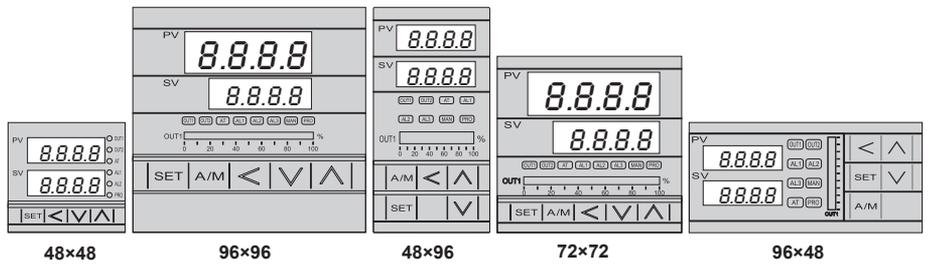


# User's Manual

## Digital PID Temperature Controller Process Controller

VER 1.3 2020-04



### 1 Notice

#### Warning

1. Beware of Electric Shock!
2. Once controller is activated, do not touch AC power wiring terminals to avoid electric shock!
3. First to confirm power is OFF, before working on the wiring of controller power supply!
4. Before using this product, please read through this operating manual thoroughly to understand the correct usage based on the fundamentals of its conten.
5. This product can be used in industrial equipment, working terminal, measurement equipment, but not in life-saving-related medical equipment.
6. In order to ensure safety even if the temperature controller fails, please set up another alarm system or safety redundancy.

#### Caution

1. Before the controller transmits power, make sure that the position of the AC power assembly leg is correct. Otherwise, the controller may be seriously damaged after power transmission is initiated.
2. Before powering on, please confirm whether the power supply voltage is in accordance with the controller's specification (AC 85~265V or DC 24V). Otherwise, the controller may be seriously damaged after power transmission is initiated.
3. Check if the wiring is connected to the terminal for the correct terminals (Input, Output).
4. Please use crimp terminals suitable for M3 screws, as shown below:
5. Do not install the controller in places subject to high-frequency interference, corrosive gases, and high temperature and humidity (normal working environment: 0 ~ 50°C, 20 ~ 90% RH.)
6. To avoid noise interference, please keep the sensor wiring away from the power cord and the loading power cord.
7. When the thermocouple lead is extended, please use the compensation lead of the corresponding type to this thermocouple.
8. When the RTD lead wire is extended, please use those with lower resistance value. Please use the same wire between the three Wires.

### 2 Basic Function Setting

#### 2.1 Changing Input Type

1. PV 88.25 SV 88.00 Display after power-on.	2. PV 11P1 SV 88.2 Hold SET key + < key 3 seconds, to enter LEVEL_3 upper display showing "11P1" with lower display showing current input type.
3. PV 11P1 SV 88.2 Press < key the lower display flashes.	4. PV 11P1 SV 8PE1 Press > key and < key to enter the intended input type.
5. PV 11P1 SV 8PE1 Press SET key to store new value of INP1.	Modify input type needs to interchange of jumper location, and it needs to recalibration for linear input type change. Please refer to chapter 5. "Input type modification".

#### 2.2 SV Setting

1. PV 88.25 SV 88.00 Display after power-on.	2. PV 88.25 SV 0000 When < key is pressed, the lower display flashes.
3. PV 88.25 SV 0.150 Press > key and < key to adjust set value.	4. PV 88.25 SV 8.150 Press SET key to store new value of SV.

#### 2.3 Setting PID Values Automatically(Autotuning)

1. PV 88.25 SV 88.150 Display after power-on.	2. PV 8AL8 SV 88.00 Press SET key until show "AT".
3. PV 8AL8 SV 88.00 When < key is pressed, the lower display flashes.	4. PV 8AL8 SV 84E5 Press > key or < key to select auto tuning execution or not.
5. PV 8AL8 SV 84E5 Press SET key to store new value of AT.	When auto tuning AT LED lamp lit and start to output, through a few circles to get new PID value with the precise control, if finished the AT LED will be lamp off.

#### 2.4 Setting PID Values Manually

1. PV 88.25 SV 88.150 Display after power-on.	2. PV 8P1 SV 88.30 Hold SET key 3 seconds, then entering into LEVEL_2 upper display showing "P1", with lower display showing current P1 value.
3. PV 8P1 SV 0030 When < key is pressed, the lower display flashes.	4. PV 8P1 SV 0500 Press > key and < key to set the intended P1 value.
5. PV 8P1 SV 8500 Press SET key to store new value of P1.	By the same procedure, use the same ways to set integral value(I1) and derivative value(D1).

#### 2.5 Controlling With ON/OFF Action

1. PV 88.25 SV 88.150 Display after power-on.	2. PV 8P1 SV 88.30 Hold SET key 3 seconds, then entering into LEVEL_2, as upper display shows "P1", with lower display showing current P1 value.
3. PV 8P1 SV 0030 When < key is pressed, the lower display flashes, upper display.	4. PV 8P1 SV 0000 Press < key until P1 = 0.0
5. PV 8P1 SV 88.00 Press SET key to store new value.	6. PV 8451 SV 88.01 Press SET key until show "HYS1"
7. PV 8451 SV 88.01 When < key is pressed, the lower display flashes.	8. PV 8451 SV 88.10 Press > key and < key to set the intended HYS1 value.
9. PV 8451 SV 88.10 Press SET key to store new value.	Heat mode formula: PVs(SV + HYS1) → OUT1 OFF PVs(SV-HYS1) → OUT1 ON Cool mode formula: PVs(SV + HYS1) → OUT1 ON PVs(SV-HYS1) → OUT1 OFF

#### 2.6 Alarm Mode Setting

1. PV 88.25 SV 88.00 Display after power-on.	2. PV 11P1 SV 88.2 Hold SET key + < key 3 seconds, then entering into LEVEL_3 upper display showing "11P1" with lower display showing current input type.
3. PV 8AL1 SV 88.11 Press SET key until show "ALD1"	4. PV 8AL1 SV 88.11 When < key is pressed, the lower display flashes.
5. PV 8AL1 SV 88.12 Press > key and < key to set the intended ALD1 value.	6. PV 8AL1 SV 88.12 Press SET key to store new value of ALD1. ※ Please refer to ch4 Alarm mode.

#### 2.7 Alarm Value Setting

1. PV 88.25 SV 88.00 Display after power-on.	2. PV 8AL1 SV 88.00 Press SET key until show "AL1"
3. PV 8AL1 SV 0000 When < key is pressed, the lower display flashes.	4. PV 8AL1 SV 0020 Press > key and < key to set the intended AL1 value.
5. PV 8AL1 SV 0020 Press SET key to store new value of AL1.	

#### 2.8 Controlling With Manual Control

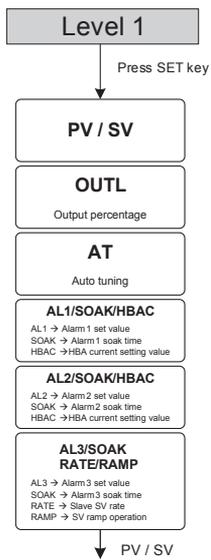
1. PV 88.25 SV 88.150 Display after power-on.	2. PV 00VL SV 88.00 Hold AM 2 seconds.
3. PV 88.25 SV 0000 When < key is pressed, the lower display flashes.	4. PV 88.25 SV 0500 Press > key and < key to set the intended output% value.
5. PV 00VL SV 8500 Press SET key to store new value.	In manual mode OUTL=100.0 · output=100.0% continuously. In manual mode OUTL=20.0 · output=20.0% continuously.

### 3 Flow Chart of Parameter Setting

#### 3.1 Level Operation Mode

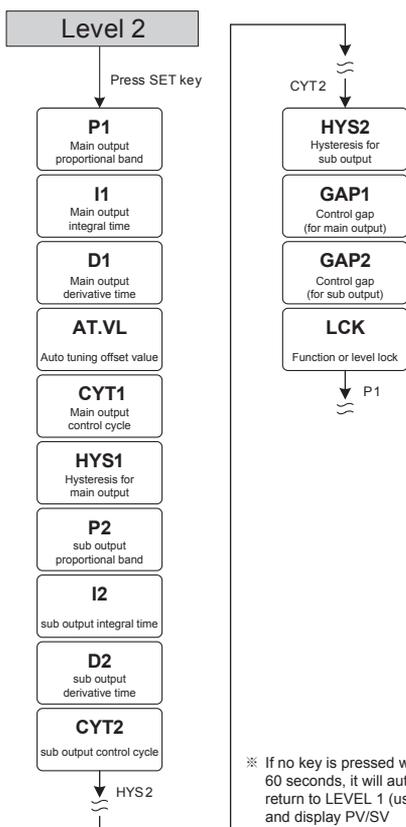
1. LEVEL 1 enter to the LEVEL 2  
Hold SET key for 3 seconds then entering LEVEL 2
2. LEVEL 1 enter to the LEVEL 3  
Hold SET key + SHIFT key for 3 seconds then entering LEVEL 3
3. LEVEL 2 return to the LEVEL 1  
Hold SET key for 3 seconds then return to LEVEL 1
4. LEVEL 2 enter to the LEVEL 3  
Hold SET key for 3 seconds then entering into LEVEL 3
5. LEVEL 2 enter to the LEVEL 4  
On the LEVEL 2 then press SET key to find parameter"LCK modify LCK value from current value to 1111 after hold SET key + SHIFT key 3 seconds entering into LEVEL 4
6. LEVEL 3 return to the LEVEL 1  
Hold SET key + SHIFT key for 3 seconds then return to LEVEL 1
7. LEVEL 3 return to the LEVEL 2  
Hold SET key for 3 seconds then return to LEVEL 2
8. LEVEL 4 return to the LEVEL 1  
Hold SET key + SHIFT key for 3 seconds then return to LEVEL 1
9. LEVEL 4 return to the LEVEL 2  
Hold SET key for 3 seconds then return to LEVEL 2
10. Any LEVEL enter to the Fast LEVEL  
Hold DOWN key for 3 seconds then entering Fast LEVEL
11. Fast LEVEL return to the LEVEL 1  
Hold DOWN key for 3 seconds then return to LEVEL 1

### 3.2 Level 1 (User Level) All Parameters Display



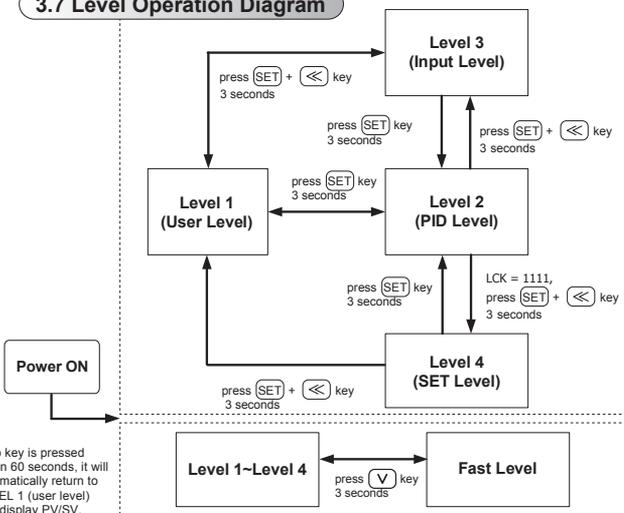
※: If no key is pressed within 60 seconds, it will automatically return to LEVEL 1 (user level) and display PV/SV

### 3.3 Level 2 (PID Level) All Parameters Display

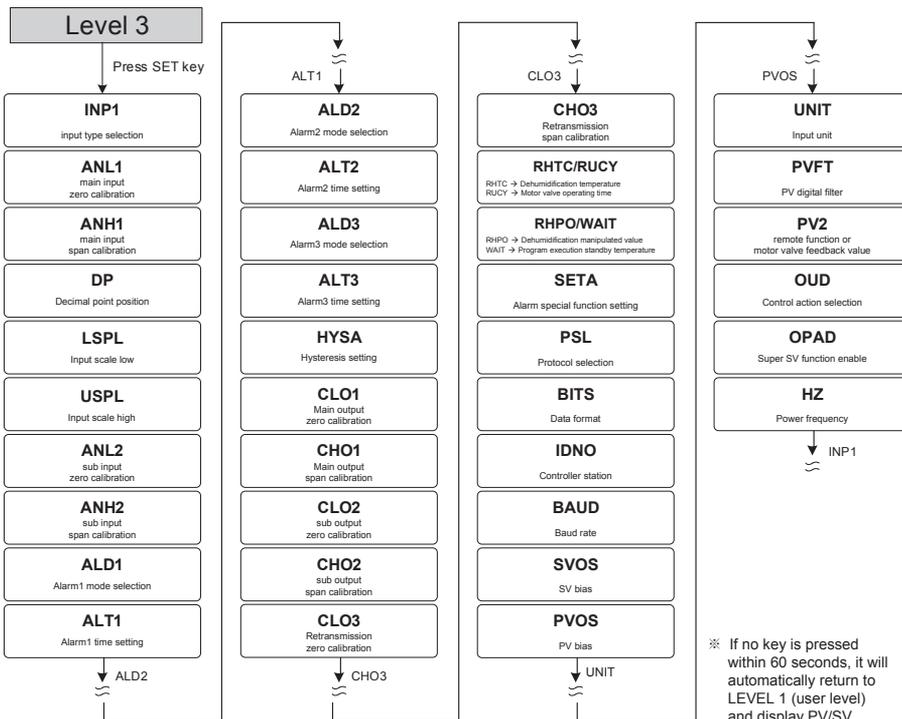


※ If no key is pressed within 60 seconds, it will automatically return to LEVEL 1 (user level) and display PV/SV

### 3.7 Level Operation Diagram

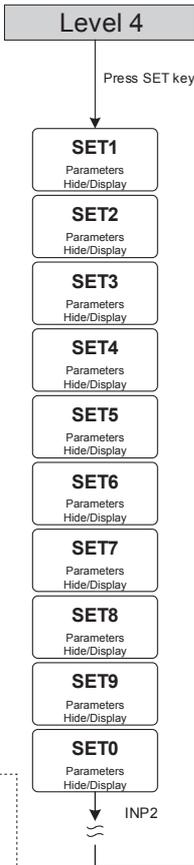


### 3.4 Level 3 (Input Level) All Parameters Display



※ If no key is pressed within 60 seconds, it will automatically return to LEVEL 1 (user level) and display PV/SV

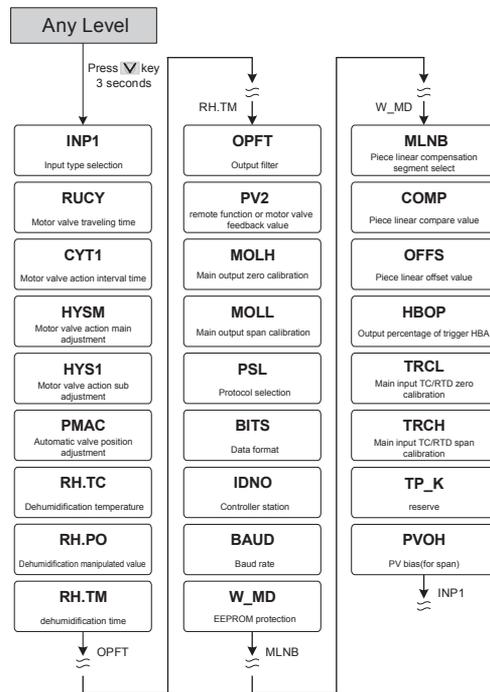
### 3.5 Level 4 (Setting Level) All Parameters Display



※ If no key is pressed within 60 seconds, it will automatically return to LEVEL 1 (user level) and display PV/SV

### 3.6 Fast Level All Parameters Display

- controller provides a fast parameter access operation, easy for users to quickly access communication group, program group, motor valve group related parameters
- Enter fast level : press down key for 3 seconds at any level
- Leave fast level : press down key for 3 seconds at fast level



### 3.8 Data Lock Function

LCK provides a parameter protection function to prevent the first line operator from touching or modifying important parameters. Conversely, when the parameter cannot be modified, please make sure that the set value of LCK.

LCK	LEVEL				Descriptions
	Level_1 USER Level	Level_2 PID Level	Level_3 INPUT Level	Level_4 SET Level	
0000	⊙	⊙	⊙	X	All parameters of Level 1, 2 & 3 are able to be modified (Factory default setting)
1111	⊙	⊙	X	⊙	All parameters of Level 1, 2 & 4 are able to be modified
0100	⊙	⊙	X	X	All parameters of Level 1, 2 are able to be modified
0110	⊙	⊙	X	X	Only parameters of Level 1 and LCK can be modified
0001	⊙	⊙	X	X	Only SV, LCK can be modified
0101	⊙	⊙	X	X	Only LCK can be modified
Other	⊙	⊙	⊙	X	Once jumping to other levels, LCK will be automatically restored to 0000

⊙ : able to enter X : unable to enter

# 4 Alarm Mode

▲ : SV    △ : Alarm set value    X : 1 / 2 / 3 (There are up to 3 sets of alarms)

ALDX	Alarm mode	Description
0	No alarm function	Not drive any alarm relays and the corresponding LED lamp.
1	Deviation high (With hold action)	
		<p>Formula</p> $PV \geq (SV + ALX) \rightarrow \text{Alarm ON}$ $PV \leq (SV + ALX + HYSX) \rightarrow \text{Alarm OFF}$
2	Deviation low (With hold action)	<p>*ALX must be set to a negative value</p>
		<p>Formula</p> $PV \leq (SV - ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV - ALX - HYSX) \rightarrow \text{Alarm OFF}$
3	Deviation high/low (With hold action)	
		<p>Formula</p> $PV \geq (SV + ALX) \rightarrow \text{Alarm ON}$ $PV \leq (SV - ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV - ALX + HYSX) \rightarrow \text{Alarm OFF}$ $PV \leq (SV + ALX - HYSX) \rightarrow \text{Alarm OFF}$
4	Band (With hold action)	
		<p>Formula</p> $PV \leq (SV - ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV + ALX) \rightarrow \text{Alarm ON}$ $PV > (SV + ALX) \rightarrow \text{Alarm OFF}$ $PV < (SV - ALX) \rightarrow \text{Alarm OFF}$
5	Process high (With hold action)	
		<p>Formula</p> $PV \geq ALX \rightarrow \text{Alarm ON}$ $PV \leq (ALX + HYSX) \rightarrow \text{Alarm OFF}$
6	Process low (With hold action)	
		<p>Formula</p> $PV \leq ALX \rightarrow \text{Alarm ON}$ $PV \geq (ALX + HYSX) \rightarrow \text{Alarm OFF}$
7	Segment execute alarm	When SEG=ALX alarm ON *This mode only available in program type controller
8	System error	The Alert action, when PV displays error message
9	HBA (Heater Break Alarm)	Activated conditions : 1. Heater current is less the HBAC set value 2. OUT1 manipulated value exceed HBOP set value 3. Conditions of 1 & 2 above are established and continue to exceed 20 seconds. *This mode only available in ALD1 or ALD2
	Single RAMP	This mode only available in ALD3
10	SOAK_A	Boot completed, the alarm is ON, when PV>target SV start the timer, alarm and control function are turned OFF in timed out.  If the RAMP function is used, even if the RAMP SV has not reached the target SV, the timer will start counting as long as the condition PV>target SV is met.
		*This mode only available in ALD1 or ALD2 *In this mode, the time format is fixed to "hour.minute"
11	Deviation high	
		<p>Formula</p> $PV \geq (SV + ALX) \rightarrow \text{Alarm ON}$ $PV \leq (SV + ALX + HYSX) \rightarrow \text{Alarm OFF}$

ALDX	Alarm mode	Description
12	Deviation low	<p>*ALX must be set to a negative value</p>
		<p>Formula</p> $PV \leq (SV + ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV + ALX + HYSX) \rightarrow \text{Alarm OFF}$
13	Deviation high/low	
		<p>Formula</p> $PV \geq (SV + ALX) \rightarrow \text{Alarm ON}$ $PV \leq (SV - ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV - ALX + HYSX) \rightarrow \text{Alarm OFF}$ $PV \leq (SV + ALX - HYSX) \rightarrow \text{Alarm OFF}$
14	Band	
		<p>Formula</p> $PV \leq (SV - ALX) \rightarrow \text{Alarm ON}$ $PV \geq (SV + ALX) \rightarrow \text{Alarm ON}$ $PV > (SV + ALX) \rightarrow \text{Alarm OFF}$ $PV < (SV - ALX) \rightarrow \text{Alarm OFF}$
15	Process high	
		<p>Formula</p> $PV \geq ALX \rightarrow \text{Alarm ON}$ $PV \leq (ALX + HYSX) \rightarrow \text{Alarm OFF}$
16	Process low	
		<p>Formula</p> $PV \leq ALX \rightarrow \text{Alarm ON}$ $PV \geq (ALX + HYSX) \rightarrow \text{Alarm OFF}$
17	Program run	SETA.4=0 When program execution, alarm action SETA.4=1 When program end, alarm action *This mode only available in program type controller
18	System normal	The Alert action, when system in normal condition (no-error message)
19	SOAK_B	Boot completed, the alarm is OFF, when PV>target SV start the timer, alarm is turned ON and the control function keep ON in timed out.  If the RAMP function is used, even if the RAMP SV has not reached the target SV, the timer will start counting as long as the condition PV>target SV is met.  *This mode only available in ALD1 or ALD2 *In this mode, the time format is fixed to "hour.minute"

# 5 Modification of Input Signal

## 5.1 Input modify to thermocouple

Jumper Position	Software Setting
Plug 2 pcs of Jumper in the middle slot as shown	
	Parameter set as "INP1=K1-L"

## 5.2 Input modify to RTD

Jumper Position	Software Setting
Plug 2 pcs of Jumper in the left slot as shown	
	Parameter set as "INP1=PT1~PT3"

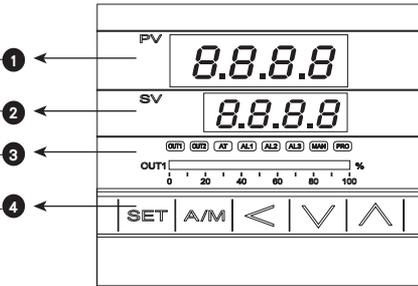
## 6 Troubleshooting

This chapter describes error displays and procedures to follow when problems occur.

Symbol	Text	description	Solution
	IN1E	Input1 Error	Check whether input loop is opened or wiring is incorrect.
	UUU1	PV is above USPL	Check whether the input value or input type is correct or not.
	NNN1	PV is below LSPL	Check whether the input value or input type is correct or not.
	CJOR	Ambient temperature over range(>50°C)	Decrease ambient temperature
	AUTF	Auto-tuning failure	Manually set the PID value
	ADCF	A/D convert failed	send for repair.
	RAMF	EEPROM failed	send for repair.
	CJCE	Cold junction diode failure	send for repair.
	TRSF	Transmission hardware failure	send for repair.
	FBER	Motor valve potentiometer feedback error	1. check the potentiometer feedback wiring 2. send for repair.

## 7 Parts Description

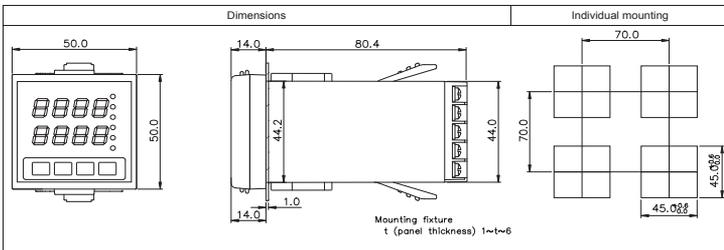
1	LED	PV	Indicating PV (measured value) and character information such as parameter codes or error codes (Red)	
		2	SV	Indicating SV (target set value) or parameter values (Green)
		3	OUT1	Lamp lit when OUT1 is activated (Green)
			OUT2	Lamp lit when OUT2 is activated (Green)
			AT	Lamp lit when Auto tuning is activated (Orange)
			AL1	Lamp lit when Alarm 1 is activated (Red)
			AL2	Lamp lit when Alarm 2 is activated (Red)
			AL3	Lamp lit when Alarm 3 is activated (Red)
			MAN	Lamp lit when controller in manual mode or get error condition (Orange)
		PRO	When the program is executed, this light is on (orange)	
OUT1%	OUT1% bar -graph indicator (Green)			
4	Keypad		SET For parameter call-up and set value registration	
			A/M Auto manual transfer	
			SHIFT Shift digits when changing settings	
			DOWN Decrease numerals	
			UP Increase numerals	



## 8 Installation

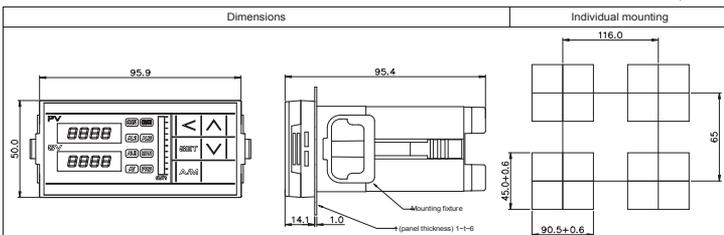
### 8.1 48x48 Dimensions

(Unit: mm)



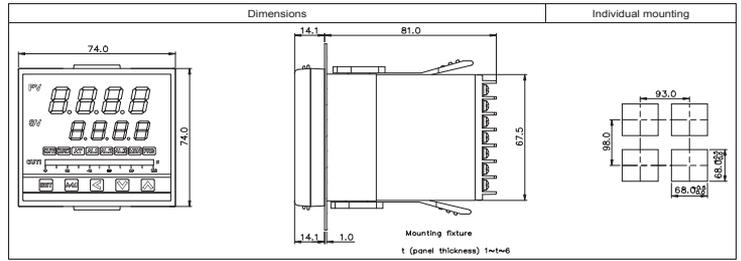
### 8.2 96x48 Dimensions

(Unit: mm)



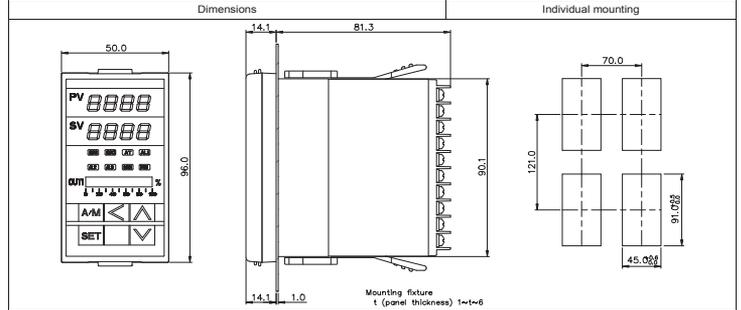
### 8.3 72x72 Dimensions

(Unit: mm)



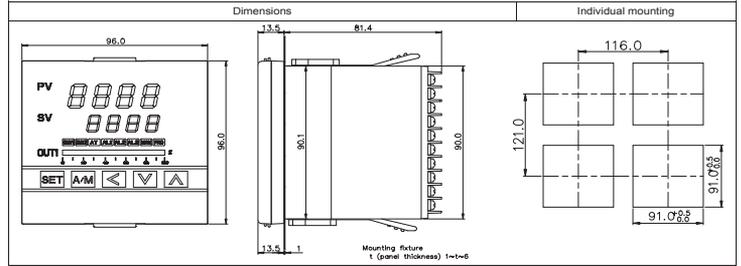
### 8.4 48x96 Dimensions

(Unit: mm)



### 8.5 96x96 Dimensions

(Unit: mm)

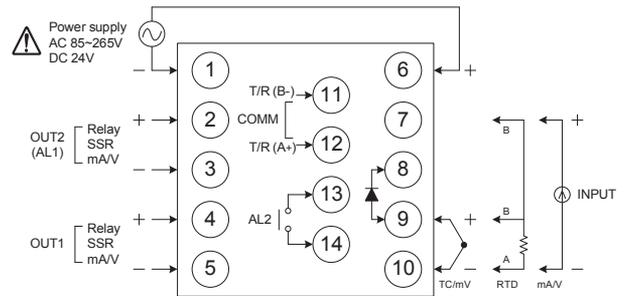


## 9 Terminal Arrangement

### Caution

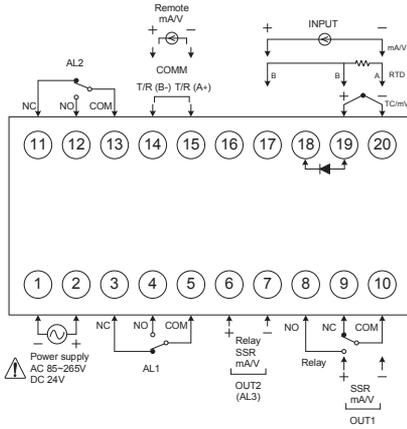
When implementing wiring for the controller power supply, please make sure that the power supply is turned off to avoid electric shock!  
Do not touch the live parts, such as the terminals, while the power is on. Otherwise death or serious injury may be resulted from short circuit of the contact electrode.

### 9.1 48x48 Terminal Arrangement



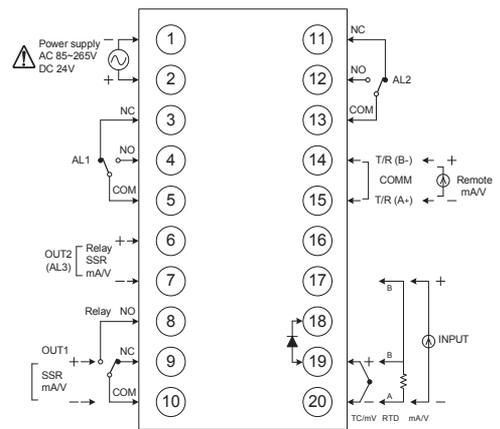
Power	① L ⑥ N ① DC 24V ⑥	Alarm-1 Alarm-2	② AL1 ③ or ④ ⑤ AL2 ⑥
Output-1	④ Relay ⑤ ④ ⑤	Communication	⑪ T/R (B-) ⑫ RS-485 ⑬ T/R (A+)
Output-2	② Relay ③ ② ③	Transmission	⑪ mA/V ⑫
1φ Zero cross	⑪ G1 ⑫ K1 ⑬ G2 ⑭ K2	Remote SV	⑪ mA/V ⑫
		CT	⑪ CT ⑫
Motor valve	② ③ CLOSE ④ OPEN ⑤ COM	Input	⑦ ⑧ ⑨ TC/mV ⑩ ⑦ mA/V ⑧ ⑨ ⑩

### 9.2 96x48 Terminal Arrangement



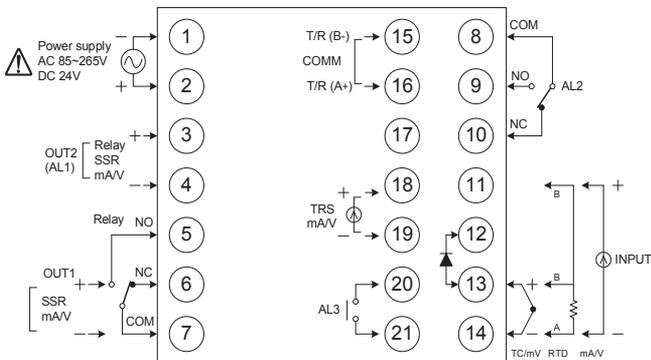
<b>Power</b>		<b>Communication</b>	
<b>Output-1</b>		<b>Transmission</b>	
<b>Output-2</b>		<b>Remote SV/CT Input</b>	
<b>Motor valve</b>		<b>Alarm 1 Alarm 2 Alarm 3</b>	
		<b>Input</b>	

### 9.4 48x96 Terminal Arrangement



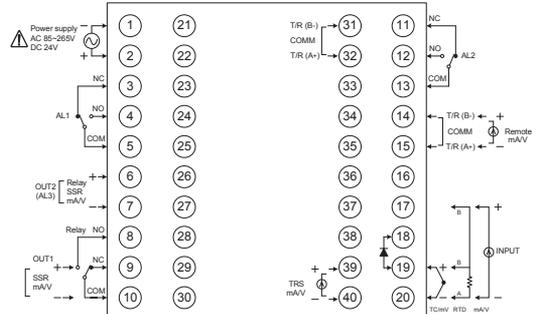
<b>Power</b>		<b>Communication</b>	
<b>Output-1</b>		<b>Transmission</b>	
<b>Output-2</b>		<b>Remote SV/CT Input</b>	
<b>Motor valve</b>		<b>Alarm 1 Alarm 2 Alarm 3</b>	
		<b>Input</b>	

### 9.3 72x72 Terminal Arrangement



<b>Power</b>		<b>Alarm 1 Alarm 2 Alarm 3</b>	
<b>Output-1</b>		<b>Communication</b>	
<b>Output-2</b>		<b>Transmission</b>	
<b>1φ Zero cross/Phase angle</b>		<b>Remote SV</b>	
	<b>Motor valve</b>		<b>CT Input</b>
		<b>Input</b>	

### 9.5 96x96 Terminal Arrangement



<b>Power</b>		<b>Motor valve</b>	
<b>Output-1</b>		<b>Alarm 1 Alarm 2 Alarm 3</b>	
<b>Output-2</b>		<b>Communication</b>	
<b>3φ Zero cross</b>		<b>Transmission</b>	
	<b>1φ Zero /Phase angle</b>		<b>Remote SV/CT Input</b>
		<b>Input</b>	

# 10 Specifications

Model	48x48	96x48	72x72	48x96	96x96
Supply Voltage	AC 85 ~ 265V, DC 24V(Optional Functions)				
Power Frequency	50/60 Hz				
Power Consumption	Approximately 6VA				
Memory	Non-Volatile Memory EEPROM				
Sensor Input	Cold junction compensation diode external Accuracy : 0.1%				
	Cold junction compensation diode internal Accuracy : 0.3%				
	Sample time : 50ms				
	Thermalcouple: (K · J · R · S · B · E · N · T · W · PL II · L)				
※ Please refer to Input Range Table					
Output	OUT1 Relay	1a SPST-NO, 250 VAC, 5A (resistive load), electrical life: 100,000 operations 1c SPDT-NO, 250 VAC, 5A (resistive load), electrical life: 50,000 operations SPDT-NC, 250 VAC, 2A (resistive load), electrical life: 20,000 operations			
	OUT2 Relay	SPST-NO, 250 VAC, 5A (resistive load), electrical life: 100,000 operations			
	SSR Driver	ON: 24 V OFF: 0V max. load current: 20mA, with short circuit protection circuit			
	linear	4~20mA, 0~20mA, 0~5V, 0~10V, 1~5V, 2~10V			
Control Method	ON-OFF or P · PI · PID control				
Alarm	Alarm 1	1a	1c	1a	1c
	Alarm 2 SPST-NO	250 VAC, 5A (resistive load), electrical life: 100,000 operations			
	Alarm 3	---	1a	1a	1a

Model	48x48	96x48	72x72	48x96	96x96
TRS	Re-transmitted Signal	4~20mA · 0~20mA · 0~5V · 0~10V · 1~5V · 2~10V			
	Source of Re-transmission	SV · PV			
	Accuracy	0.1%			
Remote SV	Resolution	14 bit			
	Signal	4~20mA · 0~20mA · 0~5V · 0~10V · 1~5V · 2~10V			
Motor valve	Resolution	18 bit			
	controlled by	SV			
Comm unication	Signal	1KΩ · 560Ω			
	Resolution	18 bit			
	controlled by	PV2			
	Interface	RS-485 Half duplex Communication MAX. 31 units, MAX. distance 1200 meters			
Comm unication	Protocol	Modbus RTU , TAIE			
	Parity bit	NONE, ODD, EVEN			
	Data bit	8 bit			
	Stop bit	1 or 2 bit			
Comm unication	Baud rate	2400,4800,9600,19200,38400,57600,115200 bps			
	Operating Environment Temperature/Humidity	0 ~ 50°C (in the case of no freezing or condensation) / 20% ~ 90% RH			
Comm unication	Storage Environment Temperature	-25 ~ 65°C (in the case of no freezing or condensation)			
	Dimension (mm)	W48 x H48 x D95	W96 x H48 x D95	W72 x H72 x D95	W48 x H96 x D95
weight	Approx.120g	Approx.170g	Approx.150g	Approx.170g	Approx.230g

# 11 Order Information

Output 1	Output 2	Alarm	TRS	Remote	COMM	Input type	Power	Accessories
1 0 None 1 Relay 2 Voltage Pulse (SSR Drive) 3 4~20mA 4 0~20mA A 0~5V B 0~10V C 1~5V D 2~10V 5 1φSCR zero cross control 6 3φSCR zero cross control 7 Motor valve control 8 1φSCR phase angle control	0 0 None 1 Relay 2 Voltage Pulse (SSR Drive) 3 4~20mA 4 0~20mA A 0~5V B 0~10V C 1~5V D 2~10V	1 0 None 1 1 Set 2 2 Sets 3 3 Sets A HBA B HBA+AL2 C HBA+AL2+AL3	0 0 None 1 4~20mA 2 0~20mA A 0~5V B 0~10V C 1~5V D 2~10V	0 0 None 1 4~20mA 2 0~20mA A 0~5V B 0~10V C 1~5V D 2~10V M Motor valve control feedback	0 0 None 1 TTL 2 RS-485	0 1 See input Range type code	A D AC 85-265V DC 24V	N T W R None Terminal Cover IP65 Terminal Cover +IP65

※ Block means optional functions with additional charge  
 ※ HBA : Heater Break Alarm (HBA must use AL1 as alarm relay)

# 12 Input Type Table

## Input Range Table

Types of input	Code	Range		
		°C	°F	
Thermalcouple	K	K1	01 -50.0~600.0	-58.0~999.9
		K2	02 -50~1200	-58~2192
	J	J1	03 -50.0~400.0	-58.0~752.0
		J2	04 -50~1200	-58~2192
	R	05 -50~1760	-58~3200	
	S	06 -50~1760	-58~3200	
	B	07 -50~1820	-58~3308	
	E	08 -50~900	-58~1652	
	N	09 -50~1300	-58~2372	
	T	T1	10 -199.9~400.0	-199.9~752.0
		T2	11 -199~400	-326~752
	W	12 -50~2320	-58~4208	
	PL	13 -50~1200	-58~2192	
	L	14 -50~800	-58~1472	

Types of input	Code	Range			
		°C	°F		
RTD	PT100	PT1	15 -199.9~850.0	-199.9~999.9	
		PT2	16 -199~850	-326~1562	
		PT3	17 0~850	32~1562	
Linear	AN1	0~25mV	18		
		0~50mV	19		
		0~20mA	20		
		0~1V	21		
	AN2	0~2V	22	-1,999~9,999	
		0~5V	23	-199.9~99.99	
		0~10V	24	-199.9~999.9	
		0~70mV	25	-1999~9999	
	AN3	4~20mA	26		
		10~50mV	27		
		1~5V	28		
		2~10V	29		

