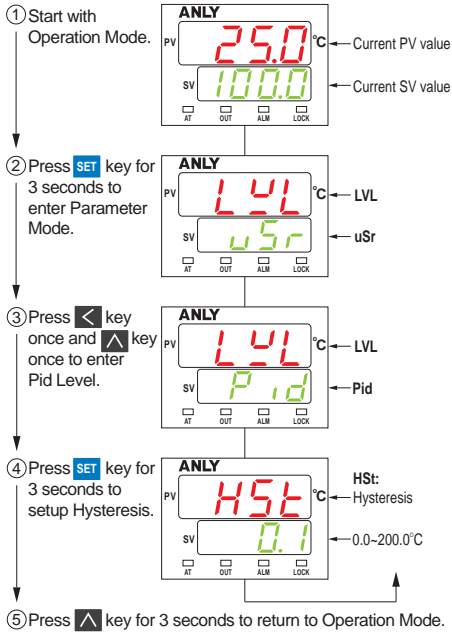
1. Start with Operation Mode.
2. Press **SET** key for 3 seconds to enter Parameter Mode.
3. Press **◀** key once and **△** key once to enter Pid Level.
4. Press **SET** key for 3 seconds to setup Proportional Band.
5. Press **SET** key once to setup Integral Time.
6. Press **SET** key once to setup Derivative Time.
7. Press **SET** key once to setup Relay Cycle Time.
8. Press **SET** key once to setup SSR Cycle Time.
9. Press **SET** key once to setup Fuzzy.
10. Press **△** key for 3 seconds to return to Operation Mode.

### \* SV Lock Setting \*

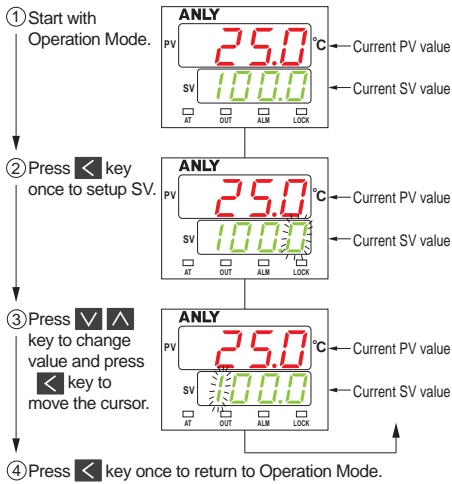
Under Operation Mode, press **◀ + △** key for 1 seconds to lock the SV value. And press **▽** key for 1 seconds again to unlock the SV value.

### \* ON/OFF Control Setting \*

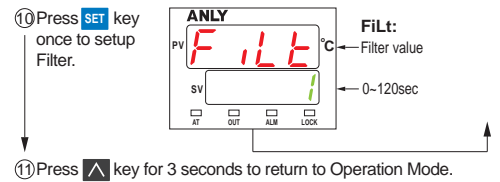
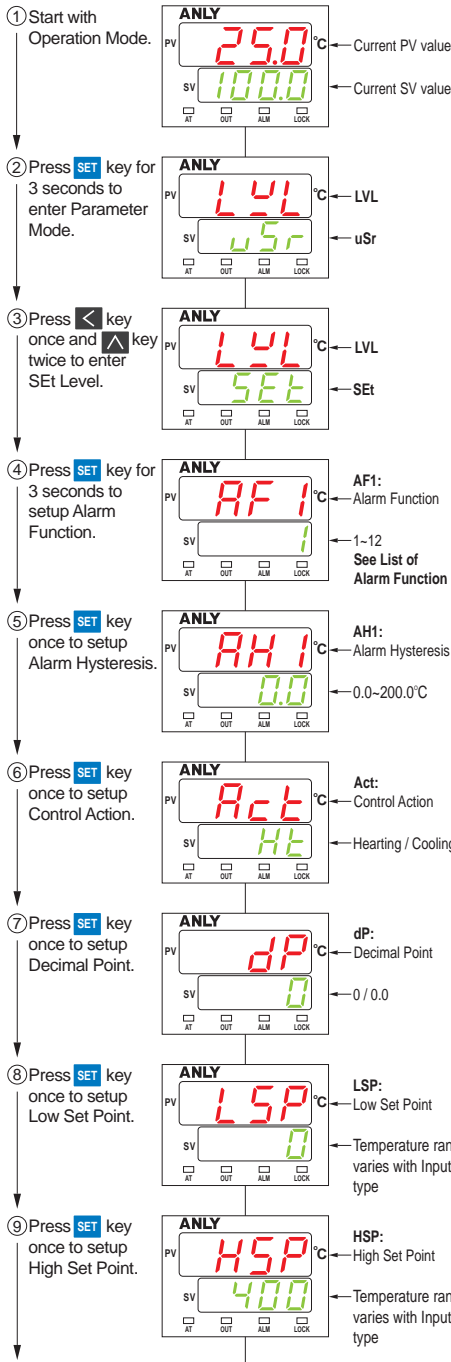
Set the DIP switch to ON/OFF Control before proceeding.



### \* SV Value Setting \*

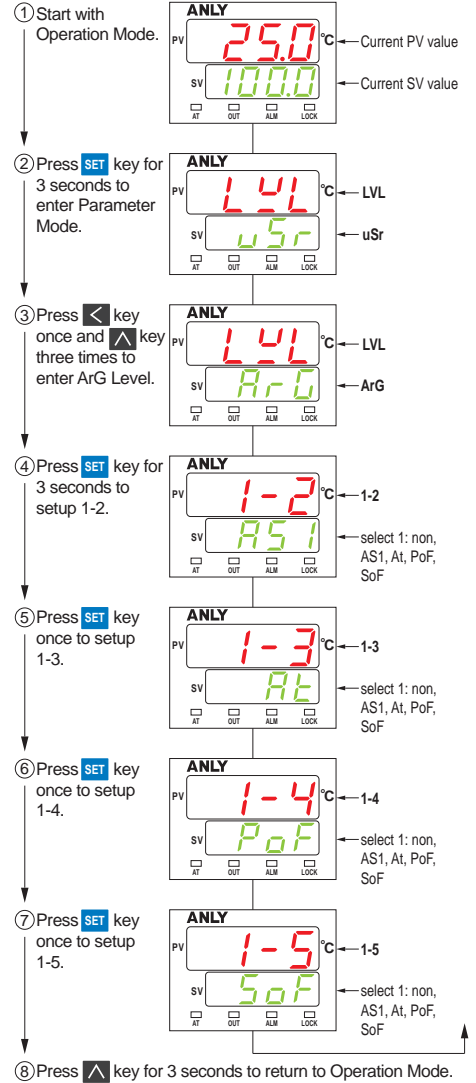


### \* Set Level Setting \*

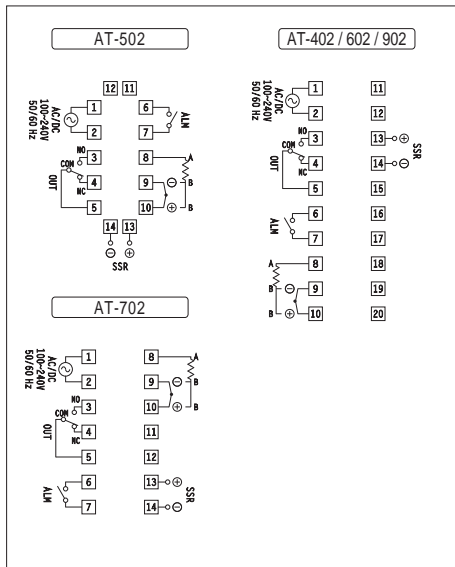


### \* Argument Level Setting \*

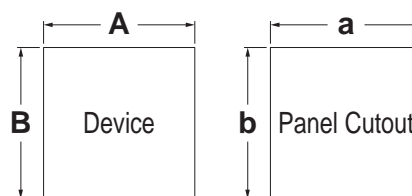
This is used to display or hide arguments under user level. Arguments can be arranged in any order, but may not be repeated.



### \* TERMINAL LAYOUT \*



### \* DIMENSIONS(mm) \*



AT02 series	A	B	a	b
AT-402	48	96	45.5 <sup>+0.5</sup>	91 <sup>+0.5</sup>
AT-502	48	48	45.5 <sup>+0.5</sup>	45.5 <sup>+0.5</sup>
AT-602	96	48	91 <sup>+0.5</sup>	45.5 <sup>+0.5</sup>
AT-702	72	72	67.5 <sup>+0.5</sup>	67.5 <sup>+0.5</sup>
AT-902	96	96	91 <sup>+0.5</sup>	91 <sup>+0.5</sup>

### \* SAFETY PRECAUTION \*

- This manual uses the following symbols to ensure safe operation of this controller.
- WARNING** Warnings are indicated when mishandling this controller might result in death or serious injury to user.
  - CAUTION** Cautions are indicated when mishandling this controller might result in minor injury to the user, or only physical damage to the controller.
  - WARNING**
    - Note this incorrect wiring of this controller can damage it and lead to other hazards. Make sure the controller has been correctly wired before turning the power ON.
    - Before wiring, or removing / mounting the controller, be sure to turn the power OFF. Failure to do so might cause electric shock.
    - Do not touch electrically charged parts such as the power terminals. Doing so might cause electric shock.
    - Do not disassemble the controller. Doing so might cause electric shock or faulty operation.
  - CAUTION**
    - Use the controller within the operating ranges recommended in the specification (temperature, humidity, voltage, shock, mounting direction, atmosphere and etc.). Failure to do so might cause fire or faulty operation.
    - Do not block ventilation holes. Doing so might cause fire or faulty operation.
    - Do not allow lead clippings, chips or water to enter the controller case. Doing so might cause fire or faulty operation.