Shinko

Programmable Controller

PCB1

User Focused

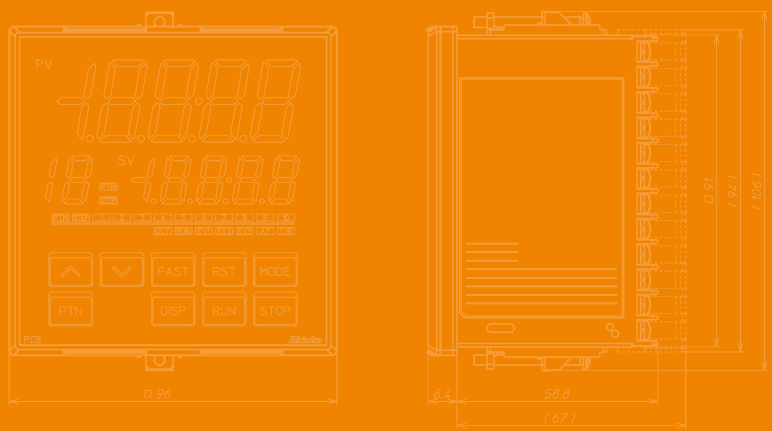
Functionality

ISO9001

ISO14001
(HQ only)

Max. 10-patterns, 10-steps each, programmable

Power supply and quick setup using the Tool Cable and USB cable



Easier viewing large display

Drip-proof / Dust-proof IP66 (for front panel only)

Model

(e.g.) **PCB1 R 0 0 - 1 0**

- Control output: Relay contact
- Power supply: 100 to 240 V AC
- Input: Multi-range
- Option 1: Event output EV2 or Heating/Cooling control output OUT2
- Option 2: Option 2 not needed

PCB1	Control Output	Power Supply	Input (*1)	Option 1 (*2)	Option 2 (*2)	Specification	
PCB1							
	R					Relay contact: 1a	
	S					Non-contact voltage (for SSR drive): 12 V DC±15%	
	A					Direct current: 4 to 20 mA DC	
		0				100 to 240 V AC (Standard)	
		1				24 V AC/DC	
			0 –			Multi-range (*1)	
				0		Option 1 not needed	
				1		Event output EV2 or Heating/Cooling control output OUT2 Relay contact output	EV2(DR) (*3)
				2		Heating/Cooling control output OUT2 Non-contact voltage output	DS
				3		Heating/Cooling control output OUT2 Direct current output	DA
				4		Insulated power output	P24
				5		Event output EV3, and [Event output EV2 or Heating/Cooling control output OUT2 Relay contact output]	EV3(DR) (*3), (*4)
				6		Event output EV3, and Heating/Cooling control output OUT2 Non-contact voltage output	EV3DS (*4)
				7		Event output EV3, and Heating/Cooling control output OUT2 Direct current output	EV3DA (*4)
					0	Option 2 not needed	
					1	Serial communication + Heater burnout alarm output + Event input (*6)	C5W(20A) (*5)
					2	Serial communication + Heater burnout alarm output + Event input (*6)	C5W(100A) (*5)
					3	Event input + Heater burnout alarm output	EIW(20A) (*5)
					4	Event input + Heater burnout alarm output	EIW(100A) (*5)
					5	Event input + Transmission output (4 to 20 mA DC)	EIT (*4)
					6	Serial communication RS-485 + Event input (*6)	C5
					7	Heater burnout alarm output	W(20A) (*5)
					8	Heater burnout alarm output	W(100A) (*5)
					9	Event input + Event output EV3	EI

(*1) Thermocouple, RTD, Direct current or DC voltage can be selected by keypad.
(*2) Only one option can be selected from Option 1 and Option 2 respectively.
(*3) If 'Heating/Cooling control Relay contact output' is selected in [Event output EV2 allocation], this works as the DR option.
(*4) The EV3D□ option and EIT option cannot be used together.
(*5) If control output OUT1 is relay contact output or non-contact voltage output, the C5W, EIW or W option can be used.
(*6) 'SV digital transmission' or 'SV digital reception' can be selected in [Communication protocol].

Accessories Sold Separately

Model
Terminal cover (TC-BCD2)
CT for 20A (CTL-6-S-H) (*)
CT for 100A (CTL-12-S36-10L1U) (*)
Tool cable (CMD-001)
USB cable (CUS-100)

(*) Used for Heater burnout alarm (C5W, EIW, W options)

To our valued customers who are currently using our PCD-33A with external operation function: If you want to replace with the PCB1, please order the model PCB1□□0-19.

Specifications

Input

Thermocouple: K, J, R, S, B, E, T, N, PL-Ⅱ, C (W/Re5-26) External resistance: 100 Ω max.(However, B: 40 Ω max.)
RTD: Pt100, JPt100, 3-wire type, Allowable input lead wire resistance: 10 Ω max. per wire
Direct current: 0 to 20 mA, 4 to 20 mA DC
Input impedance: 50 Ω, Allowable input current: 50 mA max.
DC voltage: 0 to 1 V DC
Input impedance: 1 MΩ min. Allowable input voltage: 5 V DC max.
Allowable signal source resistance: 2 kΩ max.
0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC
Input impedance: 100 kΩ min. Allowable input voltage: 15 V DC max.
Allowable signal source resistance: 100 Ω max.

Base accuracy

Thermocouple: Within ±0.2% of each input span ±1 digit
However, R, S input, 0 to 200℃ (32 to 392℉): Within ±6℃ (12℉)
B input, 0 to 300℃ (32 to 572℉): Accuracy is not guaranteed.
K, J, E, T, N input, Less than 0℃ (32℉): Within ±0.4% of input span ±1 digit
RTD: Within ±0.1% of each input span±1 digit
Direct current: Within ±0.2% of each input span±1 digit
DC voltage: Within ±0.2% of each input span±1 digit

Input sampling period

125 ms

Control output OUT1

Relay contact 1a: Control capacity: 3 A 250 V AC (resistive load), 1 A 250 V AC (inductive load $\cos\phi$=0.4)
Electrical life: 100,000 cycles, Minimum applicable load: 10 mA 5 V DC
Non-contact voltage (for SSR drive): 12 V DC±15%
Max. 40 mA (short circuit protected)
Direct current: 4 to 20 mA DC (Resolution: 12000)
Load resistance: Max. 550 Ω

Event output EV1
Event output EV2 (Optional)
Event output EV3 (Optional)

Relay contact 1a: Control capacity: 3 A 250 V AC (resistive load), 1 A 250 V AC (inductive load $\cos\phi$=0.4)
Electrical life: 100,000 cycles
Minimum applicable load: 10 mA 5 V DC

Program performance

Number of patterns: 10 (Linkable)
Number of steps: 100 (10 steps/pattern)
Number of repetitions: 0 to 10000 times (Repetitions disabled when set to 0.)
Program time range: 0 to 99 hours 59 minutes/step, or 0 to 99 minutes 59 seconds/step
(When ⊟⊟⊟⊟ is set: Fixed value control is performed using step SV.)
Wait value: Thermocouple, RTD input: 0 to 20% of input span
DC voltage, current input: 0 to 20% of scaling span
(The placement of the decimal point follows the selection.)
(The Wait function is disabled when set to 0 or 0.0.)

Serial communication (Optional)

Communication line: EIA RS-485
Communication method: Half-duplex communication
Synchronization method: Start-stop synchronization
Communication speed: 9600, 19200, 38400 bps (Selectable by keypad) (Factory default: 9600 bps)
Data bit: 7 or 8 (Factory default: 7 bits)
Parity: Even, Odd, No parity (Selectable by keypad) (Factory default: Even)
Stop bit: 1 or 2 (Selectable by keypad) (Factory default: 1 bit)
Data format:

Communication protocol	Shinko protocol	Modbus ASCII	Modbus RTU
Start bit	1	1	1
Data bit	7 (8) Selectable	7 (8) Selectable	8
Parity	Even (No parity, Odd) Selectable	Even (No parity, Odd) Selectable	No parity (Even, Odd) Selectable
Stop bit	1 (2) Selectable	1 (2) Selectable	1 (2) Selectable

SV digital transmission: If 'SV digital transmission' is selected in [Communication protocol] in Serial communication, SV can be digitally transmitted to Shinko digital indicating controllers (with Serial communication C5 option).

Transmission output (Optional)

Resolution: 12000
Output: 4 to 20 mA DC (Load resistance: Max. 550 Ω)
Output accuracy: Within ±0.3% of Transmission output span
Response time: 400 ms + Input sampling period (0%→90%)

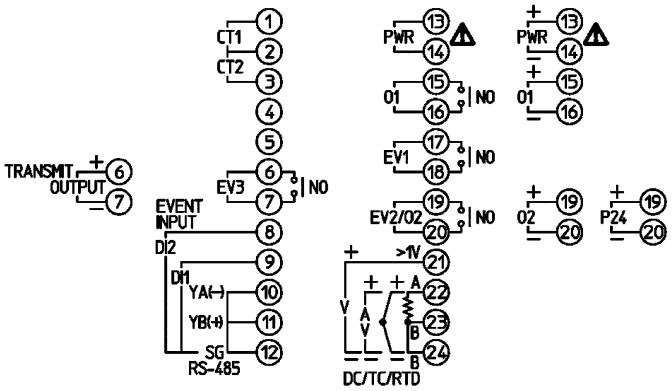
Insulated power output (Optional)

Output voltage: 24±3 V DC (When load current is 30 mA DC)
Ripple voltage: Within 200 mV DC (When load current is 30 mA DC)
Max. load current: 30 mA DC

Control output OUT2 (Optional)

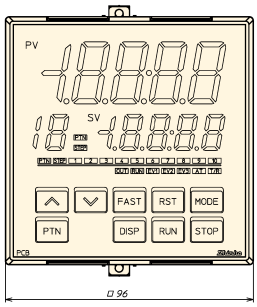
Relay contact 1a: Control capacity: 3 A 250 V AC (resistive load), 1 A 250 V AC (inductive load $\cos\phi$=0.4)
Electrical life: 100,000 cycles, Minimum applicable load: 10 mA 5 V DC
{EV2 option (when 'Heating/Cooling control Relay contact' is selected in [Event output EV2 allocation]), EV3(DR) option}
Non-contact voltage (for SSR drive): 12 V DC±15%
Max. 40 mA (short circuit protected) (DS, EV3DS options)
Direct current: 4 to 20 mA DC (Resolution: 12000)
Load resistance: Max. 550 Ω (DA, EV3DA options)

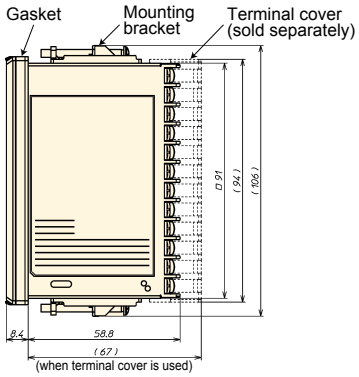
Terminal Arrangement



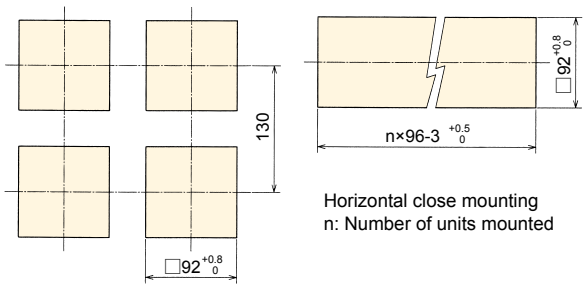
PWR	Power supply voltage 100 to 240 V AC or 24 V AC/DC (For 24 V DC, ensure polarity is correct.)
O1	Control output OUT1
EV1	Event output EV1
EV2	Event output EV2 [EV2, EV3(DR) options]
O2	Control output OUT2 (EV2, DS, DA, EV3D□ options)
P24	Insulated power output 24 V DC (P24 option)
TC	Thermocouple input
RTD	RTD input
DC	Direct current, DC voltage inputs
CT1	CT input 1 (C5W, EIW, W options)
CT2	CT input 2 (C5W, EIW, W options)
RS-485	Serial communication RS-485 (C5W, C5 options)
EVENT INPUT	Event input DI1 (C5W, EIW, EIT, C5, EI options) Event input DI2 (C5W, EIW, EIT, C5, EI options)
EV3	Event output EV3 (EV3D□, EI options)
TRANSMIT OUTPUT	Transmission output (EIT option)

External Dimensions (Scale: mm)





Panel Cutout (Scale: mm)



Horizontal close mounting
n: Number of units mounted

Caution

If horizontal close mounting is used for the controller, Drip-proof/Dust-proof IP66 may be compromised, and all warranties will be invalidated.

SAFETY PRECAUTIONS

- To ensure safe and correct use, thoroughly read and understand the manual before using this instrument.
- This instrument is intended to be used for industrial machinery, machine tools and measuring equipment. Verify correct usage after purpose-of-use consultation with our agency or main office. (Never use this instrument for medical purposes with which human lives are involved.)
- External protection devices such as protection equipment against excessive temperature rise, etc. must be installed, as malfunction of this product could result in serious damage to the system or injury to personnel. Also proper periodic maintenance is required.
- This instrument must be used under the conditions and environment described in the manual. Shinko Technos Co., Ltd. does not accept liability for any injury, loss of life or damage occurring due to the instrument being used under conditions not otherwise stated in this manual.

Caution with respect to Export Trade Control Ordinance

To avoid this instrument from being used as a component in, or as being utilized in the manufacture of weapons of mass destruction (i.e. military applications, military equipment, etc.), please investigate the end users and the final use of this instrument.
In the case of resale, ensure that this instrument is not illegally exported.

・This catalog is as of Aug 2017 and its contents are subject to change without notice.
・Photos used in this catalog do not show unit in operating status.
・If you have any inquiries, please consult us or our agency.