



EPC4-1 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.

SAFETY PRECAUTION

This manual uses the following symbols to ensure safe operation of this timer.

- WARNING** Warnings are indicated when mishandling this product might result in death or serious injury to user.
- CAUTION** Cautions are indicated when mishandling this product might result in minor injury to the user, or only physical damage to the timer.

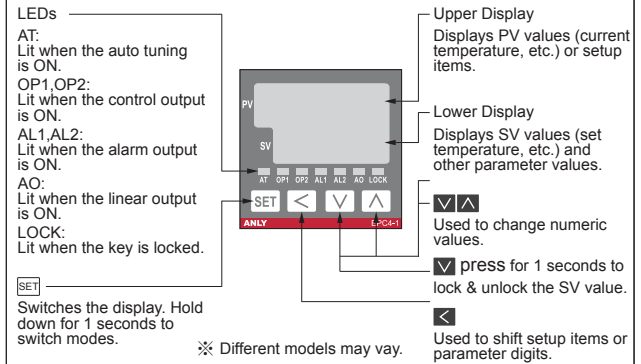
WARNING

- Note this incorrect wiring of this product can damage it and lead to other hazards. Make sure the product has been correctly wired before turning the power ON.
- Before wiring, or removing / mounting the product, 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 product. Doing so might cause electric shock or faulty operation.

CAUTION

- Use the product within the operating ranges recommended in the specification (temperature, humidity, voltage, shock, mounting direction, atmosphere etc.). Failure to do so might cause fire or faulty operation.
- Firmly tighten the wires to the terminal. Insufficient tightening of the wires to the terminal might cause fire.

NAMES AND FUNCTIONS OF FACEPLATE



INITIALIZATION

1. Make sure the key lock code value is (1122), as shown below.

LOCK
1122

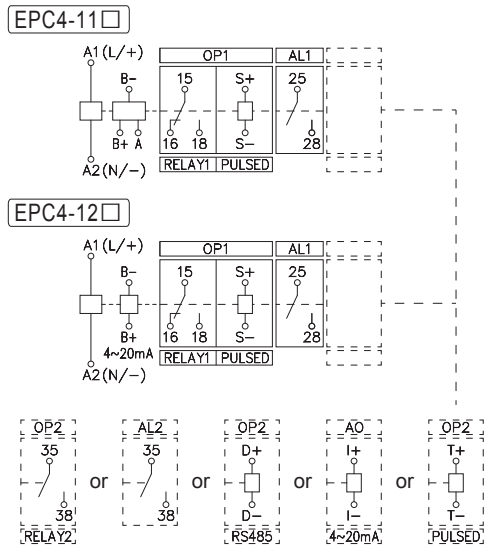
- Turn off the power.
- Press and hold both SET & A key at the same time. Turn on the power till the Display is shown, then release key, as shown below.

8888
8888

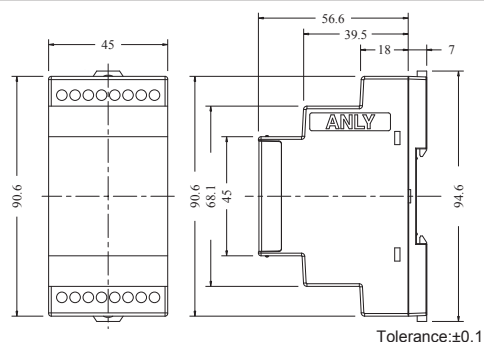
SPECIFICATIONS

Operating voltage	AC/DC(V) : 100 - 240		
Allowable operating voltage range	85 ~ 110% of rated operating voltage		
Rated frequency	50 / 60 Hz		
Input	EPC4-11□	Thermocouple	K, J, T, R, E, S, B, N
	EPC4-12□	Analog	RTD Pt100, JPt100
Output1	EPC4-1□□	Relay(OP1)	240VAC 3A, resistive load
		Pulsed(OP1)	Voltage Pulse ~ DC 20V
Output2	EPC4-1□1	Relay(OP2)	240VAC 3A, resistive load
	EPC4-1□2	Relay(AL2)	240VAC 3A, resistive load
	EPC4-1□3	Communication	RS-485
	EPC4-1□4	Analog	Current(4~20mA)
	EPC4-1□5	Pulsed(OP2)	Voltage Pulse ~ DC 20V
Alarm1 output	Relay (240VAC 3A, resistive load)		
Control method	PID, PI, P, ON/OFF, Dead Band		
Power consumption	Approx. 3.5VA		
Life	Mechanical : 5,000,000 times Electrical : 100,000 times		
Ambient temperature	-10 ~ +50°C (without condensation & freezing)		
Ambient humidity	35 ~ 80%RH (without condensation)		
Altitude	MAX 2000m		
Weight	Approx. 139g		

CONNECTIO



DIMENSIONS : (mm)



FEATURES

Measuring accuracy	Within ±0.3% of present value or ± 2°C whichever is greater
Proportional band(P)	0.1 ~ 3000 (0.1 units)
Integral time(I)	0 ~ 7200sec (1-second units)
Derivative time(D)	0 ~ 1800sec (1-second units)
Control period	1 ~ 65sec (1-second units)
Sampling period	250ms
Memory protection	EEPROM (write cycles : Approx. 100,000)

【Table 1】 Key Lock Mode

	LOCK	USER	ENTL	SET	HIDE
1	○	○	X	X	X
2	○	○	○	X	X
3	○	○	○	○	X
4	○	○	○	○	○

【Table 4】 Input Mode

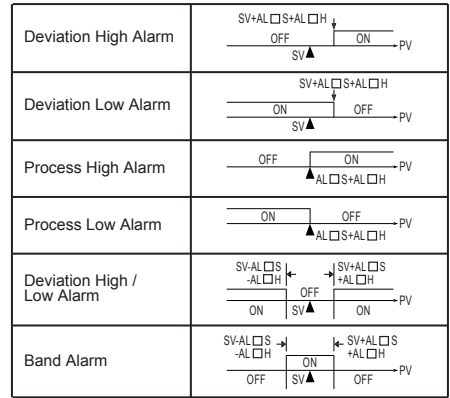
1	K, J, R, Pt100 Sensor input	EPC4-11□
2	4~20mA Analog input	EPC4-12□

【Table 5】 Output 2 Mode

0	None	EPC4-1□0
1	Relay (OP2)	EPC4-1□1
2	Alarm 2 (Relay)	EPC4-1□2
3	RS-485 Communication	EPC4-1□3
4	4~20mA Analog Output	EPC4-1□4
5	SSR (OP2)	EPC4-1□5

【Table 2】 Alarm Function

1	Deviation High Alarm	-200.0~200.0
2	Deviation Low Alarm	-200.0~200.0
3	Process High Alarm	Input type see (Table 3)
4	Process Low Alarm	
5	Deviation High / Low Alarm	0.0~200.0
6	Band Alarm	0.0~200.0
7	Deviation High Alarm (Standby)	-200.0~200.0
8	Deviation Low Alarm (Standby)	-200.0~200.0
9	Process High Alarm (Standby)	Input type see (Table 3)
10	Process Low Alarm (Standby)	
11	Deviation High/Low Alarm (Standby)	0.0~200.0
12	Band Alarm (Standby)	0.0~200.0



【Table 3】 input setting

K	0~1200°C, 32~2192°F
J	0~800°C, 32~1472°F
T	-200~400°C, -328~752°F
R	0~1700°C, 32~3092°F
E	0~600°C, 32~1112°F
S	0~1700°C, 32~3092°F
B	0~1800°C, 32~3272°F
N	-200~1300°C, -328~2372°F
PT-100	-200~400°C, -328~725°F
JPT-100	-200~400°C, -328~725°F
Analog (Note 6)	-999~3200

【Table 6】 Communication Parameters and Addresses

	0B	PI	16	RLIH	21	RLS	2C	1-6
01	LOCK	0C	11	RLZF	22	RLHS	2D	1-7
02	SV	0D	d1	RLZH	23	RD	2E	PYHS
03	RLIS	0E	ct1	Rct	24	RDLS	2F	Pid
04	RLTS	0F	P2	dP	25	RDHS	30	inp
05	Rt	10	i2	1B	un	it	26	bRud
06	PYof	11	d2	1C	LoSP	27	Rddr	
07	SYof	12	ct2	1D	HISP	28	1-2	
08	DuEL	13	db	1E	FILt	29	1-3	
09	HSt1	14	FUEY	1F	RLP	2A	1-4	
0A	HSt2	15	RLIF	20	RHP	2B	1-5	100 PV

