08-PT76XX-B0-EM, 04/07/2011

FineTek **TEMPERATURE CONTROLLER**

PT-7610 PT-7620 PT-7630

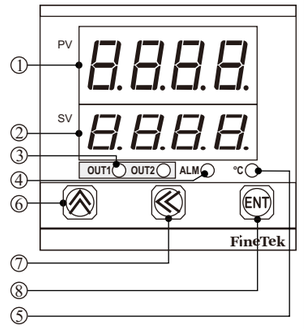
PT-7631 PT-7640 PT-7650

Content of the packaging

- Noumenon
- Back cover
- Bracket (2pcs)
- Washer
- User' s manual

Thank you for please read the User' s manual first before buying Fine-Tek products and using and is familiar with product performance and every function, please keep the user' s manual so that consult in future. Modbus communication can be downloaded from **http: //www.fine-tek.com**

FRONT PANEL



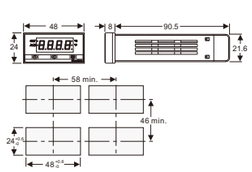
① Process value,and functions display. (Red 7-segment)
② Setting value,and parameters display. (Green 7-segment)
③ Control output indicator
④ Alarm indicator.
⑤ Unit indicator Lighted:°C Unlighted:°F.
⑥ "Up" key: addition and mode change.
⑦ "Shift" key: position shift.
⑧ "Enter" key: confirmation.

DIMENSION / PANEL CUTOUT unit: (mm)

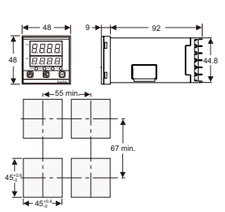
TERMINAL ARRANGEMENT

★ Please inspect the specification of the power.
★ Don't connect the end Terminals not used.
★ Propose that the signal line uses AWG 18~24 to enclose the isolate wire, the main power cable and relay export the contact and use AWG 25~30.

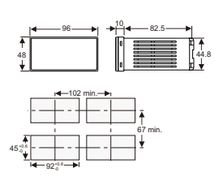
PT-7610 48mm(W)x24mm(H)x98.5mm(D)



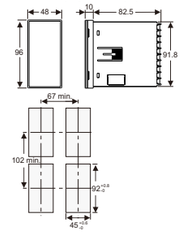
PT-7620 48mm(W)x48mm(H)x101mm(D)



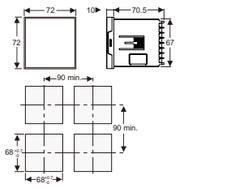
PT-7630 96mm(W)x48mm(H)x92.5mm(D)



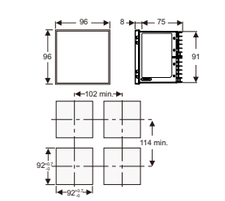
PT-7631 48mm(W)x96mm(H)x92.5mm(D)

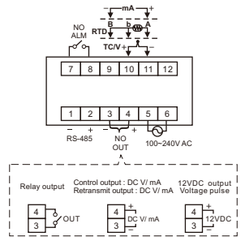


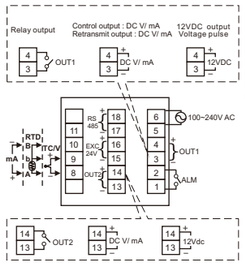
PT-7640 72mm(W)x72mm(H)x80.5mm(D)

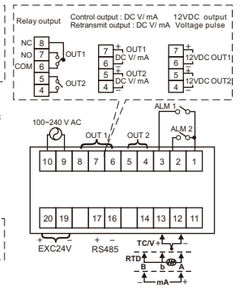


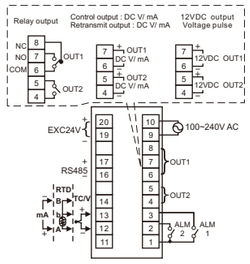
PT-7650 96mm(W)x96mm(H)x83mm(D)

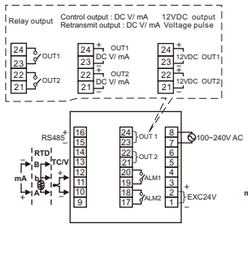


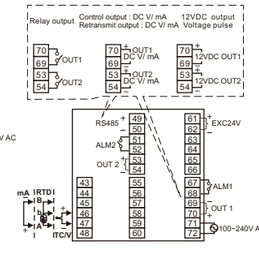












SPECIFICATIONS

Power Supply		DC: 20~36Vdc ※Except PT-7610 AC: 100~240Vac 50/60Hz
Power Consumption		7A Max.
Control Output	**Relay**	Output: SPST- 3A/250Vac (Life Time:100,000 times)
	Pulse (Driven by SSR)	12Vdc (NPN), 20mA Max.
	Analog	4~20mA, 0~10Vdc (600Ω Max.)
Alarm Output		SPST-NO, 3A/250Vac
Alarm Delay Time		0~99s
Alarm Output Hysteresis Adjustment		0~9999
Communication Interface		RS485 Output
Working Temperature		0~50°C (20~85% RH)
Cycle Time of Output Control		0.5~999.9s
Control Method		ON/OFF or PID +Fuzzy(Auto Tuning)
Input Compensation		-1999~9999
Sampling Time		250 ms
Accuracy		0.3%±1digit

ERROR MESSAGES

HHHH	Display over scale
LLLL	Display under scale
HHHH	Over measure range
LLLL	Under measure range
----	Sensor break

Warning!

1. Really lock the end Terminals screw, if the screw has not been locked but lost by causing the fire or mechanical breakdown.
2. Please don't be using this product and having places where we can fire gas, cause the risk of exploding by the fact that it may.
3. The life-span of the relay must depend on the user's usage, the use of the relay must be in specified load and life-span of electric apparatus that it labels, if the use of the relay exceeds its life-span, the danger that may melt or cause the fire in the contact of the relay.
4. Don't disassemble, repair or revise the products without authorization, this measure may cause the short circuit of the electric apparatus, trouble or fire.
5. Don't drop inside products by chip or chip of wire metal, will cause the short circuit and account or fire.

Caution! Please strictly observe the following instructions, it can guarantee this safe operation in anticipated cases of controller:

- Use the product within the ratings specified for submerging in water and exposure to oil.
- Do not use the product in locations subject to vibrations or shocks. Using the product in such locations over a long period may result in damage due to stress.
- Do not use the product in locations subject to dust, corrosive gasses, or direct sunlight.
- Separate the input signal devices, input signal cables, and the product from the source of noise or high-tension cables producing noise.
- Separate the product from the source of static electricity when using the product in an environment where a large amount of static electricity is produced (e.g., Forming compounds, powders, of fluid materials being transported by pipe).
- Organic solvents (such as pain thinner), as well as very acidic or basic solutions might damage the outer casing of the Temperature controller.
- Store at the specified temperature. If the Temperature controller has been stored at a temperature of less than -10°C, allow the Counter to stand at room temperature for at least 3 hours before use.
- Wait 30 minutes after power on before calibration .

FUNCTION LIST

Main Item	Sub Item	Data Range	Default Value	Describe
RUN	SoFt	OFF~2	0	Alarm soft activation
	Po S1	-1999~9999	0	Alarm Relay Position 1
	HYS1	0000~9999	0	Alarm Relay Hysteresis 1
	dY1	00~99	00 SEC	Alarm Relay Delay Time 1
	d, r1	H, /L0	H,	Alarm Relay Direction 1
	St1	St1~St8	St1	Alarm Relay Style 1
	St1	St8		Alarm follow the action of out1
		St10		Alarm follow the action of out2
	Po S2	-1999~9999	0	Alarm Relay Position 2
	HYS2	0000~9999	0	Alarm Relay Hysteresis 2
	dY2	00~99	00 SEC	Alarm Relay Delay Time 2
	d, r2	H, /L0	H,	Alarm Relay Direction 2
	St2	St1~St8	St1	Alarm Relay Style 2
	St8			Alarm follow the action of out1
		St10		Alarm follow the action of out2
SCAL	SV	-1999~9999	0	Set Value SV
	dot	0~3	0	Decimal point set
	SCH	-1999~9999	9999	Scale upper limit value
	SCL	-1999~9999	0	Scale lower limit value
	L, EH	-1999~9999	9999	Limit Hi (Max. Value of SV range)
	L, EL	-1999~9999	-1999	Limit Lo (Min. Value of SV range)
CtrL	oPEr	P, d/onoF	ON/OFF	Operation
	tUn	tUn/oFF	OFF	Auto Tuning
	b, AS	-1999~9999	0	PV input bias
	oFSt	-1999~9999	0	SV offset value during auto tuing

Main Item	Sub Item	Data Range	Default Value	Describe
CtrL	P	0~9999	3	P Value
	I	0~9999	200	I Value
	d	0~9999	20	D Value
	ERrE	0.0~100.0	0	Manual Reset
	F, Lt	1~50	1	Input digital Filter
	EodE	H-C	H-C	Hold temperature over room tempereture
		Cool		Hold temperature below room tempereture
	oUt1	HERt	HERt	Heater is controlled by out1
		Cool		Cooler is controlled by out1
	oUt2	HERt	Cool	Heater is controlled by out2
		Cool		Cooler is controlled by out2
	d, r1	H, /Lo	H,	Control output direct/reverse operation 1
	d, r2	H, /Lo	H,	Control output direct/reverse operation 2
	CYC1	0.5~999.9	15 sec	Cycle Time 1 (Second)
	CYC2	0.5~999.9	15 sec	Cycle Time 2 (Second)
	HYS1	0~9999	0000	Control output Hysteresis 1
	HYS2	0~9999	0000	Control output Hysteresis 2
	dbon	on/oFF	OFF	Deadband control
	dEb1	-1999~9999	0	Deadband parameter of Heater
	dEb2	-1999~9999	0	Deadband parameter of cooler
	LbR	0~9999	0	Loop break alarm

A:R B:b C:C D:d E:E F:F G:G H:H I:, J:J
K:K L:L M:E N:n O:o P:P Q:q R:r S:S T:t
U:U V:U W:3 X:H Y:Y Z:2
※dot **Except TC/RTD input**

Main Item	Sub Item	Data Range	Default Value	Describe
CoME	Ad	0~255	9600	Device ID No.
	bPS	600		BaudRate:600
		1200		BaudRate:1200
		2400		BaudRate:2400
		4800		BaudRate:4800
		9600		BaudRate:9600
		19200		BaudRate:19200
	StYL	8n1	8n1	8 data bit ; No Parity ; 1 Stop Bits
		8n2		8 data bit ; No Parity ; 2 Stop Bits
		8o1		8 data bit ; Odd Parity ; 1 Stop Bits
		8E1		8 data bit ; Even Parity ; 1 Stop Bits
	FonT	HEX	HEX	Hex
		ASCI		Ascii
toCY	LAbE	Lb00	Lb00	Lock Label 0
		Lb01		Lock Label 1
		Lb02		Lock Label 2
		Lb03		Lock Label 3
	PS3d	0~999	0	Password protection
	P3SU	YES/no	no	Quick SV setup protection
	ERnU	oFF/on	on	Allow entry manual mode
	P EE	oFF/on	oFF	EEPROM protection
	dEF	YES/no	no	Default to factory setting
	rtrn	0~99	10	Sceen return time (S)

Special mean entry method

Measurement	Input Type	Indication	Range
TC (°C)	K Type	K C (default)	-200~1370°C
	K Type	K. C	-128.0~500.0°C
	J Type	J C	-200~1200°C
	J Type	J. C	-128.0~500.0°C
	T Type	t C	-200~400°C
	T Type	t. C	-128.0~400.0°C
	E Type	E C	-200~800°C
	R Type	r C	0~1760°C
	S Type	S C	0~1760°C
	B Type	b C	0~1820°C
	N Type	n C	-200~1300°C
RTD (°C)	PT Type	Pt C	-200~850°C
	PT Type	Pt. C	-199.9~850.0°C
	JPT Type	JPt C	-200~500°C
	JPT Type	JPt.C	-199.9~500.0°C
TC (°F)	K Type	K F	-328~2498°F
	K Type	K F	-199.9~932.0°F
	J Type	J F	-328~2192°F
	J Type	J. F	-199.9~932.0°F
	T Type	t F	-328~752°F
	T Type	t. F	-199.9~752.0°F
	E Type	E F	-328~1472°F
	R Type	r F	32~3200°F
	S Type	S F	32~3200°F
	B Type	b F	32~3308°F
	N Type	n F	-328~2372°F
RTD (°F)	PT Type	Pt F	-328~1562°F
	PT Type	Pt. F	-199.9~999.9°F
	JPT Type	JPt F	-328~932°F
	JPT Type	JPt F	-199.9~932.0°F
V	0~50mV	E U	-1999~9999
	0~1V	0- 1	-1999~9999
	0~5V	0- 5	-1999~9999
	1~5V	1- 5	-1999~9999
	0~10V	0- 10	-1999~9999
	2~10V	2- 10	-1999~9999
mA	0~20mA	R020	-1999~9999
	4~20mA	R420	-1999~9999

Type R and S ±8°C for 0 to 500°C
Type B accuracy is not guaranteed for 0 to 600°C

DESCRIPTION OF PARAMETERS

HYS Control output hysteresis	You can set a hysteresis around the set point to prevent chattering
ERrE Manual reset	In PID control, I=0, PV=SV, reset the control output to "ERrE" value
F, Lt PV input filter	This function should be used the PV display value may fluctuate greatly,for example, when the measured input signal contains noise. If a larger time constant is set, the filter can remove more noise.
CYCL Cycle time	The cycle time is the period of on/off repetitions of a relay or voltage pulse output in time proportional PID control. The ratio of the ON time to the cycle time is proportional to the control output value. If output for the relay, setting has to be more than 15.
d, r Direction of relay	
LoCK Function list lock	You can set the mode of function lists which can be displayed and edited.

FUNCTION LOCK

LOCK	Lb03	Lb02	Lb01	Lb00
RUN				
SoFt				○
Po S1			○	○
HYS1				○
dY1				○
d, r1				○
St1				○
Po S2			○	○
HYS2				○
dY2				○
d, r2				○
St2				○
SCAL				
SV		○	○	○
dot				○
SCH				○
SCL				○
L, EH				○
L, EL				○
bn, t				○
PErE				○
SCH,				○
SCL,				○

LOCK	Lb03	Lb02	Lb01	Lb00
CtrL				
oPEr			○	○
tUn			○	○
b, AS			○	○
oFSt			○	○
P			○	○
I			○	○
d			○	○
ERrE			○	○
F, Lt			○	○
EodE			○	○
oUt1			○	○
oUt2			○	○
d, r1			○	○
d, r2			○	○
CYC1			○	○
CYC2			○	○
HYS1			○	○
HYS2			○	○
dbon			○	○
dEb1			○	○
dEb2			○	○
LbR			○	○

LOCK	Lb03	Lb02	Lb01	Lb00
CoME				
Ad				○
bPS				○
StYL				○
FonT				○
toCY				
LAbE	○	○	○	○
PS3d	○	○	○	○
P3SU	○	○	○	○
ERnU				○
P EE				○
dEF				○
rtrn				○

SAFETY SETUP

LB00: Parameter Open
LB01: Alarm, SV, and CTRL setup only
LB02: SV setting only
LB03: Lock setup only, other parameters are not available for setup

PARAMETERS OF HYSTERESIS LIST

	Heater	Cooler
SV+ dEb2 SV SV+ dEb1	Disable	Enable
	Disable	Disable
	Disable	Disable
	Enable	Disable

dEb1<0,dEb2>0

	Heater	Cooler
SV+ dEb1 SV SV+ dEb2	Disable	Enable
	Enable	Enable
	Enable	Enable

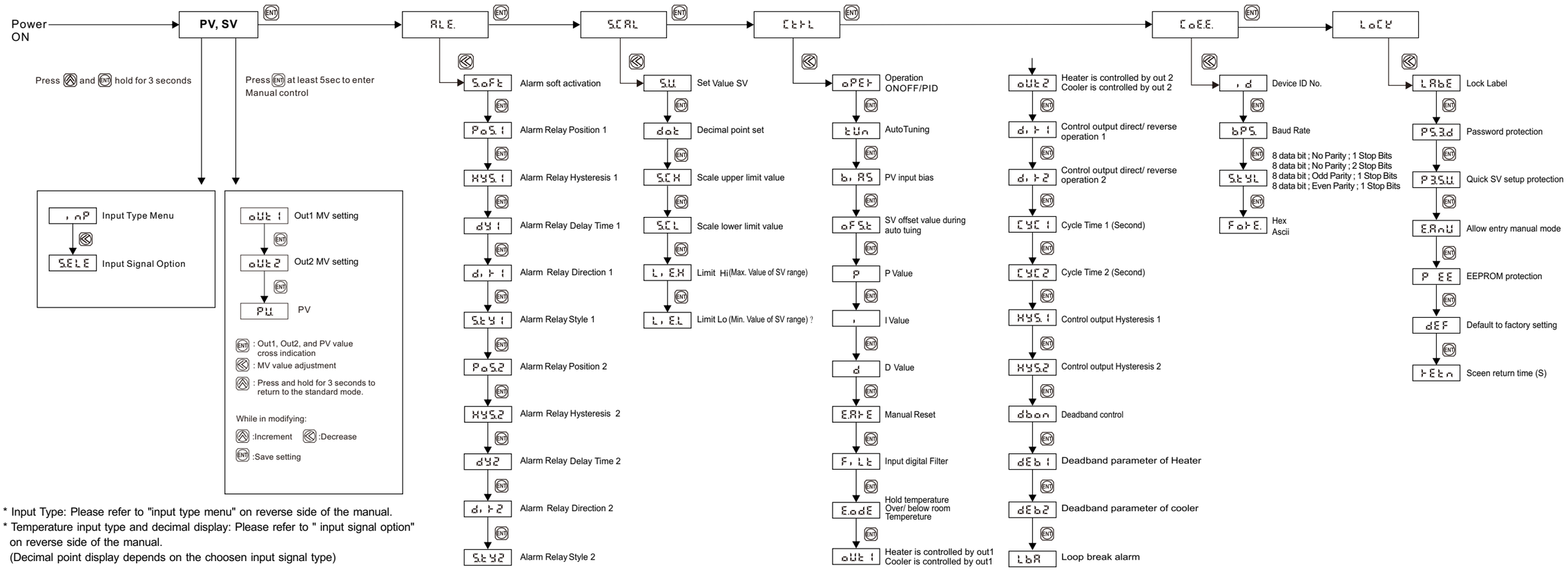
dEb1>0,dEb2<0

Disable : Inhibit output
Enable : Enable control output to follow PID/ON-OFF control algorithm

Special menu entry method

Main Item	Key Combinations	Describe	Notes
In P	Press and hold for 3 seconds	Input Signal Option	Reference list of input signal
ERnU	Press 5 seconds	Manual control	Reference Program setting flowchart

PROGRAM SETTING FLOWCHART



* Input Type: Please refer to "input type menu" on reverse side of the manual.
* Temperature input type and decimal display: Please refer to " input signal option" on reverse side of the manual.
(Decimal point display depends on the choosen input signal type)

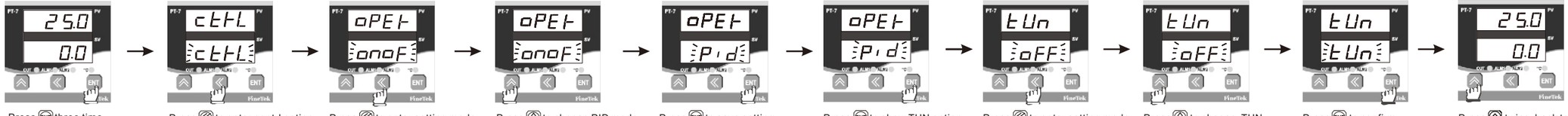
SETTING PRECEGURE DIAGRAM

1.Quick Setup

If SV=100, the setup procedure is as below:

Press to enter SV setting mode → Press to Modifd → Press to shift to four digit position → Press to set 100.0 → Press to save setting

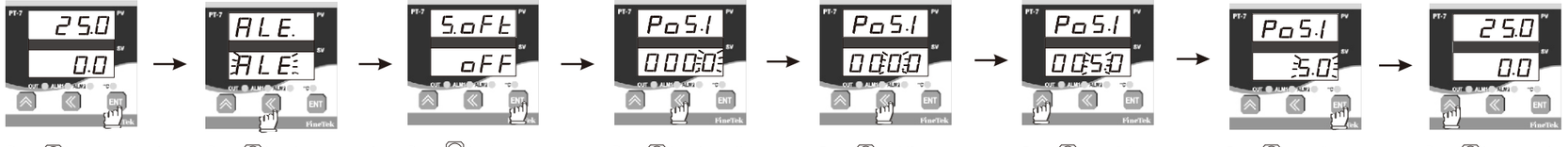
2. Auto Tuning



Press three time → Press to enter contrl option → Press to enter setting mode → Press to choose PID mode → Press to save setting → Press to show TUN option → Press to enter setting mode → Press to choose TUN → Press to confirm → Press twice back to main screen

*Flashing SV indicate that Auto Tune is executing.

3. Alarm Setting



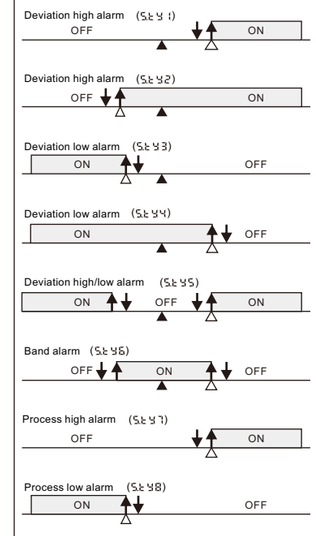
Press to show ALM option → Press to enter Alarm option → Press to show alarm position 1 option → Press to enter setting mode → Press to shift to two digit position → Press to set 5.0 value → Press to confirm → Press twice back to main screen

*There are eight different Alarm modes, please refer Alarm mode setting table.

ALARM MODE SETTING

All can with Hysteresis and de-energized function for ON/OFF control

▲: SV △: Alarm Setting Value (Pos.) ▼: Hysteresis Setting Value (HYS.)



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