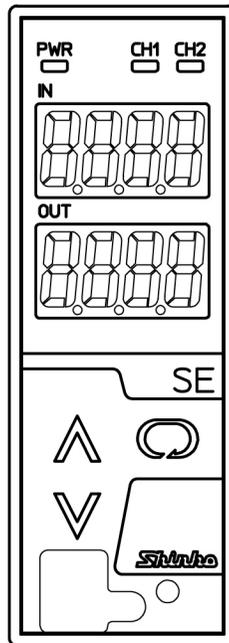# PLUG-IN TYPE

ALARM DETECTOR

SE□□A SERIES

INSTRUCTION MANUAL

Shinko

Preface

Thank you for purchasing the SE☐☐A series Alarm Detector. This manual contains instructions for the mounting, functions, operations and notes when operating the SE☐☐A series. To ensure safe and correct use, thoroughly read and understand this manual before using this unit. To prevent accidents arising from the misuse of this instrument, please ensure the operator receives this manual.

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.
• Specifications of the SE☐☐A series and the contents of this instruction manual are subject to change without notice.
• Care has been taken to assure 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 a DIN rail within a 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 damages or secondary damages incurred as a result of using this product, including any indirect damages.

SAFETY PRECAUTIONS (Be sure to read these precautions before using our products.)
The safety precautions are classified into 2 categories: "Warning" and "Caution".
Depending on the circumstances, procedures indicated by ⚠ Caution may cause serious results, 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 electric shock or fire, only Shinko or other qualified service personnel may handle the inner assembly.
• To prevent an electric shock, fire or damage to the instrument, parts replacement may only be undertaken by Shinko or other 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.)
• External protection devices such as protective 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 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.

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.

1. Installation Precautions

⚠ Caution

This instrument is intended to be used under the following environmental conditions (IEC61010-1): 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 -5 to 55℃ (23 to 131℉) 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 where the vapors of these substances can come into direct contact with the unit
• If this instrument is installed within a control panel, the ambient temperature of the unit - not the ambient temperature of the control panel - must be kept to under 55℃ (131℉). Otherwise the life of electronic parts (especially electrolytic capacitors) of the unit will be shortened.

Note: 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 wire remnants in the instrument, because they could cause a fire and/or a malfunction.
• When wiring terminals, use a solderless terminal with an insulation sleeve in which an M3 screw fits.
• Tighten the terminal screw using the specified torque.
  If excessive force is applied to the screw when tightening, the screw may be damaged.
• This instrument has no built-in power switch, circuit breaker or fuse. It is necessary to install them near the instrument.
  (Recommended fuse: Time-lag fuse, rated voltage 250V AC, rated current 2A)
• For wiring of AC power source, be sure to use exclusive terminals as described in this manual. If AC power source is connected to incorrect terminals, the unit will burn out.
• For a 24V DC power source, do not confuse polarity.
• Do not apply a commercial power source to the sensor connected to the input terminal nor allow the power source to come into contact with the sensor, as the input circuit may burn out.
• Use a thermocouple, compensating lead wire and 3-wire type RTD according to the sensor input specifications of this unit.
• When using DC voltage and current input, do not confuse polarity when wiring.
• Keep the input/output wires and power line separate.

3. Operation and Maintenance Precautions

⚠ Caution

• Do not touch live terminals. This may cause electric shock or problems in operation.
• Turn the power supply to the instrument OFF when retightening the terminal and cleaning. Working on or touching the terminal with the power switched ON may result in severe injury or death due to Electric Shock.
• Use a soft, dry cloth when cleaning the instrument.
  (Alcohol based substances may tarnish or deface the unit.)
• As the display section is vulnerable, do not strike or scratch it with a hard object or put pressure on it.

Model Explanation

Model names included in this manual are indicated below.

Name		Model
SE☐☐A series	SE2☐A	SE2EA, SE2RA, SE2AA, SE2VA
	SE1☐A	SE1EA, SE1RA, SE1AA, SE1VA

Characters Used in This Manual

Indication	-ı	0	ı	2	3	4	5	6	7	8	9	C	F
Number, ℃/℉	-1	0	1	2	3	4	5	6	7	8	9	℃	℉
Indication	A	b	c	d	E	F	G	H	ı	J	k	L	m
Alphabet	A	B	C	D	E	F	G	H	I	J	K	L	M
Indication	n	o	P	q	r	5	r	U	H	u	Y	y	Z
Alphabet	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

☐ means that no character is indicated (unlit) on the display.

--- CONTENTS ---

1. Model

1.1 Model

SE☐☐A Series

S E	☐☐A-	☐-	☐	☐	
2ch alarm detector	2 E				2ch alarm detector (thermocouple)
	2 R				2ch alarm detector (RTD)
	2 A				2ch alarm detector (direct current) (*)
	2 V				2ch alarm detector (DC voltage)
1ch alarm detector	1 E				1ch alarm detector (thermocouple)
	1 R				1ch alarm detector (RTD)
	1 A				1ch alarm detector (direct current) (*)
	1 V				1ch alarm detector (DC voltage)
Socket		1			Screw fall prevention, Finger-safe (For Y terminal)
		2			For Ring terminal
Power supply			0		100 to 240 V AC
			1		24 V AC/DC
Output points				0	2 points — SE2☐A: 1 alarm output for each channel / SE1☐A: 2 alarm outputs
				1	6 points — SE2☐A: 3 alarm outputs for each channel / SE1☐A: 6 alarm outputs

(*) For direct current input, a shunt resistor (sold separately) is required.
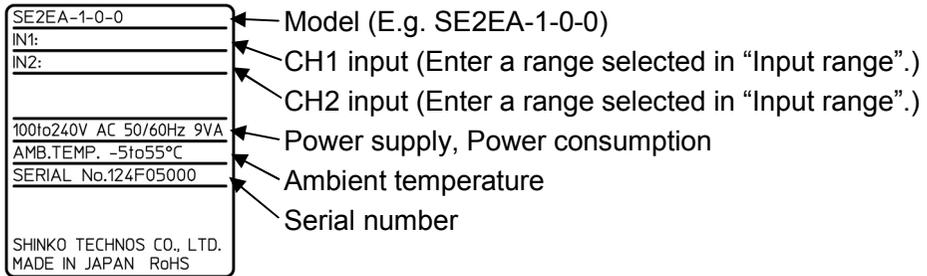
(E.g.) SE2EA-1-0-0

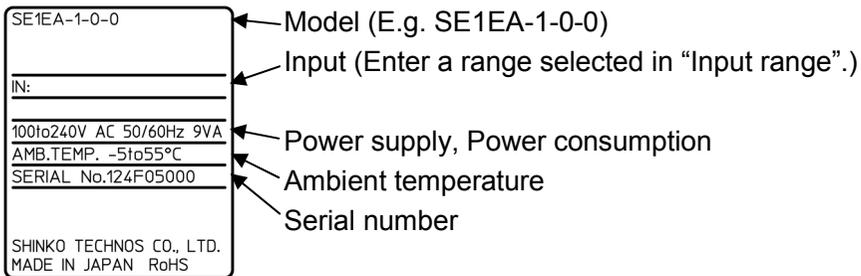|	
Alarm detector type:	2ch alarm detector (thermocouple)
Socket:	Screw fall prevention, Finger-safe (For Y terminal)
Power supply:	100 to 240 V AC
Output points:	2 points (1 alarm output for each channel)
Factory default value:	CH1 input: K -200 to 1370℃
	CH2 input: K -200 to 1370℃

1.2 How to Read the Model Label

The model label is attached to the left side of the case.

SE2☐A

```
SE2EA-1-0-0
IN1:
IN2:


100to240V AC 50/60Hz 9VA
AMB.TEMP. −5to55°C
SERIAL No.124F05000


SHINKO TECHNOS CO., LTD.
MADE IN JAPAN  RoHS
```

← Model (E.g. SE2EA-1-0-0)

← CH1 input (Enter a range selected in "Input range".)

← CH2 input (Enter a range selected in "Input range".)

← Power supply, Power consumption

← Ambient temperature

← Serial number

(Fig. 1.2-1)

SE1☐A

```
SE1EA-1-0-0



IN:


100to240V AC 50/60Hz 9VA
AMB.TEMP. −5to55°C
SERIAL No.124F05000


SHINKO TECHNOS CO., LTD.
MADE IN JAPAN  RoHS
```

← Model (E.g. SE1EA-1-0-0)

← Input (Enter a range selected in "Input range".)

← Power supply, Power consumption

← Ambient temperature

← Serial number

(Fig. 1.2-2)

2. Name and Functions of Sections

SE2☐A

(Fig. 2-1)

SE1☐A

(Fig. 2-2)
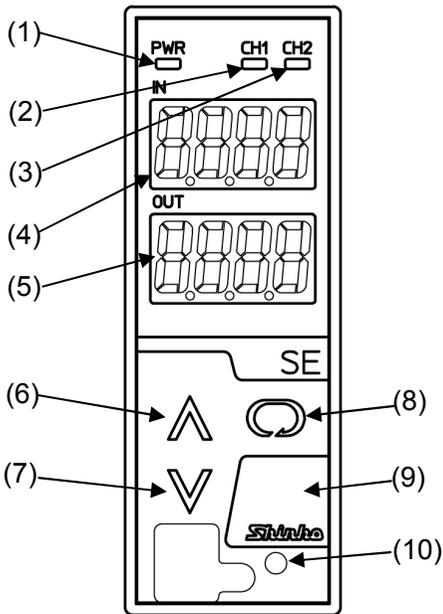
(1) Power indicator (Green)
Lit when the power to the instrument is turned on.

(2) CH1 indicator (SE2☐A) (Yellow)
Lit when CH1 is selected in [Display selection].
Flashes when CH1 alarm output is ON.

(3) CH2 indicator (SE2☐ A) (Yellow)
Lit when CH2 is selected in [Display selection].
Flashes when CH2 alarm output is ON.

(4) Input display (Red)
Indicates CH1 or CH2 input value selected in [Display selection] in RUN mode.
Indicates setting item characters during Setup and Alarm setting mode.

(5) Set value display (Red)
Indicates CH1 or CH2 A1 value or CH2 input value selected in [Display selection] in RUN mode.
Indicates the set value during Setup and Alarm setting mode.

(6) UP Key (⩚)
Increases the numeric value, or switches the selection items.

(7) DOWN Key (⩛)
Decreases the numeric value, or switches the selection items.

(8) MODE Key (⟳)
Selects or switches a group, and registers the set (or selected) value.
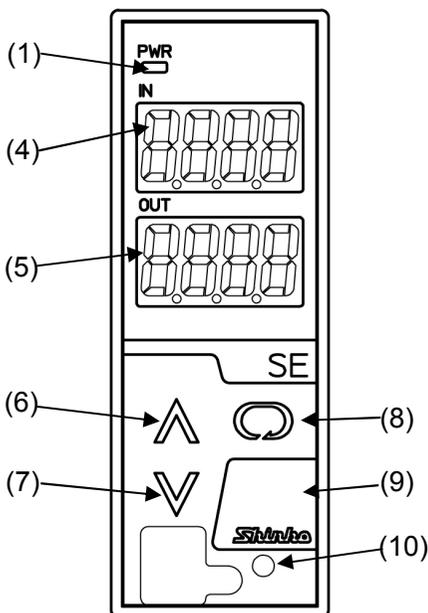
(9) SUB-MODE Key
Turns the displays ON again when they are in OFF status.
(The UP, DOWN or MODE Key also turns the displays ON again when they are in OFF status.)

(10) Light sensor
Automatically measures and controls brightness of the Input and Set value displays.

⚠ Notice

When setting the specifications and functions of this instrument, connect terminals 13 and 14 to a mains power cable first, then set them referring to "5. Key operation flowchart" and "6. Setup" before performing "3. Mounting" and "4. Wiring".
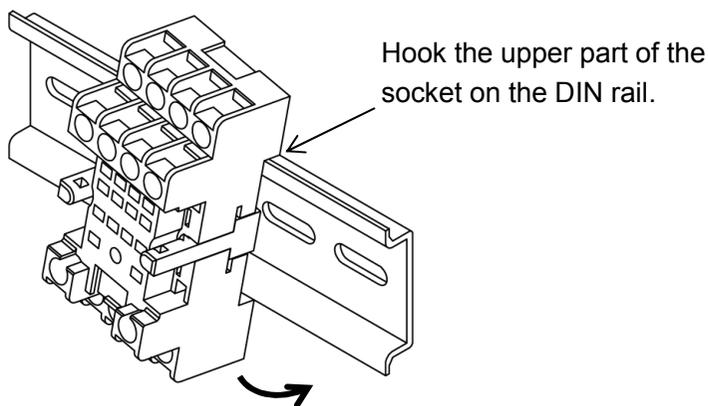
3. Mounting

3.1 External Dimensions (Scale: mm)

Socket (sold separately)

DIN rail

PWR CH1 CH2
IN
OUT
SE

85

3

30

79   (29)

108   3.3
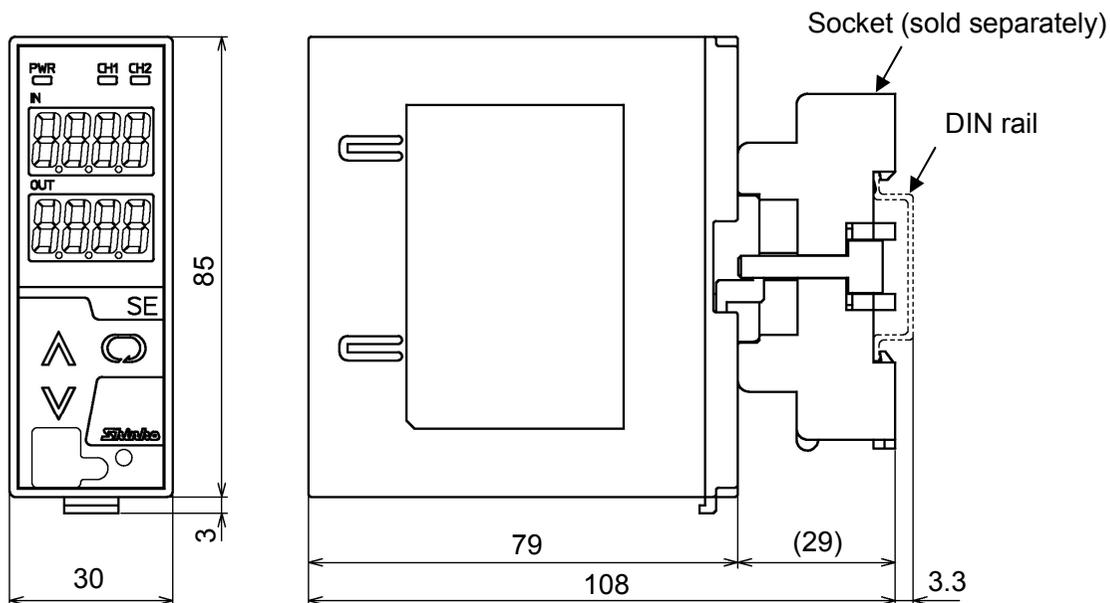
3.2 Mounting to a DIN Rail

(1) Hook the upper part of the socket on the DIN rail, and mount it.
(A clicking sound is heard.)

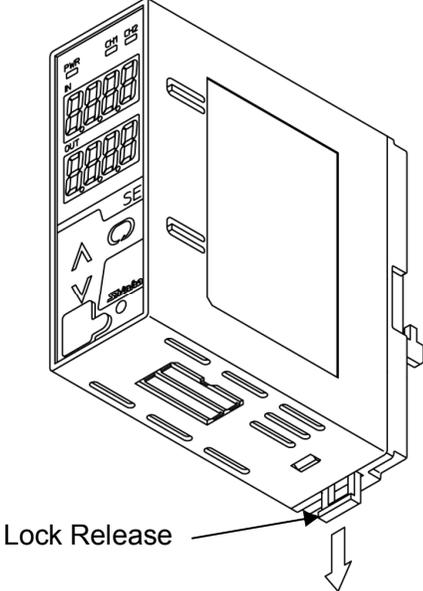Hook the upper part of the socket on the DIN rail.
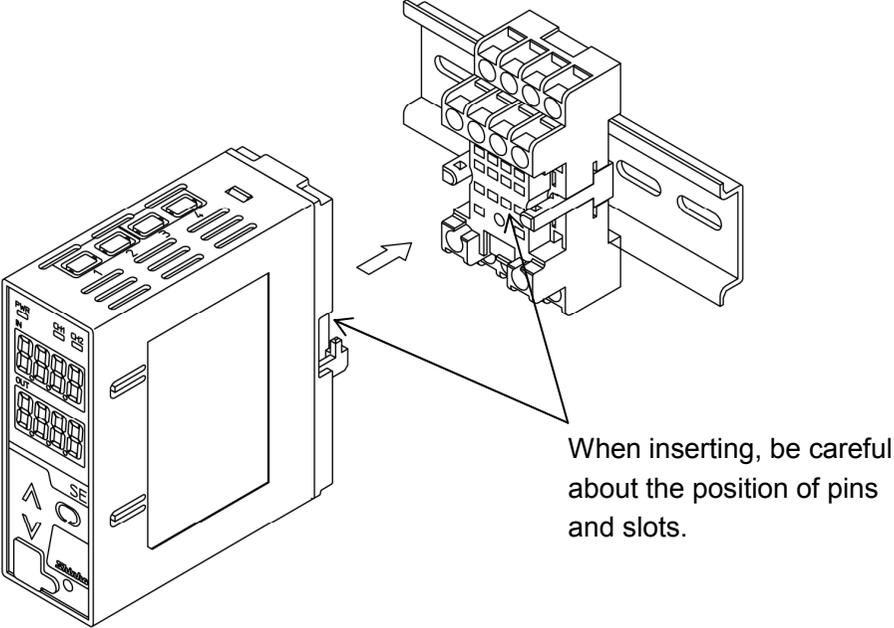
(Fig. 3.2-1)

⚠ Caution

Wire the instrument before inserting the unit into the socket.
For wiring, refer to Section "4. Wiring".

(2) Confirm that the Lock Release is lowered.

Lock Release

(Fig. 3.2-2)

(3) Insert the SE☐☐A series into the socket.

When inserting, be careful about the position of pins and slots.

(Fig. 3.2-3)

(4) Fix the SE☐☐A series and the socket by pushing the Lock Release up.

Check that the SE☐☐A series and the socket are locked by pushing the Lock Release up.
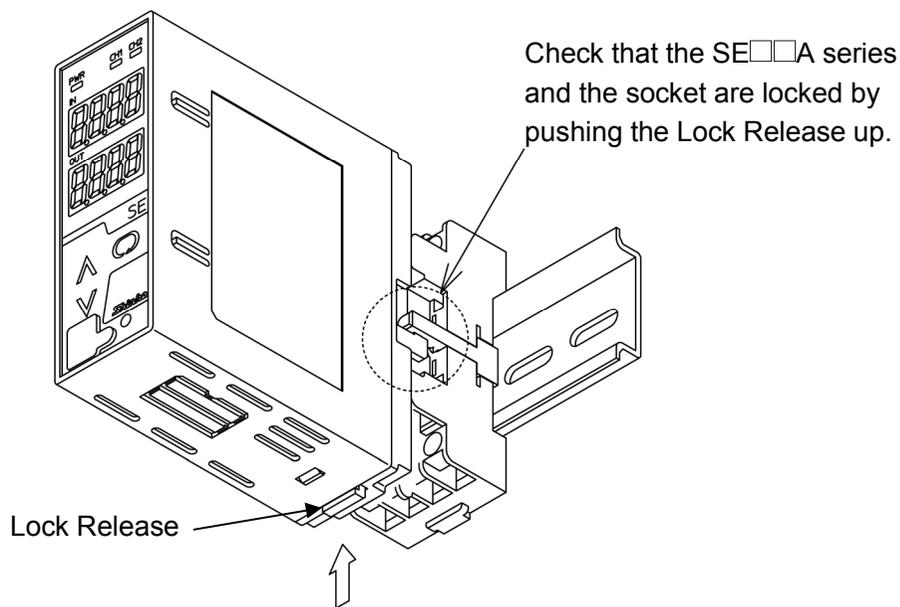
Lock Release

(Fig. 3.2-4)

3.3. Removal from a DIN Rail
(1) Turn the power supply to the unit OFF.
(2) Pull the Lock Release down, and release the SE☐☐A series from the socket.

Check that the SE☐☐A series and the socket are unlocked by pulling the Lock Release down.
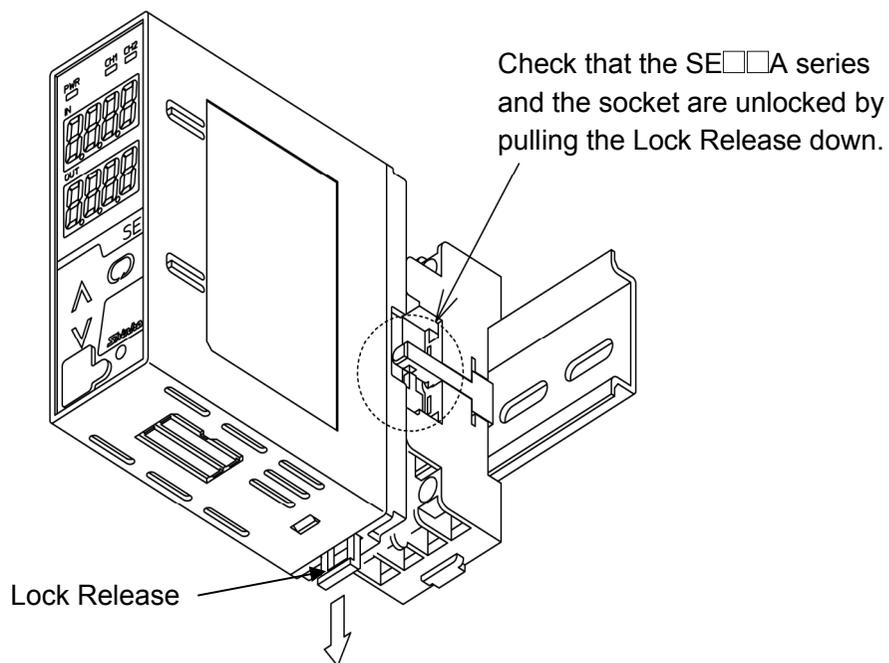
Lock Release

(Fig. 3.3-1)

(3) Separate the SE□□A series from the socket.
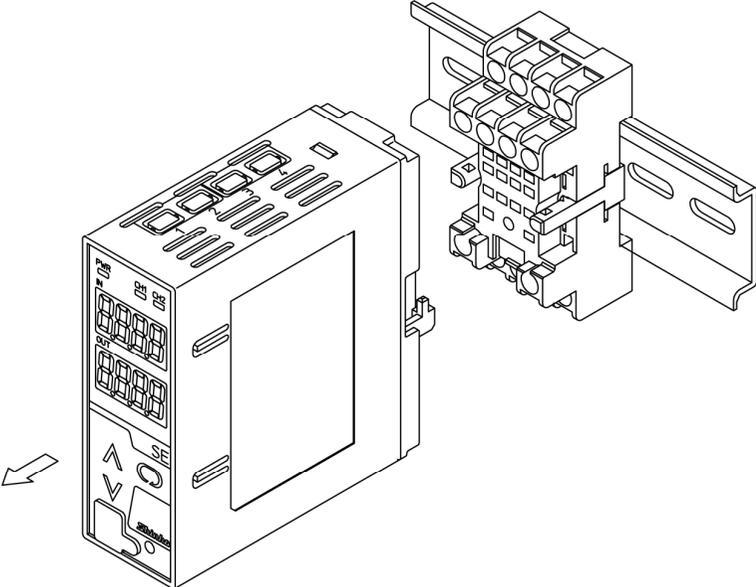
(Fig. 3.3-2)

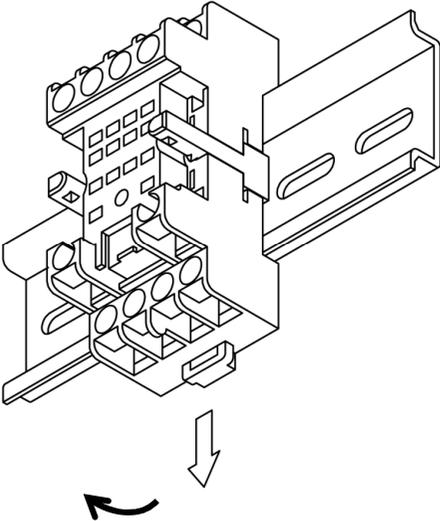(4) Remove the socket from the DIN rail by pulling the Socket Lock Release (at the bottom of the socket) down.

(Fig. 3.3-3)

4. Wiring

> ## ⚠ Warning
>
> **Turn the power supply to the instrument off before wiring.**
> **Working on or touching the terminal with the power switched on may result in severe injury or death due to Electric Shock.**

4.1 Lead Wire Solderless Terminal

Use a solderless terminal with an insulation sleeve in which an M3 screw fits as follows.
For the sockets with finger-safe & screw fall prevention functions, the Ring terminals are incompatible.

The tightening torque should be 0.63N•m.

Solderless Terminal	Manufacturer	Model
Y type	Nichifu Terminal Industries CO., LTD.	TMEV1.25Y-3S
Ring type	Nichifu Terminal Industries CO., LTD.	TMEV 1.25-3
	Japan Solderless Terminal MFG CO., LTD.	V1.25-3

(Scale: mm)
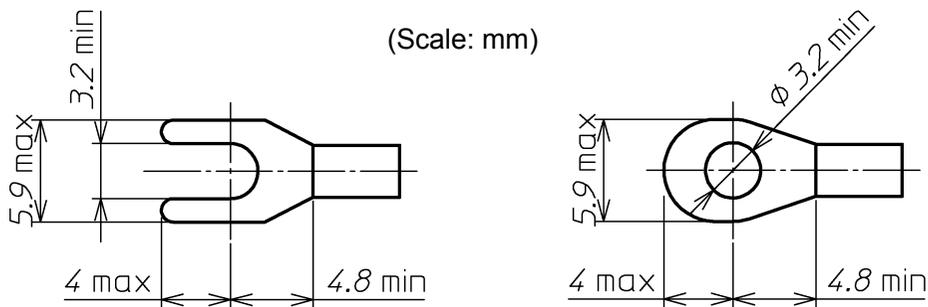
(Fig. 4.1-1)

4.2 Terminal Arrangement and Circuit Configuration

SE2EA
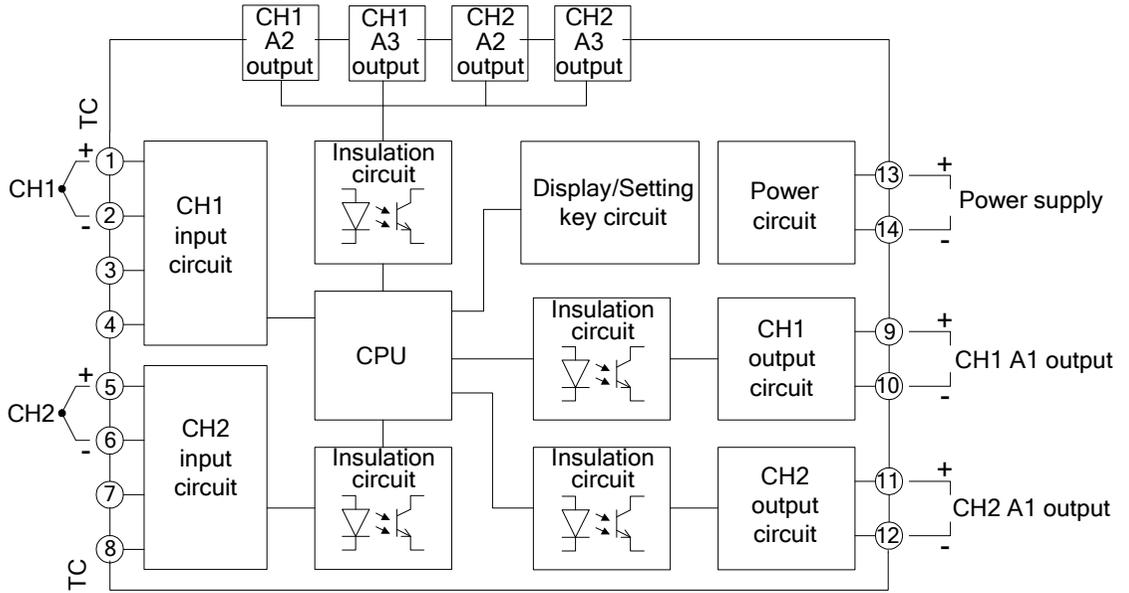
(Fig. 4.2-1)

SE2RA
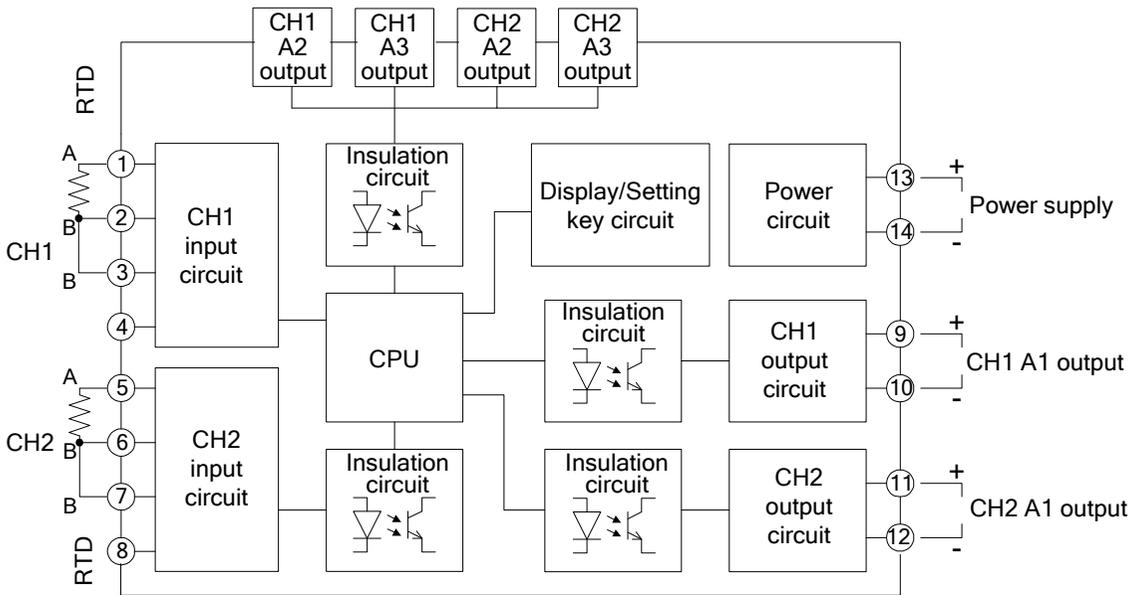
(Fig. 4.2-2)

SE2AA
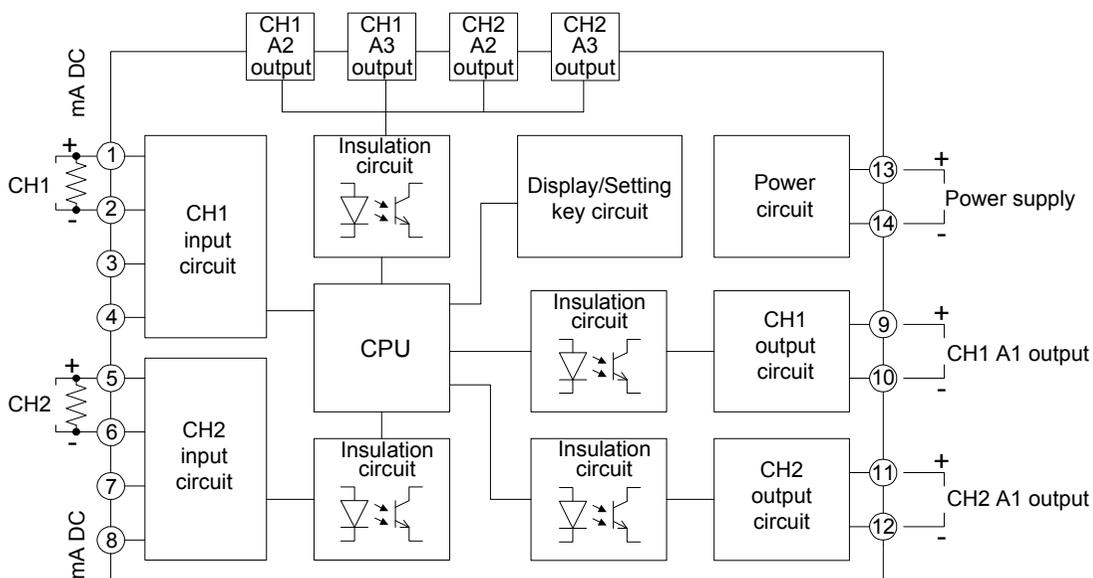
(Fig. 4.2-3)

SE2VA
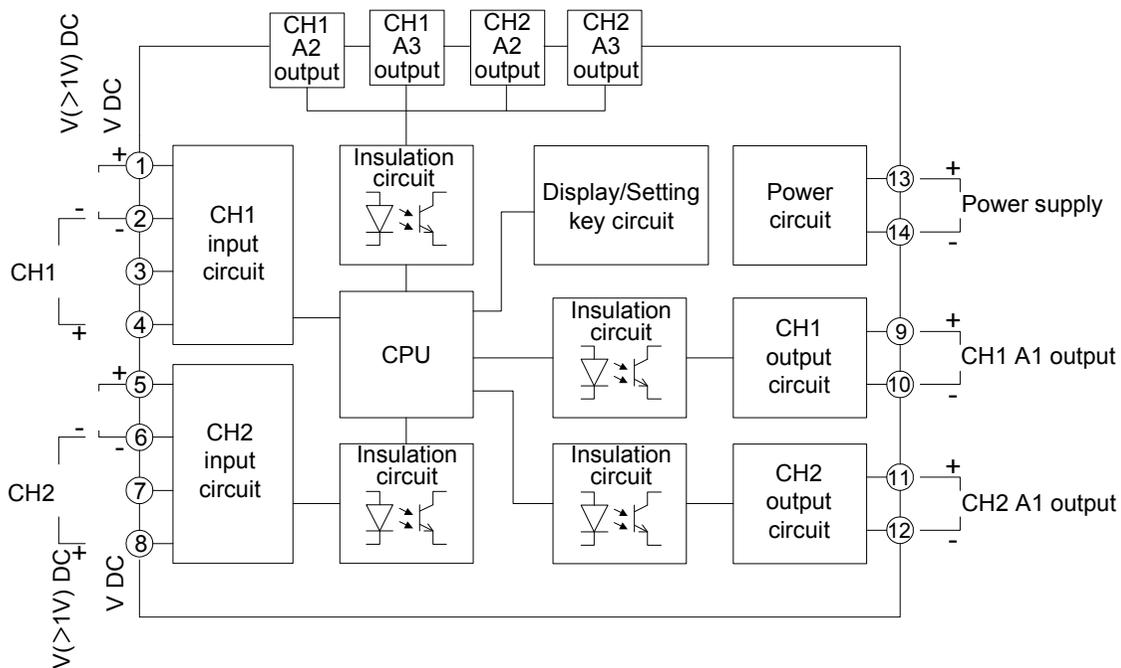
DC voltage input terminals:
V DC: 0 to 1 V DC
V(>1V) DC: 0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC

(Fig. 4.2-4)

SE1EA
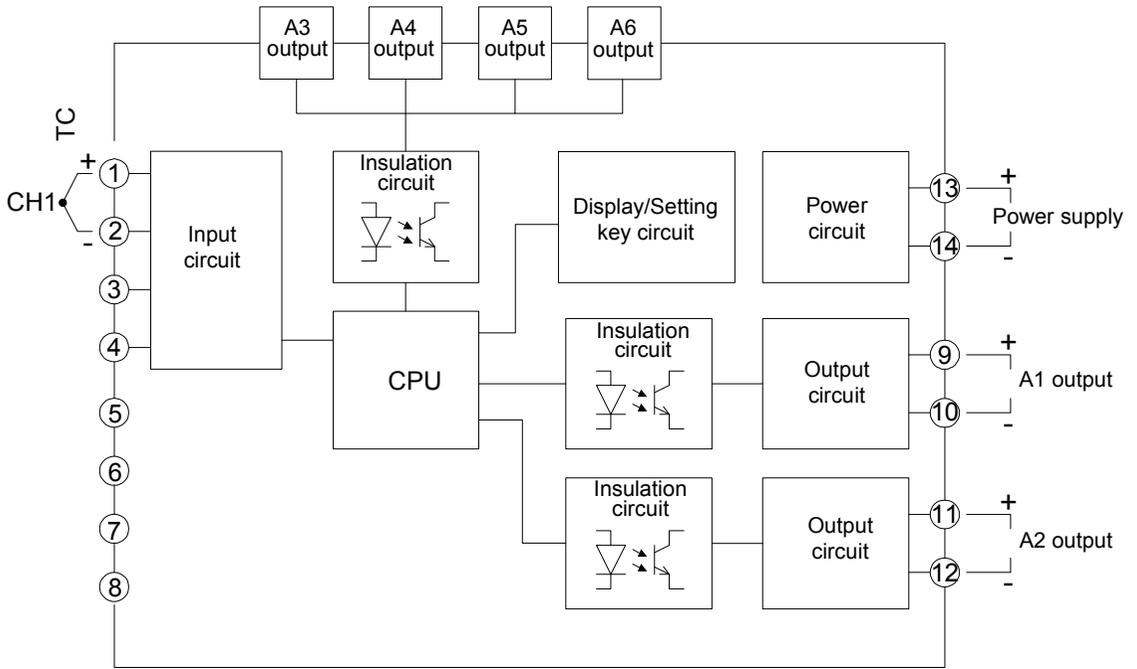
(Fig. 4.2-5)

SE1RA
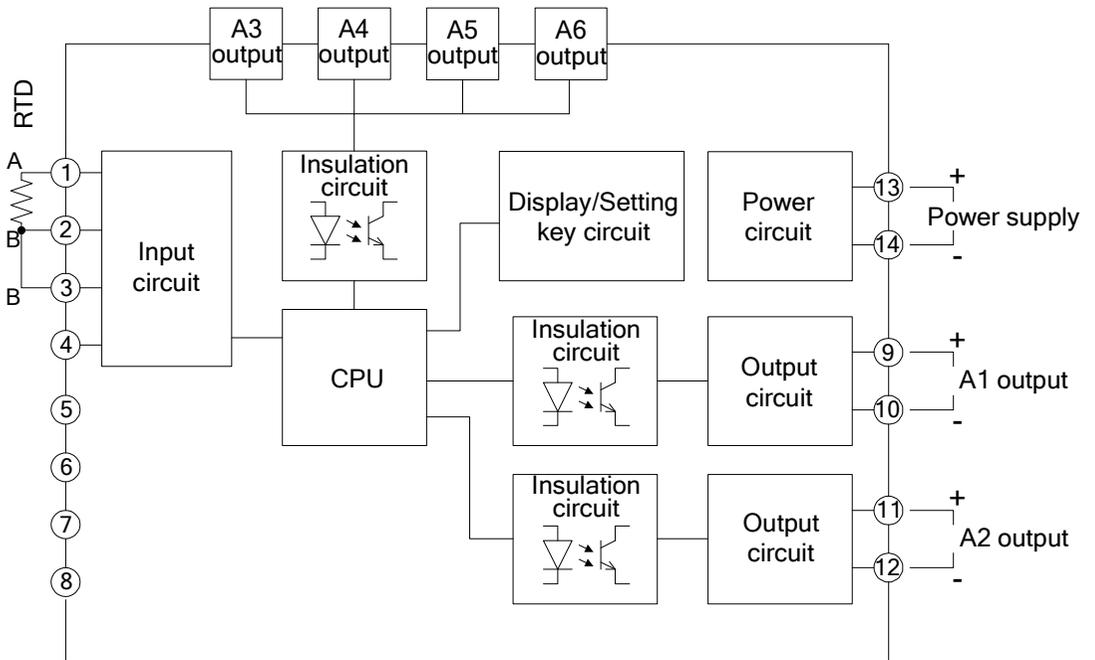
(Fig. 4.2-6)

SE1AA

(Fig. 4.2-7)

SE1VA
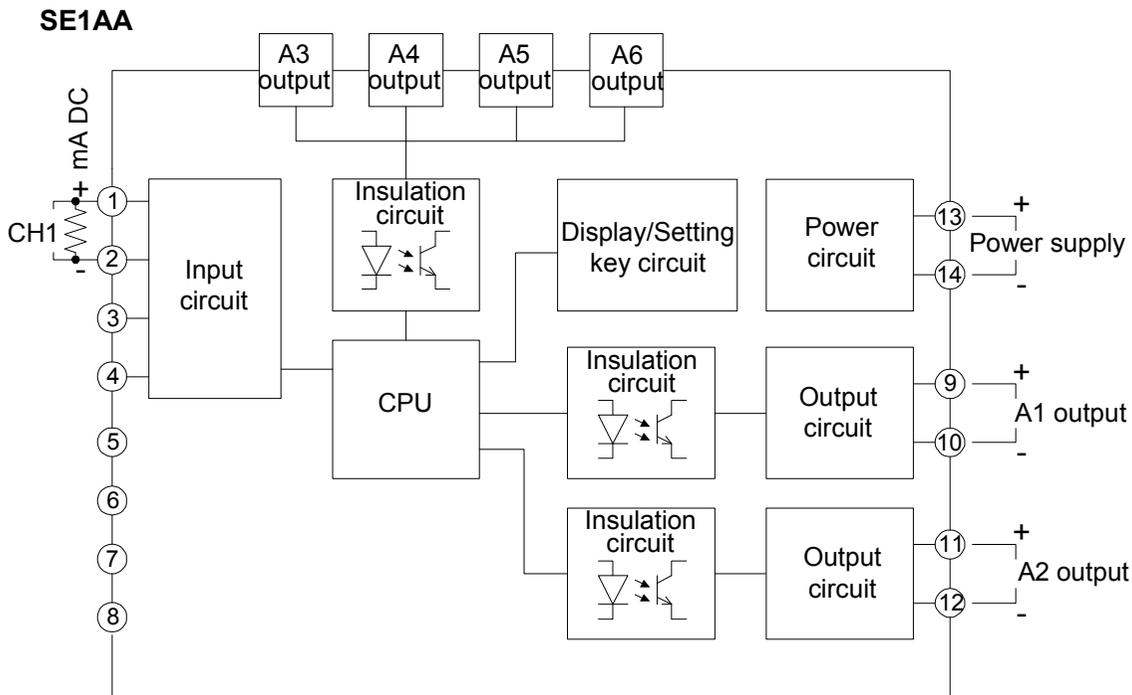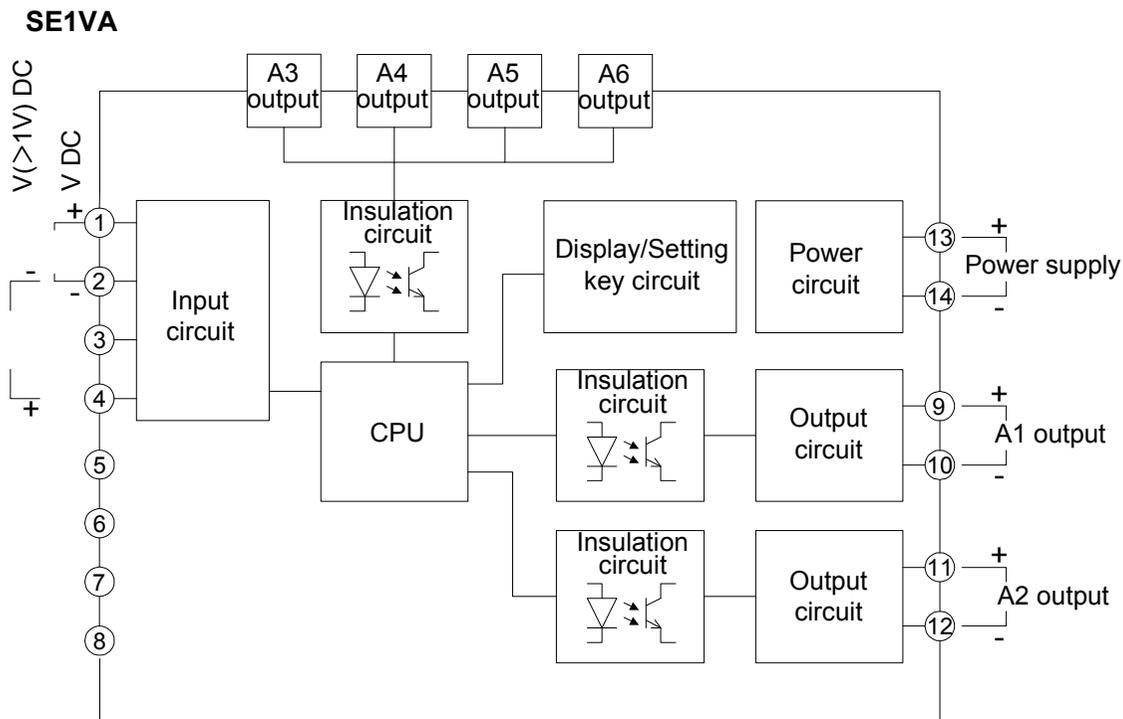
DC voltage input terminals:
V DC:　　　0 to 1 V DC
V(>1V) DC: 0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC

(Fig. 4.2-8)

4.3 Wiring of Terminals

⚠ **Warning**

• For 100 to 240V AC, if AC power source is connected to incorrect terminals, this instrument will burn out.

• For a 24V DC power source, do not confuse polarity when wiring.

4.3.1 Power Source Wiring

Use terminals 13 (+) and 14 (-) for the power supply to the instrument.

4.3.2 Output Wiring

SE2☐A: Use terminals 9 (+) and 10 (-) for CH1 A1 output wiring.
Use terminals 11 (+) and 12 (-) for CH2 A1 output wiring.

SE1☐A: Use terminals 9 (+) and 10 (-) for A1 output wiring.
Use terminals 11 (+) and 12 (-) for A2 output wiring.

Take the following measures for contact protection and noise reduction of A1 output relay.

AC Power
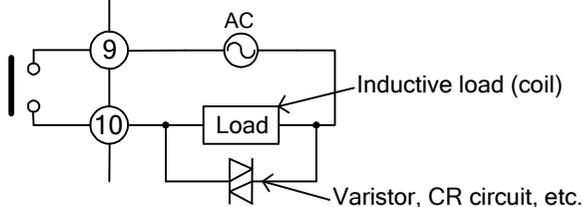
(Fig. 4.3.2-1)

DC Power
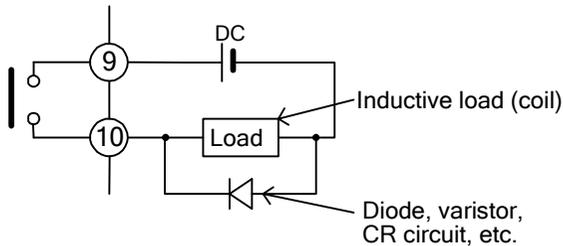
(Fig. 4.3.2-2)

For 6-points output specification, alarm output connectors are attached at the top of the unit. Refer to the alarm output corresponding to the connector number.

(Table 4.3.2-1)

Connector Number	Alarm Output	
	SE2☐A	SE1☐A
1	CH1 A2 output	A3 output
2	CH1 A3 output	A4 output
3	CH2 A2 output	A5 output
4	CH2 A3 output	A6 output

Output specifications are shown below.
Open collector   Control capacity: 0.1 A 24 V DC

Alarm output wiring example

SE□□A Top

Alarm unit   Wire harness

SE□□A Interior

DC power
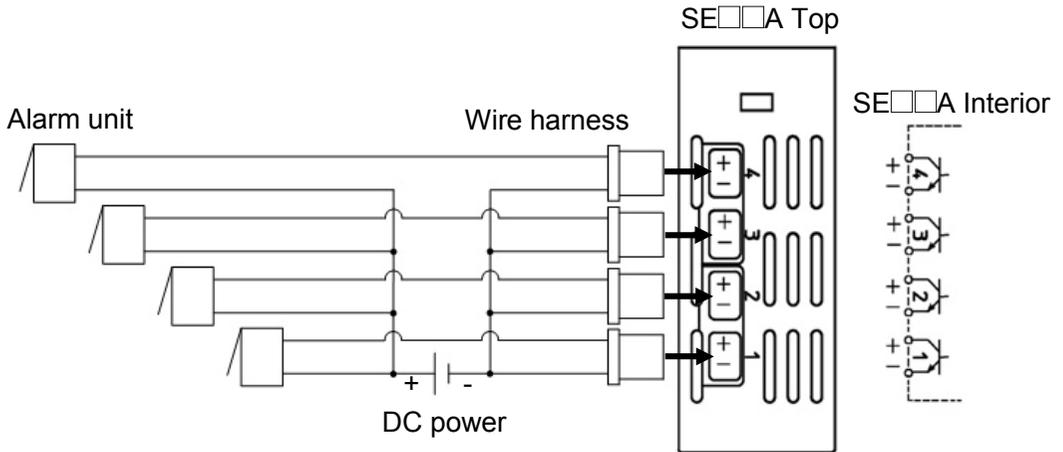
(Fig. 4.3.2-3)

4.3.3 Input Wiring
Connection terminals differ depending on the input specifications.
Refer to (Fig. 4.2-1) to (Fig. 4.2-8).

SE2AA:
For CH1, use terminals 1 (+), 2 (-) for input wiring and shunt resistor connection.
For CH2, use terminals 5 (+), 6 (-) for input wiring and shunt resistor connection.
(See Table 4.3.3-1.)

SE1AA:
Use terminals 1 (+), 2 (-) for input wiring and shunt resistor connection.
(See Table 4.3.3-1.)

(Table 4.3.3-1)

Input	Shunt Resistor			
	Model (for Y terminal)	**Model (for Ring terminal)**	**Specification**	
4 to 20 mA DC 0 to 20 mA DC 0 to 16 mA DC	RES-S06-050	RES-S01-050	50 Ω	±0.1%
2 to 10 mA DC 0 to 10 mA DC	RES-S06-100	RES-S01-100	100 Ω	±0.1%
1 to 5 mA DC	RES-S06-200	RES-S01-200	200 Ω	±0.1%
0 to 1 mA DC	RES-S06-01K	RES-S01-01K	1 kΩ	±0.1%

5. Key Operation Flowchart

SE2□A

POWER ON

RUN Mode

◎

`5 . □` **CH1** **Alarm Setting Group**	◎	`52 . □` **CH2** **Alarm Setting Group**	◎	`F.n.c. 1` **CH1** **Function Group**	◎

∨

`A1□□` `□□□0` **A1 value** Scaling low limit to Scaling high limit		`A1□□` `□□□0` **A1 value** Scaling low limit to Scaling high limit		`r.c□` `t□□C` **Input range** See (Table5-1).

◎

`A2□□` `□□□0` **A2 value** Scaling low limit to Scaling high limit	`A2□□` `□□□0` **A2 value** Scaling low limit to Scaling high limit	`dP□` `□□□0` **Decimal point place** `□□□0`: No decimal point `□□0.0`: 1 digit after point `□0.00`:2 digits after point `0.000`:3 digits after point

◎

`A3□□` `□□□0` **A3 value** Scaling low limit to Scaling high limit	`A3□□` `□□□0` **A3 value** Scaling low limit to Scaling high limit	`5rLL` `-200` **Scaling low limit** Input range low limit to Scaling high limit

◎

`5rLH` `1370` **Scaling high limit** Scaling low limit to Input range high limit

◎

`FILr` `□□0.0` **Filter time constant** 0.0 to 10.0 sec

◎

`5o□□` `□□0.0` **Sensor correction** -100.0 to 100.0℃ (℉)

◎

`AL1F` `-:-:-:-` **A1 type** See (Table 5-2).

◎

`AL2F` `-:-:-:-` **A2 type** See (Table 5-2).

◎

`AL3F` `-:-:-:-` **A3 type** See (Table 5-2).

◎

(Table 5-1)

Item	Input Type and Range	Item	Input Type and Range
Thermocouple [SE2EA]			
`t□□C`	K -200 to 1370℃	`t□□F`	K -328 to 2498℉
`t□4C`	K 0 to 400℃ (*)	`t□4F`	K 32 to 752℉ (*)
`J□□C`	J -200 to 1000℃	`J□□F`	J -328 to 1832℉
`r□□C`	R -50 to 1760℃	`r□□F`	R -58 to 3200℉
`5□□C`	S -50 to 1760℃	`5□□F`	S -58 to 3200℉
`b□□C`	B 0 to 1820℃	`b□□F`	B 32 to 3308℉
`E□□C`	E -200 to 800℃	`E□□F`	E -328 to 1472℉
`r□□C`	T -200 to 400℃ (*)	`r□□F`	T -328 to 752℉ (*)
`n□□C`	N -200 to 1300℃	`n□□F`	N -328 to 2372℉
`PL2C`	PL-Ⅱ 0 to 1390℃	`PL2F`	PL-Ⅱ 32 to 2534℉
`c□□C`	W5Re/W26Re 0 to 2315℃	`c□□F`	W5Re/W26Re 32 to 4199℉
`d□□C`	W3Re/W25Re 0 to 2315℃	`d□□F`	W3Re/W25Re 32 to 4199℉
RTD [SE2RA]			
`Pr□C`	Pt100 -200 to 850℃ (*)	`Pr□F`	Pt100 -328 to 1562℉ (*)
`JPrC`	JPt100 -200 to 500℃ (*)	`JPrF`	JPt100 -328 to 932℉ (*)
Direct current [SE2AA]		**DC voltage [SE2VA]**	
`420A`	4 to 20 mA DC -1999 to 9999	`0□1H`	0 to 1 V DC -1999 to 9999
`020A`	0 to 20 mA DC -1999 to 9999	`0□5H`	0 to 5 V DC -1999 to 9999
`016A`	0 to 16 mA DC -1999 to 9999	`1□5H`	1 to 5 V DC -1999 to 9999
`210A`	2 to 10 mA DC -1999 to 9999	`0 10H`	0 to 10 V DC -1999 to 9999
`010A`	0 to 10 mA DC -1999 to 9999	(*) "No decimal point" or "1 digit after	
`1□5A`	1 to 5 mA DC -1999 to 9999	decimal point" can be selected in	
`0□1A`	0 to 1 mA DC -1999 to 9999	[Decimal point place].	

(Table 5-2)

Item	Alarm Type
`-:-:-:-`	No alarm action
`H□□□`	High limit alarm
`L□□□`	Low limit alarm
`H□□5`	High limit with standby
`L□□5`	Low limit with standby

[About Setting Items]
- Upper left: Shows setting characters on the Input display.
  Lower left: Shows factory default value on the Set value display.
  Right: Shows setting items and ranges.
- Setting items and ranges differ depending on the model.
  For details, refer to pages 24 to 45.

[Key Operation]
- ↓◎, ↓∨ : If the ◎ or ∨ key is pressed, the unit moves to the next setting mode.
- Revets to RUN mode by pressing ◎ for 3 seconds in any setting mode.

`F.nc.2` **CH2 Function Group**	◎	`SF.n2` **Special Function Group**	◎

CH2 Function Group (`F.nc.2`)

Setting items: Same as CH1 function group.
◎

Special Function Group (`SF.n2`)

`Lock`	**Set value lock**
`------`	`------`: Unlock
	`Loc 1`: Lock 1
	`Loc2`: Lock 2

◎

`rSrn`	**Input sampling period**
`250`	`25`: 25 ms
	`125`: 125 ms
	`250`: 250 ms

◎

`LIGr`	**Auto-light function**
`------`	`------`: Disabled
	`LIGr`: Enabled

◎

`diSP`	**Display selection**
`cH 1`	`cH 1`: CH1 input value/ A1 value
	`cH 2`: CH2 input value/ A1 value
	`In  `: CH1 input value/ CH2 input value
	`nonE`: No indication

◎

`TInE`	**Indication time**
`00.00`	00.00 to 60.00(Min.Sec)

◎

CH1 Function Group items:

`A1Ln`	**A1 Energized/De-energized**
`nonL`	`nonL`: Energized
	`rEuS`: De-energized

◎

`A2Ln`	**A2 Energized/De-energized**
`nonL`	`nonL`: Energized
	`rEuS`: De-energized

◎

`A3Ln`	**A3 Energized/De-energized**
`nonL`	`nonL`: Energized
	`rEuS`: De-energized

◎

`A1Hd`	**A1 HOLD function**
`nonE`	`nonE`: OFF
	`Hold`: ON

◎

`A2Hd`	**A2 HOLD function**
`nonE`	`nonE`: OFF
	`Hold`: ON

◎

`A3Hd`	**A3 HOLD function**
`nonE`	`nonE`: OFF
	`Hold`: ON

◎

`A1HY`	**A1 hysteresis**
`1.0`	0.1 to 100.0℃ (℉)

◎

`A2HY`	**A2 hysteresis**
`1.0`	0.1 to 100.0℃ (℉)

◎

`A3HY`	**A3 hysteresis**
`1.0`	0.1 to 100.0℃ (℉)

◎

`A1dY`	**A1 delay time**
`0`	0 to 9999 sec

◎

`A2dY`	**A2 delay time**
`0`	0 to 9999 sec

◎

`A3dY`	**A3 delay time**
`0`	0 to 9999 sec

◎

SE1□A

POWER ON

↓

RUN Mode

◎

`5 . .` Alarm setting group	◎ →	`F.n.c. 1` Function Group	◎ →

Alarm setting group ∇

`A 1`	**A1 value** Scaling low limit to Scaling high limit	`A4`	**A4 value** Scaling low limit to Scaling high limit
`0`		`0`	

◎

`A2`	**A2 value** Scaling low limit to Scaling high limit	`A5`	**A5 value** Scaling low limit to Scaling high limit
`0`		`0`	

◎

`A3`	**A3 value** Scaling low limit to Scaling high limit	`A6`	**A6 value** Scaling low limit to Scaling high limit
`0`		`0`	

Function Group ∇

`r c` / `t C`	**Input range** See (Table 5-3).

◎

`dP` / `0`	**Decimal point place** `0`: No decimal point `0.0`: 1 digit after point `0.00`: 2 digits after point `0.000`: 3 digits after point

◎

`5rLL` / `-200`	**Scaling low limit** Input range low limit to Scaling high limit

◎

`5rLH` / `1370`	**Scaling high limit** Scaling low limit to Input range high limit

◎

`FILr` / `0.0`	**Filter time constant** 0.0 to 10.0 sec

◎

`5o` / `0.0`	**Sensor correction** -100.0 to 100.0℃ (℉)

◎

`AL 1F` / `----`	**A1 type** See (Table 5-4).

◎

`AL 2F` / `----`	**A2 type** See (Table 5-4).

◎

`AL 3F` / `----`	**A3 type** See (Table 5-4).

◎

`AL 4F` / `----`	**A4 type** See (Table 5-4).

◎

`AL 5F` / `----`	**A5 type** See (Table 5-4).

◎

(Table 5-3)

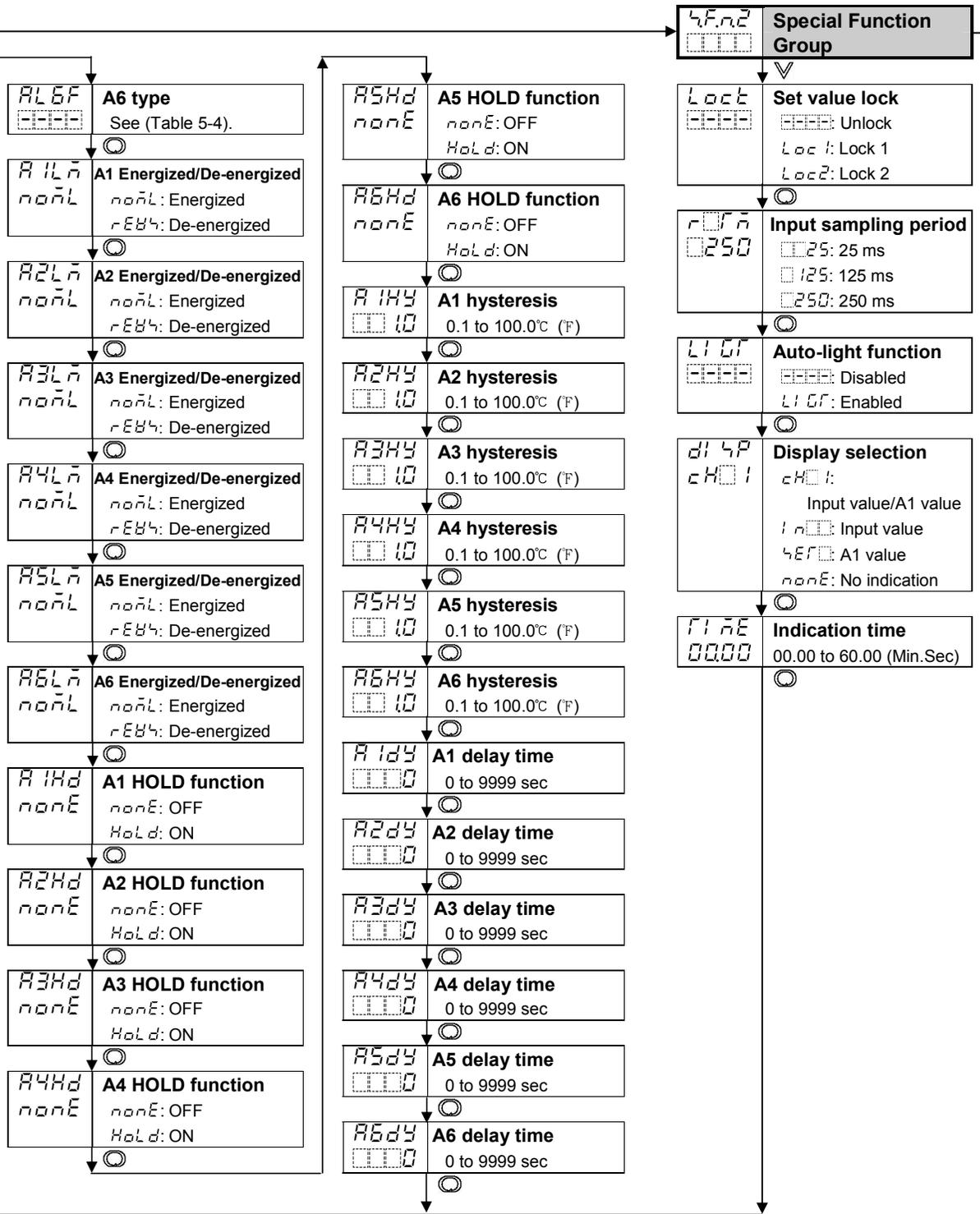| Item	Input Type and Range	Item	Input Type and Range
Thermocouple [SE1EA]			
`t C`	K -200 to 1370℃	`t F`	K -328 to 2498℉
`t 4C`	K 0 to 400℃ (*)	`t 4F`	K 32 to 752℉ (*)
`J C`	J -200 to 1000℃	`J F`	J -328 to 1832℉
`r C`	R -50 to 1760℃	`r F`	R -58 to 3200℉
`5 C`	S -50 to 1760℃	`5 F`	S -58 to 3200℉
`b C`	B 0 to 1820℃	`b F`	B 32 to 3308℉
`E C`	E -200 to 800℃	`E F`	E -328 to 1472℉
`r C`	T -200 to 400℃ (*)	`r F`	T -328 to 752℉ (*)
`n C`	N -200 to 1300℃	`n F`	N -328 to 2372℉
`PL2C`	PL-Ⅱ 0 to 1390℃	`PL2F`	PL-Ⅱ 32 to 2534℉
`c C`	W5Re/W26Re 0 to 2315℃	`c F`	W5Re/W26Re 32 to 4199℉
`d C`	W3Re/W25Re 0 to 2315℃	`d F`	W3Re/W25Re 32 to 4199℉
RTD [SE1RA]			
`Pr C`	Pt100 -200 to 850℃ (*)	`Pr F`	Pt100 -328 to 1562℉ (*)
`JPr C`	JPt100 -200 to 500℃ (*)	`JPr F`	JPt100 -328 to 932℉ (*)
Direct Current [SE1AA]		**DC Voltage [SE1VA]**	
`420A`	4 to 20 mA DC -1999 to 9999	`0 1U`	0 to 1 V DC -1999 to 9999
`020A`	0 to 20 mA DC -1999 to 9999	`0 5U`	0 to 5 V DC -1999 to 9999
`0 16A`	0 to 16 mA DC -1999 to 9999	`1 5U`	1 to 5 V DC -1999 to 9999
`2 10A`	2 to 10 mA DC -1999 to 9999	`0 10U`	0 to 10 V DC -1999 to 9999
`0 10A`	0 to 10 mA DC -1999 to 9999	(*) "No decimal point" or "1 digit after decimal point" can be selected in [Decimal point place].	
`1 5A`	1 to 5 mA DC -1999 to 9999		
`0 1A`	0 to 1 mA DC -1999 to 9999		

(Table 5-4)

Item	Alarm Type
`----`	No alarm action
`H`	High limit alarm
`L`	Low limit alarm
`H 5`	High limit with standby
`L 5`	Low limit with standby

[About Setting Items]
- Upper left: Shows setting characters on the Input display.
  Lower left: Shows factory default value on the Set value display.
  Right: Shows setting items and ranges.
- Setting items and ranges differ depending on the model.
  For details, refer to pages 24 to 45.

[Key Operation]
- ↓◎, ↓∇: If the ◎ or ∇ key is pressed, the unit moves to the next setting mode.
- Reverts to RUN mode by pressing ◎ for 3 seconds in any setting mode.

5F.n2	**Special Function Group**	◎

AL6F	**A6 type**
------	See (Table 5-4).
◎	

A1Lm	**A1 Energized/De-energized**
nomL	nomL: Energized
	rEVy: De-energized
◎	

A2Lm	**A2 Energized/De-energized**
nomL	nomL: Energized
	rEVy: De-energized
◎	

A3Lm	**A3 Energized/De-energized**
nomL	nomL: Energized
	rEVy: De-energized
◎	

A4Lm	**A4 Energized/De-energized**
nomL	nomL: Energized
	rEVy: De-energized
◎	

A5Lm	**A5 Energized/De-energized**
nomL	nomL: Energized
	rEVy: De-energized
◎	

A6Lm	**A6 Energized/De-energized**
nomL	nomL: Energized
	rEVy: De-energized
◎	

A1Hd	**A1 HOLD function**
nonE	nonE: OFF
	HoLd: ON
◎	

A2Hd	**A2 HOLD function**
nonE	nonE: OFF
	HoLd: ON
◎	

A3Hd	**A3 HOLD function**
nonE	nonE: OFF
	HoLd: ON
◎	

A4Hd	**A4 HOLD function**
nonE	nonE: OFF
	HoLd: ON
◎	

A5Hd	**A5 HOLD function**
nonE	nonE: OFF
	HoLd: ON
◎	

A6Hd	**A6 HOLD function**
nonE	nonE: OFF
	HoLd: ON
◎	

A1HY	**A1 hysteresis**
1.0	0.1 to 100.0℃ (℉)
◎	

A2HY	**A2 hysteresis**
1.0	0.1 to 100.0℃ (℉)
◎	

A3HY	**A3 hysteresis**
1.0	0.1 to 100.0℃ (℉)
◎	

A4HY	**A4 hysteresis**
1.0	0.1 to 100.0℃ (℉)
◎	

A5HY	**A5 hysteresis**
1.0	0.1 to 100.0℃ (℉)
◎	

A6HY	**A6 hysteresis**
1.0	0.1 to 100.0℃ (℉)
◎	

A1dY	**A1 delay time**
0	0 to 9999 sec
◎	

A2dY	**A2 delay time**
0	0 to 9999 sec
◎	

A3dY	**A3 delay time**
0	0 to 9999 sec
◎	

A4dY	**A4 delay time**
0	0 to 9999 sec
◎	

A5dY	**A5 delay time**
0	0 to 9999 sec
◎	

A6dY	**A6 delay time**
0	0 to 9999 sec
◎	

Loct	**Set value lock**
------	------: Unlock
	Loc1: Lock 1
	Loc2: Lock 2
◎	

rCrm	**Input sampling period**
250	25: 25 ms
	125: 125 ms
	250: 250 ms
◎	

LiGr	**Auto-light function**
------	------: Disabled
	LiGr: Enabled
◎	

diSP	**Display selection**
cH 1	cH 1: Input value/A1 value
	in: Input value
	SEr: A1 value
	nonE: No indication
◎	

Ti mE	**Indication time**
00.00	00.00 to 60.00 (Min.Sec)
◎	

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6. Setup

Setup should occur before using this unit, to set (or select) an Input range, Scaling low limit value, Scaling high limit value, Alarm type, etc. according to the users' conditions.

Setup is conducted in the CH1 function group, CH2 function group (SE2☐A) and Special function group.

Refer to the default values in (Table 6-1) to (Table 6-3).

If the users' specifications are the same as the default value of the instrument, or if setup has already been completed, it is not necessary to set up the instrument. Proceed to Section "7. Alarm settings".

Function Group

(Table 6-1) SE2☐A (CH1 and CH2 have respective setting items.)

Setting Item	Factory Default Value
Input range	K -200 to 1370℃ (SE2EA)
	Pt100 -200 to 850℃ (SE2RA)
	4 to 20 mA DC -1999 to 9999 (SE2AA)
	1 to 5 V DC -1999 to 9999 (SE2VA)
Decimal point place	No decimal point
Scaling low limit	-200℃ (SE2EA, SE2RA)
	-1999 (SE2AA, SE2VA)
Scaling high limit	1370℃ (SE2EA)
	850℃ (SE2RA)
	9999 (SE2AA, SE2VA)
Filter time constant	0.0 sec
Sensor correction	0.0℃ (SE2EA, SE2RA)
	0 (SE2AA, SE2VA)
A1 type	No alarm action
A2 type	
A3 type	
A1 Energized/De-energized	Energized
A2 Energized/De-energized	
A3 Energized/De-energized	
A1 HOLD function	OFF
A2 HOLD function	
A3 HOLD function	
A1 hysteresis	1.0℃ (SE2EA, SE2RA)
A2 hysteresis	1.0% (SE2AA, SE2VA)
A3 hysteresis	
A1 delay time	0 sec
A2 delay time	
A3 delay time	

(Table 6-2) SE1□A

Setting Item	Factory Default Value	
Input range	K -200 to 1370℃　　　　　　　(SE1EA)	
	Pt100 -200 to 850℃　　　　　　(SE1RA)	
	4 to 20 mA DC -1999 to 9999　(SE1AA)	
	1 to 5 V DC -1999 to 9999　　　(SE1VA)	
Decimal point place	No decimal point	
Scaling low limit	-200℃　(SE1EA, SE1RA)	
	-1999　(SE1AA, SE1VA)	
Scaling high limit	1370℃　(SE1EA)	
	850℃　 (SE1RA)	
	9999　　(SE1AA, SE1VA)	
Filter time constant	0.0 sec	
Sensor correction	0.0℃　 (SE1EA, SE1RA)	
	0　　　 (SE1AA, SE1VA)	
A1 type	No alarm action	
A2 type		
A3 type		
A4 type		
A5 type		
A6 type		
A1 Energized/De-energized	Energized	
A2 Energized/De-energized		
A3 Energized/De-energized		
A4 Energized/De-energized		
A5 Energized/De-energized		
A6 Energized/De-energized		
A1 HOLD function	OFF	
A2 HOLD function		
A3 HOLD function		
A4 HOLD function		
A5 HOLD function		
A6 HOLD function		
A1 hysteresis	1.0℃　 (SE1EA, SE1RA)　1.0%　(SE1AA, SE1VA)	
A2 hysteresis		
A3 hysteresis		
A4 hysteresis		
A5 hysteresis		
A6 hysteresis		

Setting Item	Factory Default Value
A1 delay time	
A2 delay time	
A3 delay time	0 sec
A4 delay time	
A5 delay time	
A6 delay time	

Special function group (Common to CH1 and CH2)

(Table 6-3)

Setting Item	Factory Default Value
Set value lock	Unlock
Input sampling period	250 ms
Auto-light function	Disabled
Display selection	CH1 input value/A1 value (SE2□A)
	Input value/A1 value (SE1□A)
Indication time	00.00 (Continuous indication)

6.1 Indication after Power-on

After power-on, the unit moves to warm-up status for approx. 3 seconds as shown below in (Fig. 6.1-1) and (Fig. 6.1-2).

SE2☐A

Lights when power-on.

Indicates CH1 input range.
For the SE2VA, indicates $I\square 5U$ as the factory default value is 1 to 5 V DC.

Indicates CH2 input range.
For the SE2VA, indicates $I\square 5U$ as the factory default value is 1 to 5 V DC.

(Fig. 6.1-1)

SE1☐A

Lights when power-on.

Indicates the input range.
For the SE1VA, indicates $I\square 5U$ as the factory default value is 1 to 5 V DC.
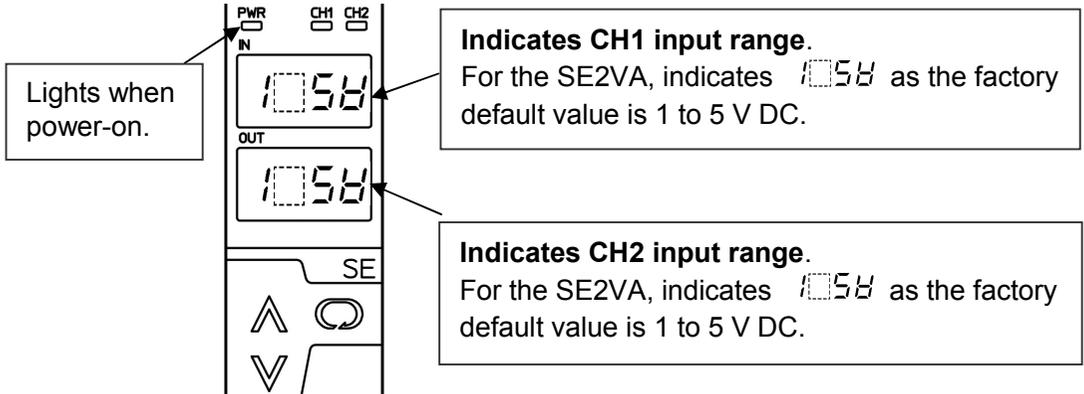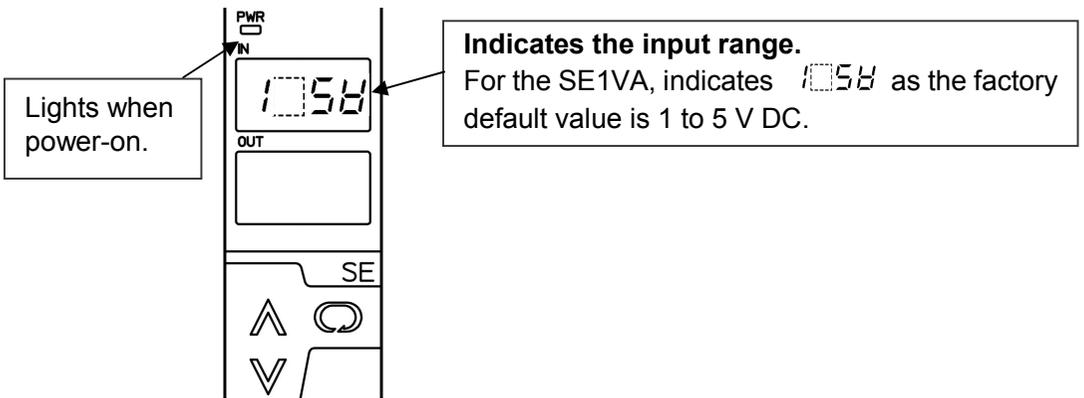
(Fig. 6.1-2)

After that, the unit switches to RUN mode as shown below in (Fig. 6.1-3), (Fig. 6.1-4).

SE2☐A

Lights when power-on.

The relevant indicator lights when the Input and Set value displays indicate CH1 or CH2.

For the factory default value, indicates CH1 input value.

For the factory default value, indicates CH1 A1 value.

Input value

Set value

(Fig. 6.1-3)

SE1☐A

Lights when power-on.

For the factory default value, indicates the input value.

For the factory default value, indicates A1 value.

Input value

Set value

(Fig. 6.1-4)

6.2 Basic Operation of Setup

Setup is conducted in each function group.
For the SE2☐A, CH1 and CH2 should be set respectively.

(E.g.) To enter the CH1 function group for the SE2VA:
   (1) Press the ⟲ key 3 times in the RUN mode. (Fig. 6.2-1)
   (2) Press the ⩒ key while CH1 function group characters are indicated.
      (Fig. 6.2-2)
   (3) The unit moves to the "Input range" selection item in CH1 function group.
      To set (or select) each item, use the ⩘ or ⩒ key, and register the value
      with the ⟲ key. (Fig. 6.2-3)
      If the ⟲ key is pressed at the last setting item of each group, the unit
      reverts to the RUN mode.

(1) RUN Mode

Input value

Set value
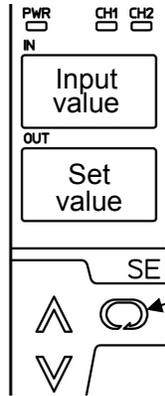
Press the ◯ key 3 times in the RUN mode.

(Fig. 6.2-1)

(2) CH1 Function Group

F.n.c. 1
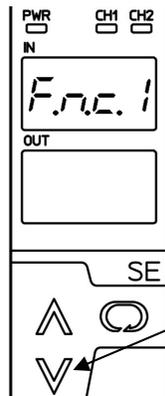
Press the ∨ key while CH1 function group characters are indicated.

(Fig. 6.2-2)

(3) Input Range Selection

dcb

15b
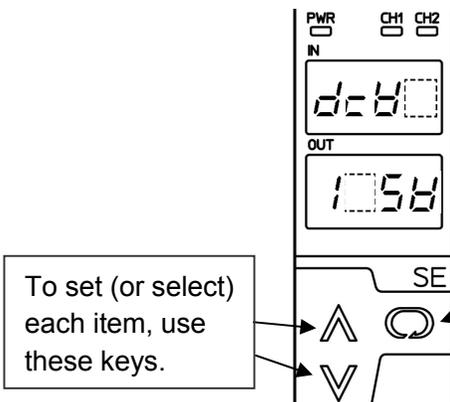
To set (or select) each item, use these keys.

To proceed to each setting item or to register the set (selected) value in CH1 function group, use this key.

(Fig. 6.2-3)

6.3 Setup
6.3.1 Function Group

For the SE2☐A, this is the function group for CH1.

To enter the function group, follow the procedures below.

(1) $F.nc.\ 1$　Press the ◎ key in the RUN mode until the left characters appear.
(2) $\ulcorner c☐☐$　Press the Ⅴ key.
　　　For the SE2EA and SE1EA, thermocouple input range appears.
　　　For the SE2RA and SE1RA, RTD input range appears.
　　　For the SE2AA and SE1AA, direct current input range appears.
　　　For the SE2VA and SE1VA, DC voltage input range appears.

Display	Name, Function, Setting Range		Factory Default Value
IN $\ulcorner c☐☐$	**Input range (SE2EA, SE1EA)**		K -200 to 1370℃
OUT $\boldsymbol{t}☐☐\boldsymbol{C}$	• For the SE2EA and SE1EA, selects a thermocouple input range.		
	• Selection item:		
	$t☐☐C$: K	-200 to 1370℃	
	$t☐4C$: K (*)	0　to 400℃	
	$J☐☐C$: J	-200 to 1000℃	
	$r☐☐C$: R	-50　to 1760℃	
	$5☐☐C$: S	-50　to 1760℃	
	$b☐☐C$: B	0　to 1820℃	
	$E☐☐C$: E	-200 to 800℃	
	$\ulcorner☐☐C$: T (*)	-200 to 400℃	
	$n☐☐C$: N	-200 to 1300℃	
	$PL2C$: PL-Ⅱ	0　to 1390℃	
	$c☐☐C$: W5Re/W26Re	0　to 2315℃	
	$d☐☐C$: W3Re/W25Re	0　to 2315℃	
	$t☐☐F$: K	-328 to 2498℉	
	$t☐4F$: K (*)	32　to 752℉	
	$J☐☐F$: J	-328 to 1832℉	
	$r☐☐F$: R	-58　to 3200℉	
	$5☐☐F$: S	-58　to 3200℉	
	$b☐☐F$: B	32　to 3308℉	
	$E☐☐F$: E	-328 to 1472℉	
	$\ulcorner☐☐F$: T (*)	-328 to 752℉	
	$n☐☐F$: N	-328 to 2372℉	
	$PL2F$: PL-Ⅱ	32　to 2534℉	
	$c☐☐F$: W5Re/W26Re	32　to 4199℉	
	$d☐☐F$: W3Re/W25Re	32　to 4199℉	

Display	Name, Function, Setting Range	Factory Default Value

IN ⌐⌐d☐
 OUT Pr☐C
	Input range (SE2RA, SE1RA)
	
	 • For the SE2RA and SE1RA, selects a RTD input range.
	 • Selection item:
	   Pr☐C: Pt100 (*) -200 to 850℃
	   JPrC: JPt100 (*) -200 to 500℃
	   Pr☐F: Pt100 (*) -328 to 1562℉
	   JPrF: JPt100 (*) -328 to 932℉
		Pt100 -200 to 850℃

IN dcA☐
 OUT 420A
	Input range (SE2AA, SE1AA)
	
	 • For the SE2AA and SE1AA, selects a direct current input range.
	 • Selection item:
	   420A: 4 to 20 mA DC -1999 to 9999
	   020A: 0 to 20 mA DC -1999 to 9999
	   016A: 0 to 16 mA DC -1999 to 9999
	   210A: 2 to 10 mA DC -1999 to 9999
	   010A: 0 to 10 mA DC -1999 to 9999
	   105A: 1 to 5 mA DC -1999 to 9999
	   001A: 0 to 1 mA DC -1999 to 9999
		4 to 20 mA DC -1999 to 9999

IN dcV☐
 OUT 105V
	Input range (SE2VA, SE1VA)
	
	 • For the SE2VA and SE1VA, selects a DC voltage input range.
	 • Selection item:
	   001V: 0 to 1 V DC -1999 to 9999
	   005V: 0 to 5 V DC -1999 to 9999
	   105V: 1 to 5 V DC -1999 to 9999
	   010V: 0 to 10 V DC -1999 to 9999
		1 to 5 V DC -1999 to 9999

IN dP☐☐
 OUT ☐☐☐0
	Decimal point place
	
	 • Selects the decimal point place.
	   Available for the SE2AA, SE2VA, SE1AA and SE1VA.
	   For the SE2EA, SE2RA, SE1EA and SE1RA with (*) range, "No decimal
	   point" and "1 digit after decimal point" can be selected.
	 • Selection item:
	   ☐☐☐0: No decimal point
	   ☐☐0.0: 1 digit after decimal point
	   ☐0.00: 2 digits after decimal point
	   0.000: 3 digits after decimal point
		No decimal point

IN SrLL
 OUT -200
	Scaling low limit
	
	 • Sets scaling low limit value.
	 • Setting range:
	   SE2EA, SE2RA, SE1EA and SE1RA:
	      Input range low limit to Scaling high limit value
	   SE2AA, SE2VA, SE1AA and SE1VA:
	      -1999 to Scaling high limit value
		-200℃ (SE2EA, SE2RA, SE1EA, SE1RA)
		 -1999 (SE2AA, SE2VA, SE1AA, SE1VA)

Display	Name, Function, Setting Range		Factory Default Value
IN Чⲅ℄Ƙ OUT ℔℈℔	**Scaling high limit**	1370℃	(SE2EA, SE1EA)
		850℃	(SE2RA, SE1RA)
		9999	(SE2AA, SE2VA, SE1AA, SE1VA)
	• Sets scaling high limit value.		
	• Setting range:		
	SE2EA. SE2RA, SE1EA and SE1RA:		
	Scaling low limit to Input range high limit		
	SE2AA, SE2VA, SE1AA and SE1VA:		
	Scaling low limit to 9999		
IN ℉ℹⳑⲅ OUT ⎕℔℔	**Filter time constant**		0.0 sec
	• Sets filter time constant.		
	Input fluctuation due to noise can be reduced.		
	• Setting range: 0.0 to 10.0 sec		
IN Ƭℴ⎕ OUT ⎕℔℔	**Sensor correction**	0.0℃	(SE2EA, SE2RA, SE1EA, SE1RA)
		0	(SE2AA, SE2VA, SE1AA, SE1VA)
	• Sets sensor correction value.		
	Input value = Current input value +(Sensor correction value)		
	• Setting range:		
	SE2EA, SE2RA, SE1EA and SE1RA: -100.0 to 100.0℃ （℉)		
	SE2AA, SE2VA, SE1AA and SE1VA: -1000 to 1000		

Display	Name, Function, Setting Range	Factory Default Value
$\overset{\text{IN}}{AL}$ IF $\overset{\text{OUT}}{\boxed{\text{-}\text{-}\text{-}\text{-}}}$	**A1 type**	No alarm action

• Selects an A1 type.

  Note: If an A1 type is changed, the A1 value defaults to 0 (0.0).

• Selection item:

   $\boxed{\text{-}\text{-}\text{-}\text{-}}$: No alarm action

   $H\boxed{}$: High limit alarm

   $L\boxed{}$: Low limit alarm

   $H\boxed{}\bar{u}$: High limit alarm with standby

   $L\boxed{}\bar{u}$: Low limit alarm with standby

• Alarm action:

High limit alarm	Low limit alarm
A1 hysteresis ON OFF A1 value	A1 hysteresis ON OFF A1 value
High limit alarm with standby	**Low limit alarm with standby**
A1 hysteresis ON OFF A1 value ///// Standby functions.	A1 hysteresis ON OFF A1 value ///// Standby functions.

Display	Name, Function, Setting Range	Factory Default Value
_{IN} $AL2F$ _{OUT} 표표표표	**A2 type**	No alarm action

	• Selects an A2 type.
	 Available for 6 points alarm output for the SE2□A.
	 Note: If an A2 type is changed, the A2 value defaults to 0 (0.0).
	 • Selection item:
	   표표표표: No alarm action
	   $H\_\_\_$: High limit alarm
	   $L\_\_\_$: Low limit alarm
	   $H\_\_\bar{\omega}$: High limit alarm with standby
	   $L\_\_\bar{\omega}$: Low limit alarm with standby
	 • Alarm action:
	 Refer to the A1 action. (p.33)	

_{IN} $AL3F$ _{OUT} 표표표표	**A3 type**	No alarm action

	• Selects an A3 type.
	 Available for 6 points alarm output for the SE1□A and SE2□A.
	 Note: If an A3 type is changed, the A3 value defaults to 0 (0.0).
	 • Selection item:
	   표표표표: No alarm action
	   $H\_\_\_$: High limit alarm
	   $L\_\_\_$: Low limit alarm
	   $H\_\_\bar{\omega}$: High limit alarm with standby
	   $L\_\_\bar{\omega}$: Low limit alarm with standby
	 • Alarm action:
	 Refer to the A1 action. (p.33)	

_{IN} $AL4F$ _{OUT} 표표표표	**A4 type**	No alarm action

	• Selects an A4 type.
	 Available for 6 points alarm output for the SE1□A.
	 Note: If an A4 type is changed, the A4 value defaults to 0 (0.0).
	 • Selection item:
	   표표표표: No alarm action
	   $H\_\_\_$: High limit alarm
	   $L\_\_\_$: Low limit alarm
	   $H\_\_\bar{\omega}$: High limit alarm with standby
	   $L\_\_\bar{\omega}$: Low limit alarm with standby
	 • Alarm action:
	 Refer to the A1 action. (p.33)	

Display	Name, Function, Setting Range	Factory Default Value
^{IN} $RL5F$ ^{OUT} `-:-:-:-:`	**A5 type**	No alarm action

	• Selects an A5 type.
	   Available for 6 points alarm output for the SE1☐A.
	   Note: If an A5 type is changed, the A5 value defaults to 0 (0.0).
	 • Selection item:
	   `-:-:-:-:`: No alarm action
	   $H☐☐☐$: High limit alarm
	   $L☐☐☐$: Low limit alarm
	   $H☐☐ϛ$: High limit alarm with standby
	   $L☐☐ϛ$: Low limit alarm with standby
	 • Alarm action: Refer to the A1 action. (p.33)	

^{IN} $RL6F$ ^{OUT} `-:-:-:-:`	**A6 type**	No alarm action

	• Selects an A6 type.
	   Available for 6 points alarm output for the SE1☐A.
	   Note: If an A6 type is changed, the A6 value defaults to 0 (0.0).
	 • Selection item:
	   `-:-:-:-:`: No alarm action
	   $H☐☐☐$: High limit alarm
	   $L☐☐☐$: Low limit alarm
	   $H☐☐ϛ$: High limit alarm with standby
	   $L☐☐ϛ$: Low limit alarm with standby
	 • Alarm action: Refer to the A1 action. (p.33)	

^{IN} $R1Lⁿ$ ^{OUT} $noⁿL$	**A1 Energized/De-energized**	Energized

	• Selects A1 action Energized or De-energized.
	   Not available if `-:-:-:-:` (No alarm action) is selected in [A1 type].
	 • Selection item:
	   $noⁿL$: Energized
	   $rE⅄5$: De-energized	

^{IN} $R2Lⁿ$ ^{OUT} $noⁿL$	**A2 Energized/De-energized**	Energized

	• Selects A2 action Energized or De-energized.
	   Not available if `-:-:-:-:` (No alarm action) is selected in [A2 type].
	 • Selection item:
	   $noⁿL$: Energized
	   $rE⅄5$: De-energized	

^{IN} $R3Lⁿ$ ^{OUT} $noⁿL$	**A3 Energized/De-energized**	Energized

	• Selects A3 action Energized or De-energized.
	   Not available if `-:-:-:-:` (No alarm action) is selected in [A3 type].
	 • Selection item:
	   $noⁿL$: Energized
	   $rE⅄5$: De-energized	

Display	Name, Function, Setting Range	Factory Default Value
IN ꓵ4Lꓵ OUT nonL	**A4 Energized/De-energized**	Energized
	• Selects A4 action Energized or De-energized. Not available if ▫▫▫▫ (No alarm action) is selected in [A4 type]. • Selection item: nonL: Energized rEꓵ�: De-energized	
IN ꓵ5Lꓵ OUT nonL	**A5 Energized/De-energized**	Energized
	• Selects A5 action Energized or De-energized. Not available if ▫▫▫▫ (No alarm action) is selected in [A5 type]. • Selection item: nonL: Energized rEꓵ455: De-energized	
IN ꓵ6Lꓵ OUT nonL	**A6 Energized/De-energized**	Energized
	• Selects A6 action Energized or De-energized. Not available if ▫▫▫▫ (No alarm action) is selected in [A6 type]. • Selection item: nonL: Energized rEꓵ455: De-energized	
IN ꓵ1Hd OUT nonE	**A1 HOLD function**	OFF
	• Selects OFF or ON for A1 HOLD function. If alarm HOLD is selected, once A1 activates, A1 output ON status will be maintained until power is turned OFF. Not available if ▫▫▫▫ (No alarm action) is selected in [A1 type]. • Selection item: nonE: OFF HoLd: ON	
IN ꓵ2Hd OUT nonE	**A2 HOLD function**	OFF
	• Selects OFF or ON for A2 HOLD function. If alarm HOLD is selected, once A2 activates, A2 output ON status will be maintained until power is turned OFF. Not available if ▫▫▫▫ (No alarm action) is selected in [A2 type]. • Selection item: nonE: OFF HoLd: ON	
IN ꓵ3Hd OUT nonE	**A3 HOLD function**	OFF
	• Selects OFF or ON for A3 HOLD function. If alarm HOLD is selected, once A3 activates, A3 output ON status will be maintained until power is turned OFF. Not available if ▫▫▫▫ (No alarm action) is selected in [A3 type]. • Selection item: nonE: OFF HoLd: ON	

Display	Name, Function, Setting Range		Factory Default Value
IN $R4Hd$ OUT $nonE$	**A4 HOLD function**		OFF
	• Selects OFF or ON for A4 HOLD function. If alarm HOLD is selected, once A4 activates, A4 output ON status will be maintained until power is turned OFF. Not available if ⊡⊡⊡⊡ (No alarm action) is selected in [A4 type]. • Selection item: $nonE$: OFF $HoLd$: ON		
IN $R5Hd$ OUT $nonE$	**A5 HOLD function**		OFF
	• Selects OFF or ON for A5 HOLD function. If alarm HOLD is selected, once A5 activates, A5 output ON status will be maintained until power is turned OFF. Not available if ⊡⊡⊡⊡ (No alarm action) is selected in [A5 type]. • Selection item: $nonE$: OFF $HoLd$: ON		
IN $R6Hd$ OUT $nonE$	**A6 HOLD function**		OFF
	• Selects OFF or ON for A6 HOLD function. If alarm HOLD is selected, once A6 activates, A6 output ON status will be maintained until power is turned OFF. Not available if ⊡⊡⊡⊡ (No alarm action) is selected in [A6 type]. • Selection item: $nonE$: OFF $HoLd$: ON		
IN $R1HY$ OUT 1.0	**A1 hysteresis**	1.0℃ (SE2EA, SE2RA, SE1EA, SE1RA)	
		1.0% (SE2AA, SE2VA, SE1AA, SE1VA)	
	• Sets A1 action hysteresis Not available if ⊡⊡⊡⊡ (No alarm action) is selected in [A1 type]. • Setting range: SE2EA, SE2RA, SE1EA and SE1RA: 0.1 to 100.0℃ (℉) SE2AA, SE2VA, SE1AA and SE1VA: 0.1 to 100.0% of input span		
IN $R2HY$ OUT 1.0	**A2 hysteresis**	1.0℃ (SE2EA, SE2RA, SE1EA, SE1RA)	
		1.0% (SE2AA, SE2VA, SE1AA, SE1VA)	
	• Sets A2 action hysteresis Not available if ⊡⊡⊡⊡ (No alarm action) is selected in [A2 type]. • Setting range: SE2EA, SE2RA, SE1EA and SE1RA: 0.1 to 100.0℃ (℉) SE2AA, SE2VA, SE1AA and SE1VA: 0.1 to 100.0% of input span		

Display	Name, Function, Setting Range		Factory Default Value
^{IN} A3HY ^{OUT} 1.0	**A3 hysteresis**	1.0℃	(SE2EA, SE2RA, SE1EA, SE1RA)
		1.0%	(SE2AA, SE2VA, SE1AA, SE1VA)
	• Sets A3 action hysteresis Not available if ⊟⊟⊟ (No alarm action) is selected in [A3 type]. • Setting range: 　SE2EA, SE2RA, SE1EA and SE1RA: 0.1 to 100.0℃（℉） 　SE2AA, SE2VA, SE1AA and SE1VA: 0.1 to 100.0% of input span		
^{IN} A4HY ^{OUT} 1.0	**A4 hysteresis**	1.0℃	(SE1EA, SE1RA)
		1.0%	(SE1AA, SE1VA)
	• Sets A4 action hysteresis Not available if ⊟⊟⊟ (No alarm action) is selected in [A4 type]. • Setting range: 　SE2EA, SE2RA, SE1EA and SE1RA: 0.1 to 100.0℃（℉） 　SE2AA, SE2VA, SE1AA and SE1VA: 0.1 to 100.0% of input span		
^{IN} A5HY ^{OUT} 1.0	**A5 hysteresis**	1.0℃	(SE1EA, SE1RA)
		1.0%	(SE1AA, SE1VA)
	• Sets A5 action hysteresis Not available if ⊟⊟⊟ (No alarm action) is selected in [A5 type]. • Setting range: 　SE2EA, SE2RA, SE1EA and SE1RA: 0.1 to 100.0℃（℉） 　SE2AA, SE2VA, SE1AA and SE1VA: 0.1 to 100.0% of input span		
^{IN} A6HY ^{OUT} 1.0	**A6 hysteresis**	1.0℃	(SE1EA, SE1RA)
		1.0%	(SE1AA, SE1VA)
	• Sets A6 action hysteresis Not available if ⊟⊟⊟ (No alarm action) is selected in [A6 type]. • Setting range: 　SE2EA, SE2RA, SE1EA and SE1RA: 0.1 to 100.0℃（℉） 　SE2AA, SE2VA, SE1AA and SE1VA: 0.1 to 100.0% of input span		
^{IN} A1dY ^{OUT} 0	**A1 delay time**		0 sec
	• Sets A1 action delay time. A1 output does not turn ON until the set delay time has elapsed after the input enters the A1 output range. Not available if ⊟⊟⊟ (No alarm action) is selected in [A1 type]. • Setting range: 0 to 9999 sec		

Display	Name, Function, Setting Range	Factory Default Value
IN $A2dy$ OUT $\boxed{0}$	**A2 delay time**	0 sec
	• Sets A2 action delay time. A2 output does not turn ON until the set delay time has elapsed after the input enters the A2 output range. Not available if $\boxed{----}$ (No alarm action) is selected in [A2 type]. • Setting range: 0 to 9999 sec	
IN $A3dy$ OUT $\boxed{0}$	**A3 delay time**	0 sec
	• Sets A3 action delay time. A3 output does not turn ON until the set delay time has elapsed after the input enters the A3 output range. Not available if $\boxed{----}$ (No alarm action) is selected in [A3 type]. • Setting range: 0 to 9999 sec	
IN $A4dy$ OUT $\boxed{0}$	**A4 delay time**	0 sec
	• Sets A4 action delay time. A4 output does not turn ON until the set delay time has elapsed after the input enters the A4 output range. Not available if $\boxed{----}$ (No alarm action) is selected in [A4 type]. • Setting range: 0 to 9999 sec	
IN $A5dy$ OUT $\boxed{0}$	**A5 delay time**	0 sec
	• Sets A5 action delay time. A5 output does not turn ON until the set delay time has elapsed after the input enters the A5 output range. Not available if $\boxed{----}$ (No alarm action) is selected in [A5 type]. • Setting range: 0 to 9999 sec	
IN $A6dy$ OUT $\boxed{0}$	**A6 delay time**	0 sec
	• Sets A6 action delay time. A6 output does not turn ON until the set delay time has elapsed after the input enters the A6 output range. Not available if $\boxed{----}$ (No alarm action) is selected in [A6 type]. • Setting range: 0 to 9999 sec	

6.3.2 CH2 Function Group

Available only for the SE2☐A.

To enter the CH2 Function Group, follow the procedures below.
(1) $F.nc.2$ In the RUN mode, press the ◎ key until the left characters appear.
(2) $rc☐☐$ Press the ∨ key.
   For the SE2EA, thermocouple input range selection item appears.
   For the SE2RA, RTD input range selection item appears.
   For the SE2AA, direct current input range selection item appears.
   For the SE2VA, DC voltage input range selection item appears.

Setting items are the same as those of Section "6.3.1 Function Group". (Pages 30 to 39)
Set up the unit referring to the explanation of Section "6.3.1 Function Group".

6.3.3 Special Function Group

For the SE2☐A, setting items are common to CH1 and CH2.

To enter the Special function group, follow the procedures below.

(1) $5.F.n2$ In the RUN mode, press the ◎ key until the left characters appear.
(2) $Lock$ Press the ∨ key. "Set value lock" appears.

Display	Name, Function, Setting Range	Factory Default Value
IN $Lock$ OUT $-----$	**Set value lock**	Unlock

	• Locks the set values to prevent setting errors.
	• Selection item:
	  $-----$: Unlock
	  $Loc\,1$: Lock 1 (None of the set values can be changed.)
	  $Loc2$: Lock 2 (Only alarm setting groups can be changed.)	

IN $r☐rn$ OUT $☐250$	**Input sampling period**	250 ms

	• Selects the input sampling period.
	• Selection item:
	  $☐☐25$: 25 ms
	  $☐125$: 125 ms
	  $☐250$: 250 ms	

IN $L1\,Gr$ OUT $-----$	**Auto-light function**	Disabled

	• Selects Auto-light function Enabled/Disabled.
	• Selection item:
	  $-----$: Disabled
	  $U5E☐$: Enabled	

Display	Name, Function, Setting Range		Factory Default Value
ᴵᴺ_d̄I ꞌꞭP_ OUT_ c̄H◻Ꞁ_	**Display selection**		CH1 input value/A1 value (SE2◻A)
			Input value /A1 value (SE1◻A)
	• Selects items to be indicated on the displays.		
	• Selection item:		
	SE2◻A:		
	c̄H◻Ꞁ: CH1 input value /A1 value		
	c̄H◻2: CH2 input value /A1 value		
	Ꞁ n◻: Input value (CH1/CH2)		
	nonE: No indication (Only the Power indicator is lit.)		
	SE1◻A:		
	c̄H◻Ꞁ: Input value /A1 value		
	Ꞁ n◻: Input value		
	ꞋEꞂ: A1 value		
	nonE: No indication (Only the Power indicator is lit.)		
ᴵᴺ_ꞀꞀ ꞆE_ OUT_ 00.00_	**Indication time**		00.00 (Continuous indication)
	• Sets the indication time of the displays after final key operation.		
	Not available if nonE [No indication (Only the Power indicator is lit.)]		
	is selected in [Display selection].		
	Displays will go off (Only the Power indicator is lit.) after the indication		
	time has elapsed.		
	When the $\wedge$, $\vee$, $\circledcirc$ or SUB-MODE key is pressed, or when power		
	is turned ON again, the displays will light again.		
	• Setting Range:		
	00.00: Continuous indication		
	00.01 (1 second) to 60.00 (60 minutes) (Minutes.Seconds)		

7. Alarm Settings

7.1 Basic Operation of Alarm Settings

Alarm settings are conducted in the Alarm setting groups.
For the SE2☐A, CH1, CH2 should be set respectively.

To enter the Alarm setting group, press the ◎ key in the RUN mode. (Fig. 7.1-1)
Press the ∀ key while Alarm setting group characters are being indicated. (Fig. 7.1-2)
The unit will proceed to the "A1 value" in the Alarm setting group.
For alarm settings, use the ∧ or ∀ key, and register the value with the ◎ key.
(Fig. 7.1-3)

If the ◎ key is pressed at the last setting item, the unit will revert to the RUN mode.

(1) RUN Mode
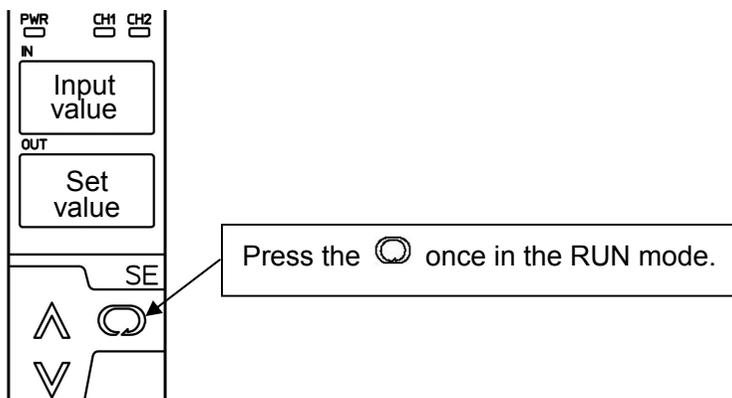
(Fig. 7.1-1)

(2) Alarm Setting Group
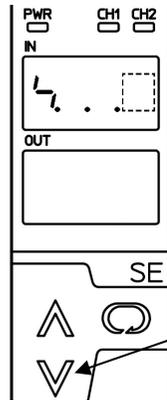
Press the $\mathbb{V}$ key while the Alarm setting group characters are being indicated.

(Fig. 7.1-2)

(3) A1 Value
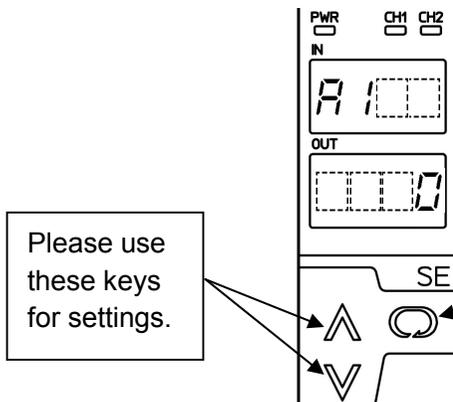
Please use these keys for settings.

To proceed to each setting item and to register the set value, please use this key.

(Fig. 7.1-3)

7.2 Alarm Settings
7.2.1 Alarm Setting Group
For the SE2□A, this is the alarm setting group for CH1.

To enter the Alarm setting group, follow the procedures below.

(1) 5 . □   In the RUN mode, press the ⊚ key once.
(2) A 1 □   Press the ∨ key. "A1 value" appears.

Display	Name, Function, Setting Range	Factory Default Value
IN A 1□ OUT □0	**A1 value**	0℃ (SE2EA, SE2RA, SE1EA, SE1RA)
		0 (SE2AA, SE2VA, SE1AA, SE1VA)
	• Sets the A1 value. Not available if ⊟⊟⊟ (No alarm action) is selected in [A1 type]. • Setting range: Scaling low limit to Scaling high limit	
IN A2□ OUT □0	**A2 value**	0℃ (SE2EA, SE2RA, SE1EA, SE1RA)
		0 (SE2AA, SE2VA, SE1AA, SE1VA)
	• Sets the A2 value. Not available if ⊟⊟⊟ (No alarm action) is selected in [A2 type]. • Setting range: Scaling low limit to Scaling high limit	
IN A3□ OUT □0	**A3 value**	0℃ (SE2EA, SE2RA, SE1EA, SE1RA)
		0 (SE2AA, SE2VA, SE1AA, SE1VA)
	• Sets the A3 value. Not available if ⊟⊟⊟ (No alarm action) is selected in [A3 type]. • Setting range: Scaling low limit to Scaling high limit	
IN A4□ OUT □0	**A4 value**	0℃ (SE1EA, SE1RA)
		0 (SE1AA, SE1VA)
	• Sets the A4 value. Not available if ⊟⊟⊟ (No alarm action) is selected in [A4 type]. • Setting range: Scaling low limit to Scaling high limit	
IN A5□ OUT □0	**A5 value**	0℃ (SE1EA, SE1RA)
		0 (SE1AA, SE1VA)
	• Sets the A5 value. Not available if ⊟⊟⊟ (No alarm action) is selected in [A5 type]. • Setting range: Scaling low limit to Scaling high limit	
IN A6□ OUT □0	**A6 value**	0℃ (SE1EA, SE1RA)
		0 (SE1AA, SE1VA)
	• Sets the A6 value. Not available if ⊟⊟⊟ (No alarm action) is selected in [A6 type]. • Setting range: Scaling low limit to Scaling high limit	

7.2.2 CH2 Alarm Setting Group

Available only for the SE2☐A.

To enter the CH2 alarm setting group, follow the procedures below.

(1) ⁵⁻²̄. ☐   In the RUN mode, press the ◎ key twice.
(2) ⁿ /☐☐   Press the ∨ key. "A1 value" appears.

Setting items are the same as those of Section "7.2.1 Alarm setting group". (p.44)
Refer to Section "7.2.1 Alarm setting group" for alarm settings.

8. Operation

8.1 Indication after Power-on

After power-on, the unit moves to warm-up status for 3 seconds as shown below
in (Fig. 8.1-1) and (Fig. 8.1-2).

SE2☐A

Lights after power-on.		Indicates CH1 input range. See (Table 8.1-1). (p.47) For the SE2VA, $I\square5H$ is indicated as the factory default value is 1 to 5 V DC.
		Indicates CH2 input range. See (Table 8.1-1). (p.47) For the SE2VA, $I\square5H$ is indicated as the factory default value is 1 to 5 V DC.

(Fig. 8.1-1)

SE1☐A

Lights after power-on.		Indicates the input range. See (Table 8.1-1). (p.47) For the SE1VA, $I\square5H$ is indicated as the factory default value is 1 to 5 V DC.

(Fig. 8.1-2)

(Table 8.1-1)

Input	Input Display	
	℃	℉
K	$t\square\square c$: -200 to 1370℃	$t\square\square F$: -328 to 2498℉
K	$t\square 4c$: 0 to 400℃	$t\square 4F$: 32 to 752℉
J	$J\square\square c$: -200 to 1000℃	$J\square\square F$: -328 to 1832℉
R	$r\square\square c$: -50 to 1760℃	$r\square\square F$: -58 to 3200℉
S	$5\square\square c$: -50 to 1760℃	$5\square\square F$: -58 to 3200℉
B	$b\square\square c$: 0 to 1820℃	$b\square\square F$: 32 to 3308℉
E	$E\square\square c$: -200 to 800℃	$E\square\square F$: -328 to 1472℉
T	$\Gamma\square\square c$: -200 to 400℃	$\Gamma\square\square F$: -328 to 752℉
N	$n\square\square c$: -200 to 1300℃	$n\square\square F$: -328 to 2372℉
PL-Ⅱ	$PL2c$: 0 to 1390℃	$PL2F$: 32 to 2534℉
W5Re/W26Re	$c\square\square c$: 0 to 2315℃	$c\square\square F$: 32 to 4199℉
W3Re/W25Re	$d\square\square c$: 0 to 2315℃	$d\square\square F$: 32 to 4199℉
Pt100	$P\Gamma\square c$: -200 to 850℃	$P\Gamma\square F$: -328 to 1562℉
JPt100	$JP\Gamma c$: -200 to 500℃	$JP\Gamma F$: -328 to 932℉
4 to 20 mA DC	$420A$: -1999 to 9999	
0 to 20 mA DC	$020A$: -1999 to 9999	
0 to 16 mA DC	$0\ 16A$: -1999 to 9999	
2 to 10 mA DC	$2\ 10A$: -1999 to 9999	
0 to 10 mA DC	$0\ 10A$: -1999 to 9999	
1 to 5 mA DC	$1\square 5A$: -1999 to 9999	
0 to 1 mA DC	$0\square\ 1A$: -1999 to 9999	
0 to 1 V DC	$0\square\ 1u$: -1999 to 9999	
0 to 5 V DC	$0\square 5u$: -1999 to 9999	
1 to 5 V DC	$1\square 5u$: -1999 to 9999	
0 to 10 V DC	$0\ 10u$: -1999 to 9999	

8.2 Unit Operation

The unit enters the RUN mode after 3-second warm-up indication as shown in (Fig. 8.2-1) and (Fig. 8.2-2).

SE2☐A

Lights after power-on.

The relevant indicator lights when the Input and Set value displays indicate CH1 or CH2.

Indicates the CH1 input value for the factory default value.

Indicates CH1 A1 value for the factory default value.

(Fig. 8.2-1)

SE1☐A

Lights after power-on.

Indicates the input value for the factory default value.

Indicates A1 value for the factory default value.
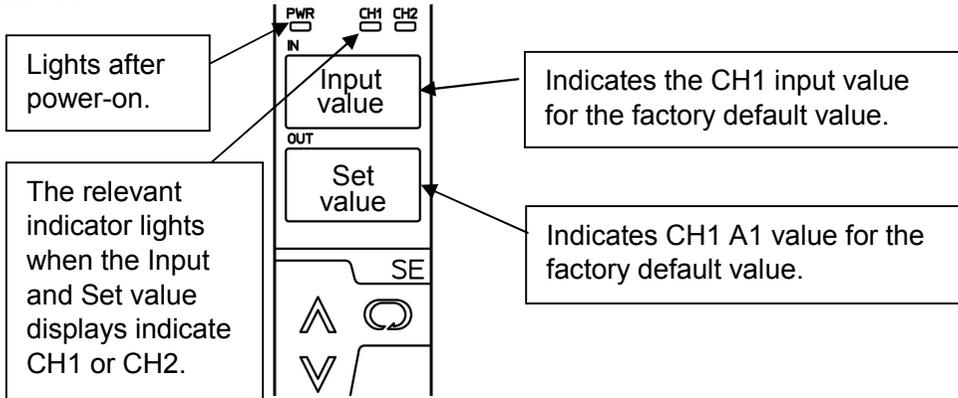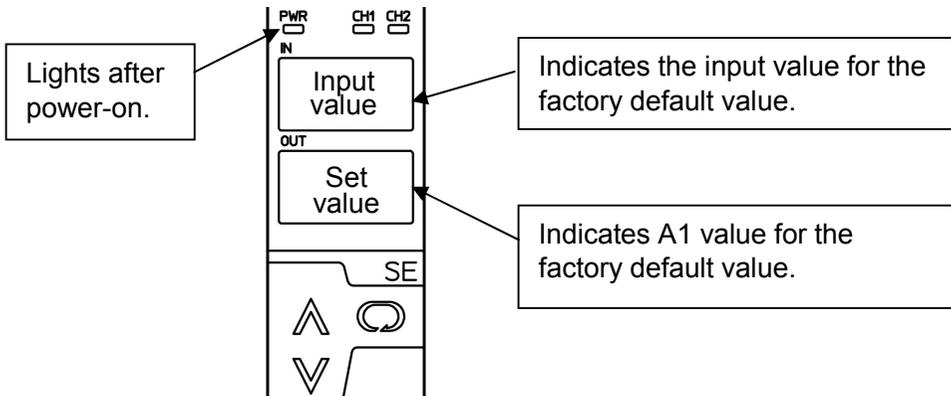
(Fig. 8.2-2)

• **Alarm Value Indication**

If A1 value is selected in [Display selection] (*), indication can be changed by pressing the ⋀ key evey one second as shown below.

SE2☐A: A1 value ➔ A2 value ➔ A3 value ➔ A1 value

SE1☐A: A1 value ➔ A2 value - - ➔ A6 value ➔ A1 value

When power is turned ON, the A1 value is indicated.

(*) SE2☐A: When $cH\square1$ (CH1 input value/A1 value) or $cH\square2$ (CH2 input value/A1 value) is selected.

    SE1☐A: When $cH\square1$ (Input value/A1 value) or $5Er\square$ (A1 value) is selected.

• Indication when Alarm Output is ON

    SE2☐A:

When alarm output is ON, the relevant channel indicator with current alarm output ON will flash, and the contents selected in [Display selection] and $AL\bar{m}\square$ are alternately indicated on the Set value display.

If the $\wedge$ key is pressed while holding down the $\vee$ key, the channel with current alarm output ON and Alarm output number will be indicated.
When plural alarm outputs are ON, each alarm output can be displayed every time the $\wedge$ key is pressed while the $\vee$ is held down.

(E.g.) When CH1 A1 and CH2 A3 are ON.

    Set Value Display

| Set value | ←→ | $AL\bar{m}\square$ |

    ↓ Press the $\wedge$ key while the $\vee$ key is held down.

| $1-A1$ |

    ↓ Press the $\wedge$ key again while the $\vee$ key is held down.

| $2-A3$ |

    ↓ Press the $\wedge$ key again while the $\vee$ key is held down.
        If none of the keys are pressed, the unit will revert to the alternate display of the set value and $AL\bar{m}\square$.
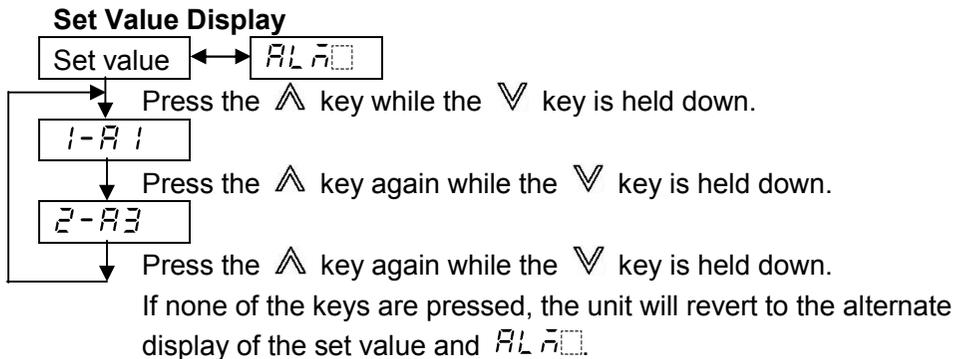
SE1☐A:

When alarm output is ON, the contents selected in [Display selection] and $AL\bar{m}\square$ are alternately indicated on the Set value display.

If the $\wedge$ key is pressed while holding down the $\vee$ key, the alarm output number with current alarm output ON will be indicated.
If plural alarm outputs are ON, each alarm output can be displayed by pressing the $\wedge$ key while the $\vee$ is held down.

(E.g.) When A1 and A3 are ON

    Set Value Display

| Set value | ←→ | $AL\bar{m}\square$ |

    ↓ Press the $\wedge$ key while the $\vee$ key is held down.

| $\square\square A1$ |

    ↓ Press the $\wedge$ key again while the $\vee$ key is held down.

| $\square\square A3$ |

    ↓ Press the $\wedge$ key again while the $\vee$ key key is held down.
        If none of the keys are pressed, the unit will revert to the alternate display of the set value and $AL\bar{m}\square$.
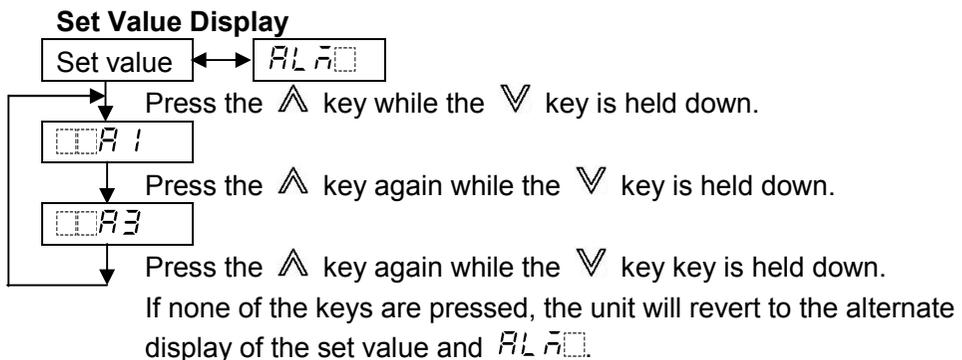
• **Indication when input value is -200.0 (-2000) or less**

When the range has a decimal point: For the indication of -200.0 or less, the input value and the minus (-) sign are indicated alternately.

When DC voltage or current input is selected, the indication of -2000 or less is the same as the above.

   (E.g.) Indication of -200.0
                IN ⎯⎯⎯⎯⎯   IN
                - ⎁⎁⎁ ⟷ *200.0*
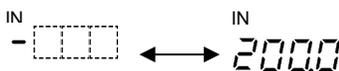
• **Indication when input value is 10000 or more**

When DC voltage or current input is selected: For the indication of 10000 or more, the lower 4 digits of input value are flashing.

   (E.g.) Indication of 10020
                IN
                0020 ← **Flashes.**

• **Underrange, Overrange and Sensor Burnout indication**

Underrange : If input value becomes -10% of the input span or less, "⌄ ⌄ ⌄ ⌄" flashes on the Input display.

Overrange   : If input value becomes 110% of the input span or more, "‾ ‾ ‾ ‾" flashes on the Input display.

• **Indication time setting**

If indication time is set, the displays will go off after the indication time has elapsed. (Only the power indicator remains lit.)
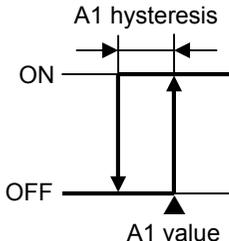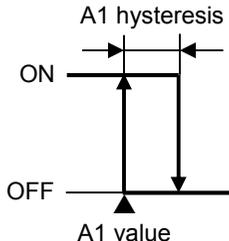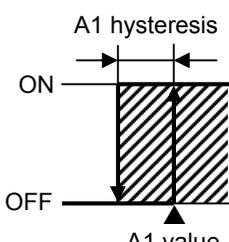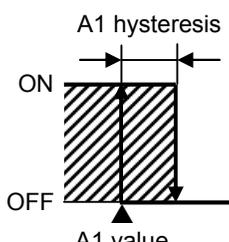
If power is turned ON again, or if any of the keys $\wedge$, $\vee$, $\circledcirc$ or the SUB-MODE Key is pressed while displays are unlit, the displays will light again.

9. Specifications

Input Specifications

SE2EA, SE1EA	Input resistance: 1 MΩ or more External resistance: 100 Ω or less, However, B: 40 Ω or less Burnout: Upscale Input:

Thermocouple	Input Range	
K	-200 to 1370℃	-328 to 2498℉
J	-200 to 1000℃	-328 to 1832℉
R	-50 to 1760℃	-58 to 3200℉
S	-50 to 1760℃	-58 to 3200℉
B	0 to 1820℃	32 to 3308℉
E	-200 to 800℃	-328 to 1472℉
T	-200 to 400℃	-328 to 752℉
N	-200 to 1300℃	-328 to 2372℉
PL-Ⅱ	0 to 1390℃	32 to 2534℉
W5Re/W26Re	0 to 2315℃	32 to 4199℉
W3Re/W25Re	0 to 2315℃	32 to 4199℉

The minimum input span is 50℃ (100℉).

SE2RA, SE1RA	Input detection current: Approx. 0.2 mA Allowable lead wire resistance: 10 Ω or less per wire Burnout: Upscale Input:

RTD	Input Range	
Pt100	-200 to 850℃	-328 to 1562℉
JPt100	-200 to 500℃	-328 to 932℉

The minimum input span is 50℃ (100℉).

SE2AA, SE1AA

Input	Shunt resistor
4 to 20 mA DC	50 Ω
0 to 20 mA DC	
0 to 16 mA DC	
2 to 10 mA DC	100 Ω
0 to 10 mA DC	
1 to 5 mA DC	200 Ω
0 to 1 mA DC	1 kΩ

Connect a shunt resistor (sold separately) between input terminals.

SE2VA, SE1VA

Input	Input Resistance	Allowable Signal Source Resistance
0 to 1 V DC	1 MΩ	2 kΩ or less
0 to 5 V DC		1 kΩ or less
1 to 5 V DC		
0 to 10 V DC		

Output Specifications

Alarm action	SE2☐A: Up to 3 points alarm output for each channel can be selected. SE1☐A: Up to 6 points alarm output can be selected. For each alarm output, one alarm type can be selected in [Alarm type] from the following.

High limit alarm	Low limit alarm
A1 hysteresis ON OFF A1 value	A1 hysteresis ON OFF A1 value
High limit alarm with standby	**Low limit alarm with standby**
A1 hysteresis ON OFF A1 value ////// Standby functions.	A1 hysteresis ON OFF A1 value ////// Standby functions.

ON/OFF action		
Alarm hysteresis		SE2EA, SE2RA, SE1EA & SE1RA: 0.1 to 100.0℃（℉） SE2AA, SE2VA, SE1AA & SE1VA: 0.1 to 100.0% of input span
Alarm delay time		0 to 9999 sec
Alarm Energized/De-energized		Energized/De-energized, Selectable
Alarm HOLD function		OFF/ON, Selectable

A1 output (SE2☐A), A1, A2 outputs (SE1☐A)	Relay contact, 1a	
	Control capacity	3 A 250 V AC (resistive load) 1 A 250 V AC (inductive load cosϕ =0.4)
	Electrical life	100,000 cycles

A2, A3 outputs (SE2☐A), A3 to A6 outputs (SE1☐A)	Open collector	
	Control capacity	0.1 A 24 V DC

Performance

Reference input accuracy (at 23℃)	SE2EA and SE1EA:
	    Within ±0.1% of each input span
	    R, S inputs -50 to 200℃ (-58 to 392℉): Within ±6℃(12℉)
	    B input, 0 to 300℃ (32 to 572℉): Accuracy is not guaranteed.
	    K, J, E, T, N inputs, Less than 0℃ (32℉): Within ±0.4% of
	                                              input span
	SE2RA and SE1RA: Within ±0.1% of each input span
	SE2AA, SE2VA, SE1AA and SE1VA: Within ±0.1%

Cold junction temperature compensation accuracy	Within ±1℃ at -5 to 55℃ (SE2EA, SE1EA)
Indication accuracy	Within Reference input accuracy±1 digit
Input sampling period	25 ms, 125 ms, 250 ms (Selectable via the keypad)
Temperature coefficient	±0.015%/℃ or less
Insulation resistance	Input - Output - Power 10 MΩ or more, at 500 V DC
Dielectric strength	Input - Output - Power 2.0 kV AC for 1 minute

General Structure

Case	Flame-resistant resin, Color: Light gray
Panel	Membrane sheet
Setting	Setting by the front keypad

Display	Input display: 7-segment, Red LED display 4-digit
	                    Character size: 10 x 4.6 mm (H x W)
	Set value display: 7-segment, Red LED display 4-digit
	                    Character size: 10 x 4.6 mm (H x W)
	Power indicator: Green LED
	CH1 indicator: Yellow LED (SE2□A)
	CH2 indicator: Yellow LED (SE2□A)

Installation Specifications

Power supply	100 to 240 V AC 50/60 Hz, 24 V AC/DC 50/60 Hz
Allowable voltage fluctuation	85 to 264 V AC, 20 to 28 V AC/DC
Power consumption	Approx. 9 VA
Ambient temperature	-5 to 55℃
Ambient humidity	35 to 85%RH (non-condensing)
Weight	Approx. 200g (socket included)
Mounting	DIN rail
External dimensions	W30 x H88 x D108mm (socket included)

Attached Functions

Auto-light function	Automatically measures and controls brightness of the displays to conserve power.
Power failure countermeasure	The setting data is backed up in the non-volatile IC memory.
Self-diagnosis	The CPU is monitored by a watchdog timer, and if an abnormal status is found on the CPU, the instrument is switched to warm-up status, turning all outputs OFF.
Cold junction temperature compensation	Available only for the SE2EA and SE1EA. This detects the temperature at the connecting terminal between the thermocouple and the instrument, and always maintains it at the same status as if the reference junction location temperature was at 0℃ (32℉).

10. Troubleshooting

10.1 Indication

Problem	Presumed Cause and Solution

The Input display is flashing "_{- - - -}" or "^{- - - -}".
The input value does not change.
	• The sensor may be burnt out.
	  Change each sensor.
	• Check whether the sensor is securely connected to the input terminals of the instrument.
	  Ensure that the sensor terminals are securely connected to the input terminals of the instrument.
	• Check the input signal source.
	• Check whether polarity of thermocouple or compensating lead wire is correct.
	  Check whether codes (A, B, B) of the RTD match the instrument terminals.
	  Ensure that they are wired properly.

The indication of the Input display is irregular or unstable.	• Check whether the sensor input and temperature unit (℃/℉) settings are correct.
	  Ensure that sensor type and temperature unit (℃/℉) are set properly.
	• Check whether the sensor correction value is suitable.
	  Set it to a suitable value.
	• AC leaks into the sensor circuit.
	  Use an ungrounded type sensor.
	• There may be equipment that interferes with or makes noise near the unit.
	  Keep equipment that interferes with or makes noise away from the unit.

10.2 Key Operation

Problem	Presumed Cause and Solution
Settings are not possible.	• "Lock 1" or "Lock 2" is selected in [Set value lock]. Select "Unlock".

10.3 Operation

Problem	Presumed Cause and Solution
Alarm output does not turn ON.	• Check whether alarm value and alarm delay time have been set to suitable values. • Check whether Alarm type and Alarm Energized/De-energized have been selected correctly.
Alarm output does not turn OFF.	• Check whether alarm value and alarm hysteresis have been set to suitable values. • Check whether Alarm type and Alarm Energized/De-energized have been selected correctly. • Check whether Alarm HOLD function is working. To turn the alarm output OFF while Alarm HOLD function is working, turn the power to the unit OFF.

11. Character Table

Alarm Setting Group

SE2□A: CH1 and CH2 have respective setting items.

Display	Setting Item	Factory Default Value	Data
A 1	A1 value	0℃ (SE2EA, SE2RA, SE1EA, SE1RA) 0 (SE2AA, SE2VA, SE1AA, SE1VA)	
A2	A2 value		
A3	A3 value		
A4	A4 value	0℃ (SE1EA, SE1RA) 0 (SE1AA, SE1VA)	
A5	A5 value		
A6	A6 value		

Function Group

SE2□A: CH1 and CH2 have respective setting items.

Display	Setting Item	Factory Default Value	Data
r c	Input range(thermocouple)	K -200 to 1370℃ (SE2EA, SE1EA)	
r r d	Input range (RTD)	Pt100 -200 to 850℃ (SE2RA, SE1RA)	
dc A	Input range (direct current)	4 to 20 mA DC -1999 to 9999 (SE2AA, SE1AA)	
dc U	Input range (DC voltage)	1 to 5 V DC -1999 to 9999 (SE2VA, SE1VA)	
dP	Decimal point place	No decimal point	
4 r L L	Scaling low limit	-200℃ (SE2EA, SE2RA, SE1EA, SE1RA) -1999 (SE2AA, SE2VA, SE1AA, SE1VA)	
4 r L H	Scaling high limit	1370℃ (SE2EA, SE1EA) 850℃ (SE2RA, SE1RA) 9999 (SE2AA, SE2VA, SE1AA, SE1VA)	
F I L r	Filter time constant	0.0 sec	
5 o	Sensor correction	0.0℃ (SE2EA, SE2RA, SE1EA, SE1RA) 0 (SE2AA, SE2VA, SE1AA, SE1VA)	
AL 1F	A1 type	No alarm action	
AL 2F	A2 type		
AL 3F	A3 type		
AL 4F	A4 type		
AL 5F	A5 type		
AL 6F	A6 type		
A 1L m	A1 Energized/De-energized	Energized	
A2L m	A2 Energized/De-energized		
A3L m	A3 Energized/De-energized		
A4L m	A4 Energized/De-energized		
A5L m	A5 Energized/De-energized		
A6L m	A6 Energized/De-energized		
A 1Hd	A1 HOLD function	OFF	
A2Hd	A2 HOLD function		
A3Hd	A3 HOLD function		
A4Hd	A4 HOLD function		

Display	Setting Item	Factory Default Value	Data
A5Hd	A5 HOLD function	OFF	
A6Hd	A6 HOLD function		
A1HY	A1 hysteresis	1.0℃ (SE2EA, SE2RA, SE1EA, SE1RA) 1.0% (SE2AA, SE2VA, SE1AA, SE1VA)	
A2HY	A2 hysteresis		
A3HY	A3 hysteresis		
A4HY	A4 hysteresis	1.0℃ (SE1EA, SE1RA) 1.0% (SE1AA, SE1VA)	
A5HY	A5 hysteresis		
A6HY	A6 hysteresis		
A1dY	A1 delay time	0 sec	
A2dY	A2 delay time		
A3dY	A3 delay time		
A4dY	A4 delay time		
A5dY	A5 delay time		
A6dY	A6 delay time		

Special Function Group

SE2□A: Setting items are common to CH1 and CH2.

Display	Setting Item	Factory Default Value	Data
Lock	Set value lock	Unlock	
rPrm	Input sampling period	250 ms	
LIGr	Auto-light function	Disabled	
diSP	Display selection	CH1 input value/A1 value (SE2□A) Input value/A1 value (SE1□A)	
rImE	Indication time	00.00 (Continuous indication)	

******* Inquiries *******

For any inquiries about this unit, please contact the vendor where you purchased the unit or our agency after checking the following.

(e.g.)

• Model ....………. SE2EA-1-0-0
• Serial number …..................... No. 124F05000

In addition to the above, please let us know the details of malfunction, or discrepancy, and the operating conditions.