

INSTRUCTION MANUAL

Digital Indicating Controller
No. ACS21E1 2025.09

ACS2

Preface

Thank you for purchasing our ACS2, Digital Indicating Controller.
This manual contains instructions for the mounting, functions, operations and notes when operating the ACS2.
To ensure safe and correct use, thoroughly read and understand this manual before using this instrument. To prevent accidents arising from the misuse of this instrument, please ensure the operator receives this manual.

For details on how to use it, refer to the instruction manual (detailed version).
Please access our website from the following URL or QR code to download the instruction manual (detailed version).
https://shinko-technos.co.jp/manual_download/#A



Notes

- This instrument should be used in accordance with the specifications described in the manual. If it is not used according to the specifications, it may malfunction or cause a fire.
- Be sure to follow the warnings, cautions and notices. If they are not observed, serious injury or malfunction may occur.
- The contents of this instruction manual are subject to change without notice.
- Care has been taken to ensure that the contents of this instruction manual are correct, but if there are any doubts, mistakes or questions, please inform our sales department.
- This instrument is designed to be installed on an indoor control panel. If it is not, measures must be taken to ensure that the operator does not touch power terminals or other high voltage sections.
- Any unauthorized transfer or copying of this document, in part or in whole, is prohibited.
- Shinko Technos Co., Ltd. is not liable for any damage or secondary damage(s) incurred as a result of using this product, including any indirect damage.

Safety Precautions (Be sure to read these precautions before using our products.)

The safety precautions are classified into categories: “Warning” and “Caution”.
Depending on circumstances, procedures indicated by ⚠ Caution may result in serious consequences, so be sure to follow the directions for usage.

-  **Warning** Procedures which may lead to dangerous conditions and cause death or serious injury, if not carried out properly.
-  **Caution** Procedures which may lead to dangerous conditions and cause superficial to medium injury or physical damage or may degrade or damage the product, if not carried out properly.

 **Warning**

- To prevent an electrical shock or fire, only Shinko or qualified service personnel may handle the inner assembly.
- To prevent an electrical shock, fire, or damage to instrument, parts replacement may only be undertaken by Shinko or qualified service personnel.

 **Safety Precautions**

- To ensure safe and correct use, thoroughly read and understand this 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.)
- Please contact us for periodic maintenance (for a fee).
- This instrument must be used under the conditions and environment described in this 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.

Warning on Model Label

Caution

Failure to handle this instrument properly may result in minor or moderate injury or property damage due to fire, malfunction, malfunction, or electric shock. Please read this manual before using the product to ensure that you fully understand the product.

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.

Precautions for Use

1. Installation Precautions

Caution

[This instrument is intended to be used under the following environmental conditions (EN61010-1)]

- Overvoltage Category II, Pollution degree 2

[Ensure the mounting location corresponds to the following conditions]

- A minimum of dust, and an absence of corrosive gases
- No flammable, explosive gases
- No mechanical vibrations or shocks
- No exposure to direct sunlight, an ambient temperature of -10 to 55°C that does not change rapidly, and no icing
- An ambient non-condensing humidity of 35 to 85 %RH
- No large capacity electromagnetic switches or cables through which large current is flowing
- No water, oil or chemicals or the vapors of these substances can come into direct contact with the unit.
- When installing this unit within a control panel, please note that ambient temperature of this unit – not the ambient temperature of the control panel – must not exceed 55°C.
Otherwise the life of electronic components (especially electrolytic capacitor) may be shortened.
- * Avoid setting this instrument directly on or near flammable material even though the case of this instrument is made of flame-resistant resin.

2. Wiring Precautions

Caution

- Do not leave bits of wire in the instrument, because they could cause a fire and malfunction.
- When wiring, use a crimping pliers and a solderless terminal with an insulation sleeve in which an M3 screw fits.
- The terminal block of this instrument has a structure that is wired from the left side. Be sure to insert the lead wire into the terminal of the instrument from the left side and tighten the terminal screw.
- Tighten the terminal screw using the specified torque. If excessive force is applied to the screw when tightening, the screw or case may be damaged.
- Do not pull or bend the lead wire with the terminal as the base point during or after wiring work. It may cause malfunction.
- When terminal covers are used, wiring to terminal numbers 7 to 12 should be done through the holes in the terminal covers.
- This instrument does not have a built-in power switch, circuit breaker and fuse. It is necessary to install an appropriate power switch, circuit breaker and fuse near the instrument.
(Recommended fuse: Time-lag fuse with rated voltage of 250 V AC and rated current of 2 A)
- When wiring the power supply (24 VDC or 48 V DC), do not confuse the polarities.
- Do not apply a commercial power source to the sensor which is connected to the input terminal nor allow the power source to come into contact with the sensor.
- Use the thermocouple and compensation lead wire that match the sensor input specifications of this instrument.
- Use the RTD of 3-conducting wire type that meets the sensor input specifications of this instrument.
- Note that the + side of the DC voltage input 0 to 5 V DC, 1 to 5 V DC, and 0 to 10 V DC has a different input terminal from that of 0 to 1 V DC. 0 to 5 V DC, 1 to 5 V DC, and 0 to 10 V DC have a + side of ⑨ and 0 to 1 V DC have a + side of ⑩.
- For the relay contact output type, we recommend the use of an external relay suitable for the capacity of the load to protect the built-in relay contact.
- Separate the input line (thermocouple, RTD, etc.) from the power line and load line.

3. Operation and Maintenance Precautions

Caution

- It is recommended that AT be performed during test operation.
- Do not touch live terminals. This may cause electrical shock or problems in operation.
- Turn the power supply to the instrument OFF when retightening the terminal or cleaning.
Working on or touching the terminal with the power switched ON may result in severe injury or death due to electrical shock.
- Use a soft, dry cloth when cleaning the instrument.
(Alcohol based substances may tarnish or deface the unit.)
- As the panel part is vulnerable, be careful not to put pressure on, scratch or strike it with a hard object.

4. Compliance with Safety Standards

Caution

- Always install the recommended fuse described in this manual externally.
- If the instrument is used in a manner not specified by the manufacturer, the protection provided by the instrument may be impaired.
- Use a device with reinforced insulation or double insulation for the external circuit connected to this product.

1. Model

ACS2						Series name: ACS2 (W48×H48×D68 mm)	
Control output	R (*5)					Relay contact: 1a	
	M (*1)					Non-contact voltage (for SSR drive): 12V DC 15%	
						Direct current: 4 to 20mA DC	
						Direct current: 0 to 20mA DC	
	V					DC voltage: 0 to 1V	
	1					DC voltage: 0 to 5V	
	2					DC voltage: 1 to 5V	
	3					DC voltage: 0 to 10V	
C					Open collector		
Power supply voltage		0				100 to 240V AC, 24V DC, 48V DC	
Input			M			Multi-range	
Option ①				0		No options	
				1		Event output EV2 (*1)	EV2
				2		Event output EV3 (*2)	EV3
				3		Heating and cooling control O2(SSR/A) (*4)	O2(SSR/A)
				4		Isolated power supply output (*6)	P24
Option ②				0		No options	
				1		Serial communication + Heater burnout alarm (20A)	C5W(20A)
				2		Serial communication + Heater burnout alarm (100A)	C5W(100A)
				3		Heater burnout (20A) (*3)	W(20A)
				4		Heater burnout (100A) (*3)	W(100A)
				5		Transmission output (4-20mA) (*3)	TA
				6		Transmission output (0-1V) (*3)	TV
				7		Transmission output (0-10V) (*3)	TV
				8		External setting input (*3)	EA
				9		Serial communication (*3)	C5
				A		Event input 4 points	EI

(*1): When main output is selected in event output EV2 allocation selection, the output is multi, and SSR output, current output, or relay output can be selected.

(*2): The three event outputs are common.

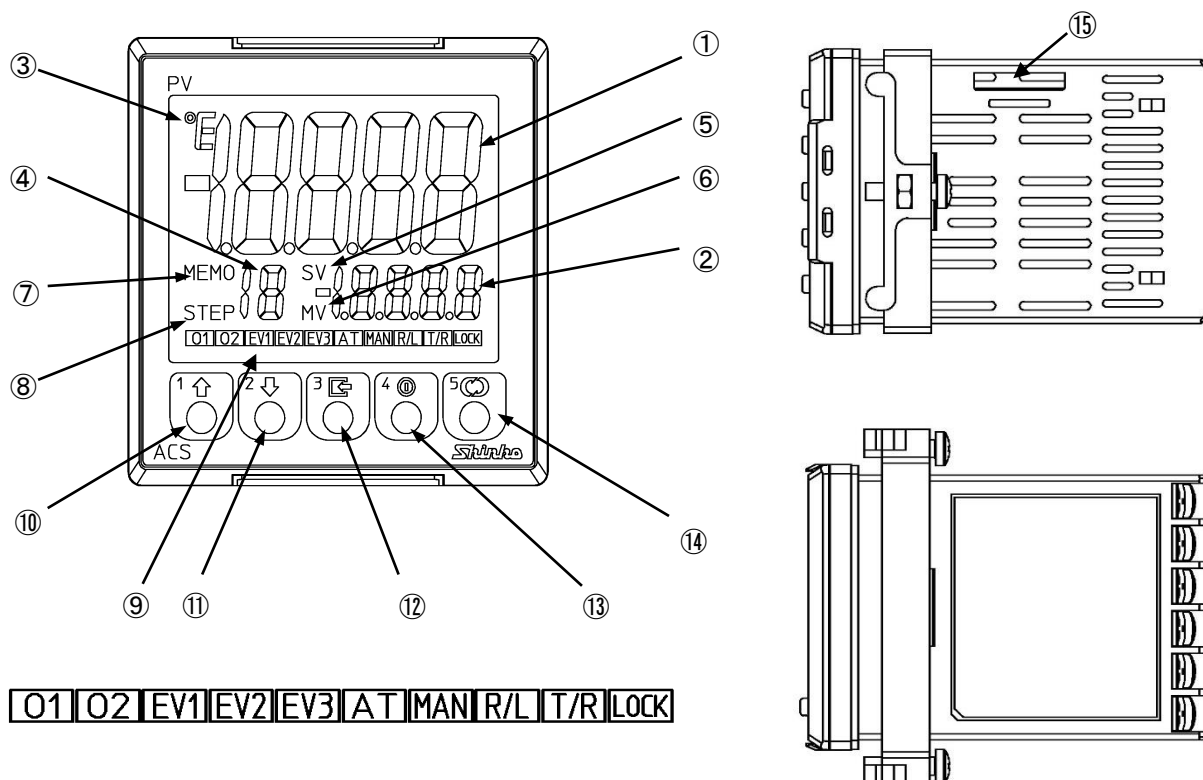
(*3): For options other than C5W and EI, two event inputs are added simultaneously.

(*4): When O2 is added, SSR output or current output can be selected for the cooling side output. However, the cooling output cannot be used as a relay output. If you want to use the cooling output as a relay output, add EV2 and select cooling output in the event output EV2 allocation selection.

(*5): To use the heating side as a relay output in the heating/cooling control, select control output R.

(*6): To use the isolated power output with relay output, select control output R.

2. Name and Functions



(Fig. 2-1)

Display

No.	Name	Function
①	PV display	Indicates the PV. Indicates setting characters in setting mode.
②	SV display	Indicates the SV. Indicates the set value in setting mode. In monitor mode, indicates MV, remaining time (program control).
③	Temperature unit display	Indicates the temperature unit. (Only thermocouple and RTD ranges are displayed.)
④	MEMO/STEP display	Indicates set value memory number (fixed value control) or program execution step.

Operation indicator

No.	Name	Function
⑤	SV indicator	Lit when the set value is displayed on the SV display.
⑥	MV indicator	Lit when the MV is displayed on the SV display.
⑦	MEMO indicator	Lit when the set value memory function is enabled at fixed value control selection.
⑧	STEP indicator	Lit when program control is selected.
⑨	O1	Lit when control output is ON or heating output (option: EV2, O2(SSR/A)) is ON. For Direct current and DC voltage output, flashes in 250ms cycles corresponding to MV.
	O2	Lit when cooling output (option: EV2, O2(SSR/A)) is ON. For Direct current and DC voltage output, flashes in 250ms cycles corresponding to MV.
	EV1	Lit when event output 1 is ON.
	EV2	Lit when event output 2 (option: EV2) is ON.
	EV3	Lit when event output 3 (option: EV3) is ON.
	AT	Flashes while Normal AT, Startup AT, or Fast AT is performing.
	MAN	Lit during manual control.
	R/L	Lit when remote is selected for external setting input.
	T/R	Lit during Serial communication (option: C5W or C5) TX (transmitting) output.
	LOCK	Lit when set value lock mode is set.

Key

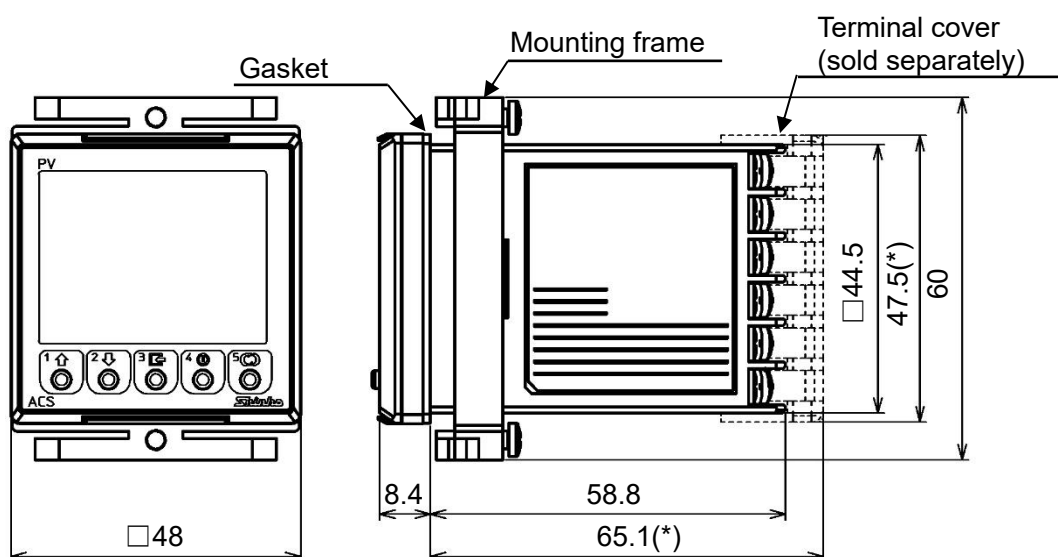
No.	Name	Function
⑩	UP key	Increases the numeric value. If this key is pressed for 1 sec during Program control, the unit proceeds to the next step. (Advance function)
⑪	DOWN key	Decreases the numeric value. If this key is pressed for 1 sec during Program control, the hold function will be activated.
⑫	PF key	Performs the operation selected by PF key function selection. In setting mode, performs numerical input digit selection.
⑬	OUT/OFF key	Performs the operation selected by OUT/OFF key function selection.
⑭	MODE key	Selects a setting mode, and registers the set data. If the MODE key is pressed in RUN mode for 3 sec, the unit moves to Monitor mode.

Console connector

No.	Name	Function
⑮	Console connector	By connecting to the tool cable (CMD-001, sold separately), the following operations can be conducted from an external computer using the Console software SWC-ACS201M. • Reading and setting of SV, PID and various set values • Reading of PV and action status • Function change.

3. Mounting on Control Panel

3.1 Dimensions (Scale: mm)



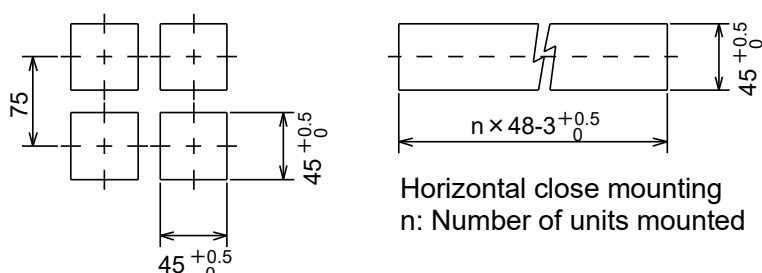
(*) When terminal cover is used.

(Fig. 3.1-1)

3.2 Panel Cutout (Scale: mm)

! Caution

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



Horizontal close mounting
n: Number of units mounted

(Fig. 3.2-1)

3.3 Mounting and Removal

Warning

As the mounting frame of this instrument is made of resin, do not use excessive force while tightening screws, or the mounting frame could be damaged.

Tighten screws with one rotation upon the screw tips touching the panel.

The torque is 0.05 to 0.06 N•m.

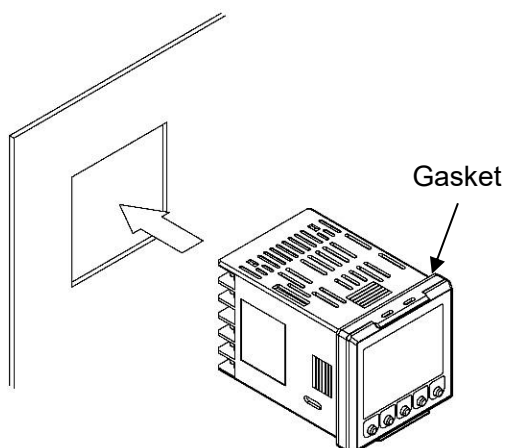
3.3.1 Mounting

Mount the controller vertically to the flat, rigid panel to ensure it adheres to the Drip-proof/Dust-proof specification (IP66).

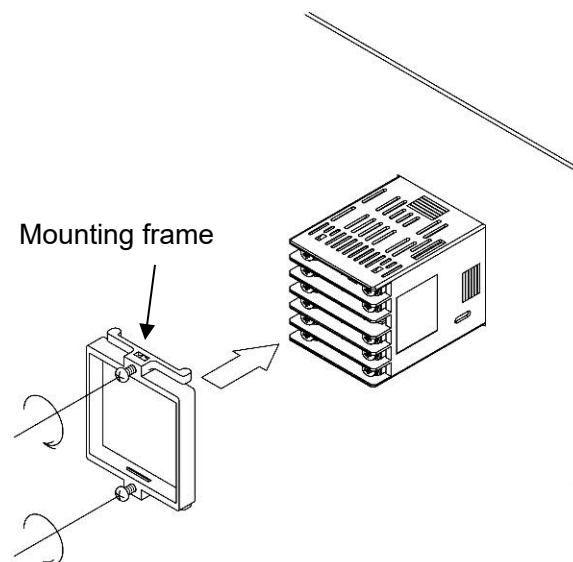
If the lateral close mounting is used for the controller, IP66 specification (Drip-proof/Dust-proof) may be compromised, and all warranties will be invalidated.

Mountable panel thickness: 1 to 5 mm

- (1) Insert the controller from the front side of the control panel. (Fig. 3.3.1-1)
If the Drip-proof/Dust-proof specification (IP66) is not necessary, the gasket may be removed (Please keep in mind the warranty is void if gasket is removed).
- (2) Insert the mounting frame until it comes into contact with the panel, and fasten with screws. (Fig. 3.3.1-2)
Tighten screws with one rotation upon the screw tips touching the panel. (Fig. 3.3.1-2)
The torque is 0.05 to 0.06 N•m.



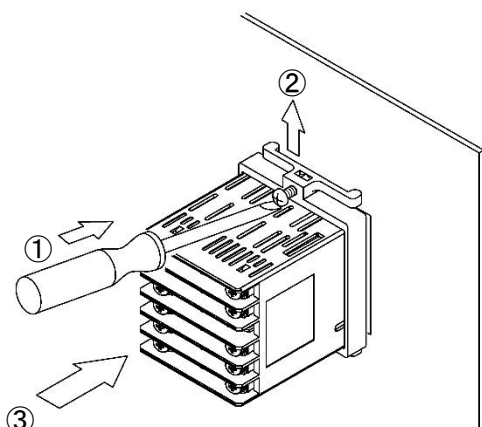
(Fig. 3.3.1-1)



(Fig. 3.3.1-2)

3.3.2 Removal

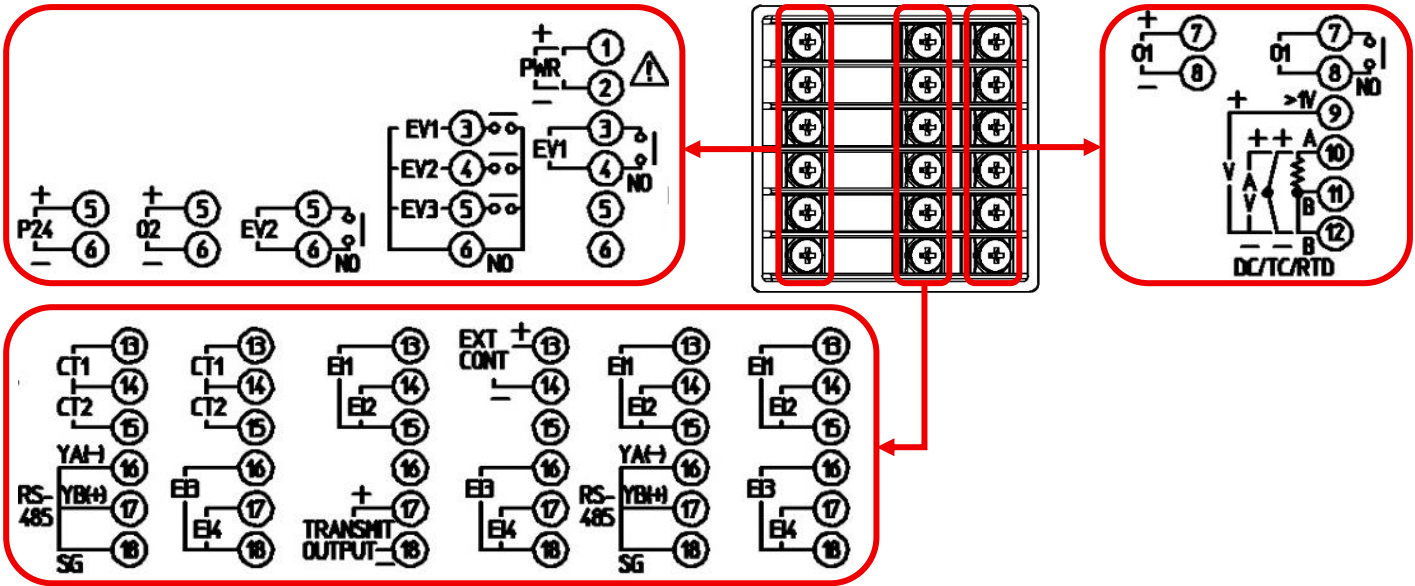
- (1) Turn the power to the unit OFF, and disconnect all wires before removing the mounting frame.
 - (2) Insert a flat blade screwdriver between the mounting frame and unit (①).
 - (3) Slowly push the frame upward using the screwdriver (②), while pushing the unit toward the panel (③).
 - (4) Repeat step (2) and slowly push the frame downward using the screwdriver for the other side.
- The frame can be removed little by little by repeating these steps.



(Fig. 3.3.2-1)

4. Wiring

4.1 Terminal Arrangement



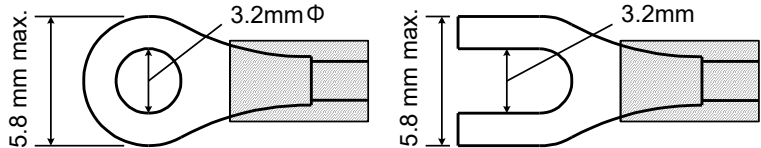
(Fig. 4.1-1)

Terminal	Description
PWR	Power supply voltage
EV1	Event output 1
EV2	Event output 2 (option: EV2)
EV3	Event output 3 (option: EV3)
O2	Control output OUT2 (Cooling output) (option: EV2, O2(SSR/A))
P24	24 V DC insulated power output (option: P24)
O1	Control output OUT1 or Heating output (option: EV2, O2(SSR/A))
TC	Thermocouple input
RTD	RTD input
DC	Direct current, DC voltage inputs
CT1	CT input 1 (option: C5W, W)
CT2	CT input 2 (option: C5W, W)
RS-485	Serial communication RS-485 (option: C5W, C5)
EVENT INPUT	EI1 (option: except C5W) EI2 (option: except C5W) EI3 (option: except EI, W or C5W) EI4 (option: except EI, W or C5W)
EXT CONT	External setting input (option: EA)
TRANSMIT OUTPUT	Transmission output (option: TA, TV)

4.2 Lead Wire Solderless Terminal

Use a solderless terminal with an insulation sleeve in which an M3 screw fits as shown below.
The torque should be 0.63 N•m.

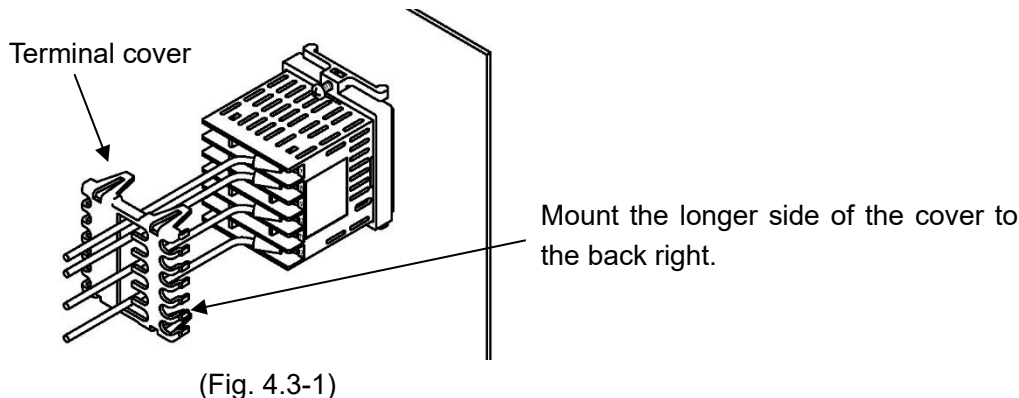
Solderless Terminal	Manufacturer	Model	Tightening Torque
Y-type	NICHIFU TERMINAL INDUSTRIES CO., LTD.	TMEX1.25Y-3	0.63 N•m
	J.S.T.MFG.CO.,LTD.	VD1.25-B3A	
Ring-type	NICHIFU TERMINAL INDUSTRIES CO., LTD.	TMEX1.25-3	
	J.S.T.MFG.CO.,LTD.	V1.25-3	



(Fig. 4.2-1)

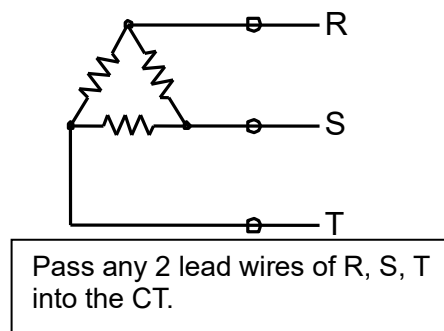
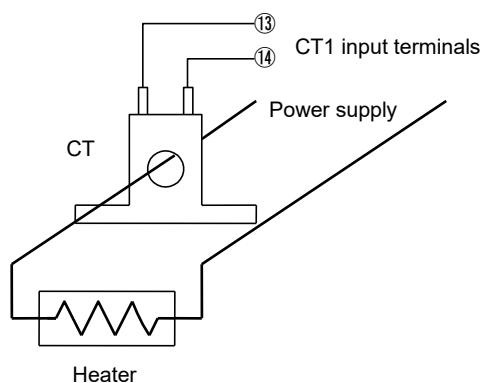
4.3 Terminal Cover

When using a terminal cover (sold separately), make sure the longer side is on the back right side of the case. Pass the wires from terminals 7 to 12 into the holes of the terminal cover.



4.4 Wiring for Heater Burnout Alarm Output (Option: C5W, W)

Use the supplied CT and pass one lead wire of the heater circuit into the hole of the CT. (Fig. 4.4.6-1)
When wiring, keep the CT wire away from AC sources or load wires to avoid the external interference.
If using 3-phase, pass any 2 lead wires of R, S, T into the CT, and connect them to CT1 (⑬-⑭) and CT2 (⑭-⑮) terminals. (Fig. 4.4-2)



5. Specifications

Power Supply

Power supply voltage	24 V DC, 48 V DC, 100 to 240 V AC Allowable voltage fluctuation range 24 V DC: 24 V $\pm$ 10 % 48 V DC: 48 V $\pm$ 10 % 100 to 240 V AC: 85 to 264 V AC	
Power consumption	24 V DC 48 V DC 100 to 240 V AC	Approx. 5 W or less Approx. 5 W or less Approx. 11 VA or less

Output

Control output	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 $\pm$ 15 % Max 40 mA DC (short circuit protected)	
	Direct current	4 to 20 mA DC, 0 to 20 mA DC	
		Resolution	12000
		Load resistance	550 Ω or less
	DC voltage	0 to 1 V DC, 0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC	
		Resolution	12000
		Allowable load resistance	1 k Ω or more

	Open collector (NPN)	Allowable load current	100 mA or less
		Load voltage	30 V DC or less
		Residual voltage	1.2 V DC or less
		Leakage current when OFF	0.1 mA or less
Event output		Output points	1 point, 2 points (option: EV2), 3 points (option: EV3)
		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

Performance

Base accuracy		At ambient temperature 23°C (for a single unit mounting)
	Thermocouple input	Within $\pm 0.2\%$ of each input span ± 1 digit However, within $\pm 0.4\%$ of each input span for lower than 0°C (32°F). 0 to 200°C (32 to 392°F) of R, S input within $\pm 6^\circ\text{C}$ (12°F) Within $\pm 6^\circ\text{C}$ (12°F) for 0 to 200°C (32 to 392°F) of R, S input B input, 0 to 300°C (32 to 572°F): Accuracy is not guaranteed.
	RTD input	Within $\pm 0.1\%$ of each input span ± 1 digit
	Direct current, DC voltage input	Within $\pm 0.2\%$ of each input span ± 1 digit
	Direct current, DC voltage output	Within $\pm 0.3\%$ of each output span
Input sampling period		10 ms (Enabled only for direct current and DC voltage inputs.), 50 ms, 125 ms

General Structure

Weight		Approx. 120 g
External dimensions		48 × 48 × 68 (Depth of control panel interior: 60) mm (W × H × D excluding protrusion)
Mounting type		Control panel embedding type (applicable panel thickness: 1 to 5 mm)
Case		Flame-resistant resin, Black
Front panel		Polycarbonate sheet
Drip-proof/Dust-proof		Front panel: IP66
Applicable standard	LVD	EN61010-1 (Pollution degree 2, Overvoltage category II)
	EMC	EMI: EN61326-1 CISPR11 Group1 ClassA EMS: EN61326-1

Environmental Conditions

Ambient temperature	-10 to 55°C (Non-condensing, No icing)
Ambient humidity	35 to 85 %RH (Non-condensing)
Altitude	2,000 m or less
Environmental specification	RoHS directive compliant
Corrosion resistant	No corrosive gases

Other Item

Accessories	Mounting frame: 1 piece Instruction manual (excerpt): 1 copy
-------------	---

SHINKO TECHNOS CO., LTD. OVERSEAS DIVISION

Head Office: 2-5-1, Senbahigashi, Minoo, Osaka, 562-0035, Japan

[URL] <https://shinko-technos.co.jp/e/>

[E-mail] overseas@shinko-technos.co.jp

Tel: +81-72-727-6100

Fax: +81-72-727-7006

Power ON

(*)1: The power is restored to the state it was in when the power was turned off.

(*)2: To switch from the PV/SV display mode to the Program control RUN, Control output OFF mode or Manual control mode, use the **F1** key or the **F2** key.

(*)3: When no operation is performed for 2 seconds or the **F1** key is pressed, the display returns to the PV/SV display mode.

[Key Operation]

F1 (3 sec): Press and hold **F1** key for approx. 3 sec.

F1 + **F2**: Press and hold the **F1**, **F2** keys (in that order) together.

F1: If the **F1** key is pressed, the unit proceeds to the next item, illustrated by an arrow.

F1: Pressing **F1** key moves back to the previous item.

F1: The dotted arrows represent several presses of the **F1** key.

To set each setting item, use the **F1** and **F2** keys to change the numerical value, the **F3** key to select the numerical digit, and the **F4** key to register it.

Setting group mode

Main setting group

Program setting group

AT setting group

PID setting group

Alarm setting group

Input setting group

Output setting group

EVT input setting group

EVT output setting group

Communication setting group

Transmission output setting group

External setting input setting group

Control function setting group

Program function setting group

Wait setting group

Other setting group

Maintenance group

Monitor mode

Direct setting mode (Main setting)

SV1 setting

SV2 setting

SV8 setting

Step 1 SV setting

Step 1 Time setting

Step 1 Wait block No. setting

Step 1 PID block No. setting

Step 16 SV setting

AT perform / cancellation selection

AT action model selection

AT bias setting

AT gain setting

AT hysteresys setting

Block 1 OUT1 Proportional band setting

Block 1 OUT1 Integral time setting

Block 1 OUT1 Derivative time setting

Block 1 OUT2 Proportional band setting

Block 1 OUT2 Integral time setting

Block 1 OUT2 Derivative time setting

Block 1 MV bias setting

Block 1 Overlap/Dead band setting

Block 8 Overlap/Dead band setting

EV1 Alarm value setting

EV1 High limit alarm value setting

EV2 Alarm value setting

EV2 High limit alarm value setting

EV3 Alarm value setting

EV3 High limit alarm value setting

Heater burnout alarm 1 setting

Heater burnout alarm 2 setting

Loop break alarm time setting

Loop break alarm band setting

Loop break alarm dead band setting

Input type selection

Temperature unit selection

Scaling high limit setting

Scaling low limit setting

Decimal point position selection

Input sampling selection

Number of moving average setting

Sensor correction coefficient setting

Sensor correction setting

PV filter time constant setting

OUT1 output type selection

OUT1 proportional cycle setting

OUT1 ON/OFF hysteresis setting

OUT1 high limit setting

OUT1 low limit setting

OUT1 rate of change limit setting

OUT2 output type selection

OUT2 cooling method selection

OUT2 proportional cycle setting

OUT2 ON/OFF hysteresis setting

OUT2 high limit setting

OUT2 low limit setting

Direct/Reverse action selection

Pre-set output setting 1

Pre-set output setting 2

Action selection when input errors occur

OUT1 MV setting when input errors occur

OUT2 MV setting when input errors occur

Event input EI1 allocation setting

Event input EI2 allocation setting

Event input EI3 allocation setting

Event input EI4 allocation setting

Event output EV1 allocation setting

EV1 enabled/disabled selection when alarm sets 0

EV1 hysteresis setting

EV1 action delay timer setting

EV1 action Energized/De-energized setting

EV1 output latch selection

TS1 output step number setting

TS1 OFF time setting

TS1 ON time setting

Event output EV2 allocation setting

EV2 enabled/disabled selection when alarm sets 0

EV2 hysteresis setting

EV2 action delay timer setting

EV2 action Energized/De-energized setting

EV2 output latch selection

TS2 output step number setting

TS2 OFF time setting

TS2 ON time setting

Event output EV3 allocation setting

EV3 enabled/disabled selection when alarm sets 0

EV3 hysteresis setting

EV3 action delay timer setting

EV3 action Energized/De-energized setting

EV3 output latch selection

TS3 output step number setting

TS3 OFF time setting

TS3 ON time setting

Communication protocol selection

Instrument number setting

Communication speed selection

Data bit/Parity selection

Stop bit selection

Response delay time setting

SVTC bias setting

Transmission output type selection

Transmission output high limit setting (PV, SV transmission)

Transmission output low limit setting (PV, SV transmission)

Transmission output high limit setting (MV transmission)

Transmission output low limit setting (MV transmission)

Remote/Local selection

External setting input high limit setting

External setting input low limit setting

Remote bias setting

Control action selection

Proportional gain 2DOF coefficient setting

Integral 2DOF coefficient setting

Derivative 2DOF coefficient setting

Desired value proportional coefficient

Gap width setting item

Gap coefficient setting item

Integral/Derivative decimal point position selection

Fix control/program control selection

Step time unit selection

Power restore action selection

Program start temperature setting

Program control start type selection

Number of repetitions setting

Block 1 Wait value

Block 2 Wait value

Block 8 Wait value

Set value lock selection

SV Rise/Fall rate action selection

SV Rise/Fall rate time unit selection

SV rise rate setting

SV fall rate setting

LCD display part selection

SV display method selection

Indication when control output OFF selection

OUT/OFF key function selection

PF key function selection

Auto/Manual control after power ON selection

Indication time setting

AT perform/cancellation selection	PFI C	Pt100 -200 to 850 °C	10000	4th decimal place	2	Control ON/OFF	5	H/L limit range alarm	FE B4	De-energized	Stop bit	A1	Hour:Minute	L00	Lower part (including operation indicator)	EVT input indication					
AT cancellation	PFI C	Pt100 -100.0 to 100.0 °C	Input sampling selection			3	Direct/Reverse action	7	H/L limit range independent	EVI/EV2/EV3 output latch selection	A1	1 bit	EE C	Minute:Second	SV display method selection	0	No input				
AT perform	420H	4 to 20 mA DC (Built-in shunt resistor)	125	125 ms	4	Preset output 1	7	Process high alarm	n0	Disabled	2	2 bits	Power restore action selection	VB	Setting SV	1	E11 ON				
AT action model selection			50	50 ms			8	Process low alarm	YE 4	Enabled	Transmission output type selection			V P	Changing SV by ramp function	2	E12 ON				
AT Normal AT	020H	0 to 20 mA DC (Built-in shunt resistor)	10	10 ms		5	Preset output 2	9	High limit with standby	Communication protocol	PB	PV transmission	C00 F	Continue (resume)	Indication when control output OFF selection	4	E13 ON				
AT Startup AT		-19999 to 19999	OUT1/OUT2 output type selection			ON/OFF	10	Low limit with standby	n0nL	Shinko protocol	VB	SV transmission	H0L D	Suspend (on hold)	OFF	OFF indication	8	E14 ON			
AT Fast AT	420E	4 to 20 mA DC (Externally mounted shunt resistor)	Y4	SSR output	6	Auto/Manual control	11	H/L limits with standby	n0nF	MODBUS RTU	VB	MV transmission	Program control start type selection			R0FF	NO indication	EVT output ON selection			
Input type selection			420R	Direct current output (4 to 20 mA DC)	7	Remote/Local	12	H/L limits with standby independent	n0	MC protocol	Remote/Local selection			PB	PV start	R0	PV indication	3	OFF		
E K -200 to 1370 °C	020E	0 to 20 mA DC (Externally mounted shunt resistor)	020R	Direct current output (0 to 20 mA DC)	8	Program control	13	Heater burnout alarm output	VB C	SVTC	L00L	Local	PBR	PVR start	PBR L	PV indication (Any Alarm active)	1	E17 output ON			
E L K -200.0 to 800.0 °C	-19999 to 19999		OUT2 cooling method selection			RUN/STOP	14	Loop break alarm output	Communication speed	C00 F	Remote	VB	SV start	OUT/OFF key/ PF key function selection	2	E2 output ON					
E Y K -200 to 400.0 °C	0118	0 to 1 V DC -199999 to 19999	R1	Air cooling	9	Program control	15	Time signal output	96	9600 bps	Control action selection			Set value lock selection	n0nE	No function	3	E13 output ON			
J K J -200 to 1000 °C	0158	0 to 5 V DC -199999 to 19999	O1	Oil cooling		Holding/Not holding	16	Output during AT	192	19200 bps	Z0F D	ZDOF PID control	U0	Unlock	ARN U	Auto/Manual control function	Date clear perform/cancellation selection				
J K J -200.0 to 400.0 °C	1158	1 to 5 V DC -19999 to 19999	W1	Water cooling	10	Program control	17	Pattern end output	384	38400 bps	FPID	Fast-PID control	L001	Lock 1	OFF	Control output OFF function	n0	Cancellation			
R K R to 1760 °C	0128	0 to 10 V DC -199999 to 19999	Direct/Reverse action selection			Advance function	18	Remote output	512	51600 bps	SPID	Slow-PID control	L002	Lock 2	REN L	Remote/Local selection	YE 4	Perform			
S K S to 1760 °C		Temperature unit selection	HER	Reverse action	11	Integral action Holding	19	Additional output when error occur	1152	115200 bps	GPID	Gap-PID control	SV Rise/Fall rate action selection			RUNST	RUN/STOP function	Program clear perform/cancellation selection			
B K B to 1820 °C		Celsius	C00L	Direct action	12	EV (x) output latch selection	20	Main output (EV2 only)	Data bit/Parity	Integral/Derivative decimal point position selection	VB V	SV start	(enabled during program control)			n0	Cancellation				
E K E -200 to 800 °C	F	Fahrenheit	Action selection when input errors occur			Event output	EVI/EV2/EV3 allocation setting	1	Cooling output (EV2 only)	8 bits/No parity	0	No decimal point	PBV	PV start	Auto/Manual control after power ON selection	YE 4	Perform				
T K T -200.0 to 400.0 °C	Decimal point position selection	E0U F	MV output when input errors occur	0	No event	EVI/EV2/EV3 enabled/disabled selection when alarm sets 0	7 bits/No parity	I00	With decimal point	SV Rise/Fall rate time unit selection	RUF	Auto control	When performing data clear, disconnect the input/output wiring before performing the data clear. Performing data clear with the wiring still in place may result in a malfunction.								
N K N -200 to 1300 °C	0	No decimal point	C00 F	Control action continued	1	High limit alarm	n0	Disabled	EEB	8 bits/Even	Fix output/program control selection						A1	Minute	ARN U	Manual control	
P L K PL -11 to 0 to 1390 °C	00	1st decimal place	Event input EV1/E12/E13/E14 allocation selection			2	Low limit alarm	YE 4	Enabled	7 bits/Even	F1	F1					Fix control	EE C	Second	Non-volatile IC memory saving selection	
C K C (W/ReS-26) 0 to 2315 °C	000	2nd decimal place	0	No event	3	H/L limits alarm	EVI/EV2/EV3 action Energized/De-energized setting	8 bits/Odd	R00 D	8 bits/Odd	P000	Program control					LCD display part selection			VB E	Saving
P F K Pt100 -200.0 to 850.0 °C	0000	3rd decimal place	1	Set value memory	4	H/L limits independent	n0nL	High limit independent	7 bits/Odd	Step time unit selection	L00L	All parts					n0	No saving			