

SA series

SPEC. SHEET

Thermocouple Transmitter (with indication function)

Model: **SAE**

Model

SAE -

Power supply
0: 100 to 240V AC
1: 24V AC/DC

How to order

Specify a model.
(e.g.) SAE-0

Default value

Input	K -200 to 1370°C
Output	4 to 20mA DC

Input specifications

Thermocouple

Input resistance : 1MΩ or more
External resistance: 100Ω or less, however, B: 40Ω or less
Burnout : Upscale, Downscale
Input:

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

Minimum span: 50°C (100°F)

Output specifications

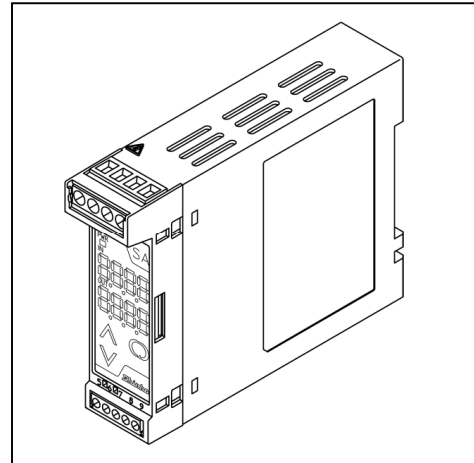
When the output range lower limit is zero, (even if zero adjustment results in a negative value), the output value will not be negative.

DC current

Output range	Allowable load resistance	Zero adjustment range	Span adjustment range
4 to 20mA DC	700Ω or less	-5 to 5%	95 to 105%
0 to 20mA DC	700Ω or less	0 to 5%	95 to 105%
0 to 12mA DC	1.2kΩ or less	0 to 5%	95 to 105%
0 to 10mA DC	1.2kΩ or less	0 to 5%	95 to 105%
1 to 5mA DC	2.4kΩ or less	-5 to 5%	95 to 105%

DC voltage

Output range	Allowable load resistance	Zero adjustment range	Span adjustment range
0 to 1V DC	100Ω or more	0 to 5%	95 to 105%
0 to 5V DC	500Ω or more	0 to 5%	95 to 105%
1 to 5V DC	500Ω or more	-5 to 5%	95 to 105%
0 to 10V DC	1kΩ or more	0 to 5%	95 to 105%



Performance

Accuracy:

• Input:

Within ±0.1% of each input span

R, S inputs, -50 to 200°C (-58 to 392°F):

Within ±6°C (12°F)

B input, 0 to 300°C (32 to 572°F):

Accuracy is not guaranteed.

K, J, E, T, N inputs, Less than 0°C (32°F):

Within ±0.4% of each input span

• Output: Within ±0.1%

Cold junction compensation accuracy:

Within ±1°C at -5 to 55°C

Display accuracy:

Within input accuracy ±1 digit

Response time:

Output: 0.5 sec. (typical) (0 → 90%)

Temperature coefficient:

Output: ±0.015%/°C

Insulation resistance: 10MΩ or more, at 500V DC

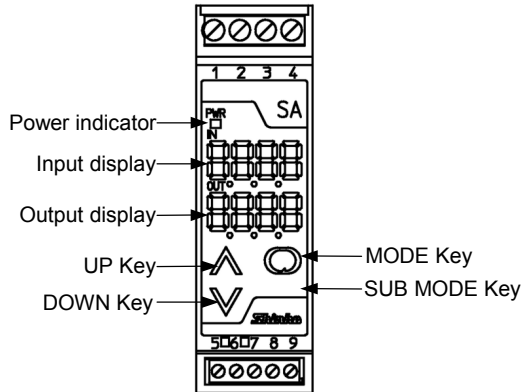
(Input - Output - Power)

Dielectric strength: 2.0kV AC for 1 minute:

(Input - Output - Power)

■ General structure

Case : Flame-resistant resin Color: Light gray
 Front panel: Membrane sheet
 Setting : By the front keypad
 Indication : Input display:
 7-segment, Red LED display 4-digit
 Character size, 7.4 x 4.0mm (H x W)
 Output display:
 7-segment, Green LED display 4-digit
 Character size, 7.4 x 4.0mm (H x W)
 Power indicator: Green LED



■ Installation specifications

Power supply : 100 to 240V AC 50/60Hz
 24V AC/DC 50/60Hz
 Allowable voltage range: 85 to 264V AC
 20 to 28V AC/DC
 Power consumption : Approx. 6VA
 Ambient temperature : -5 to 55°C
 Ambient humidity : 35 to 85%RH (non-condensing)
 Weight : Approx. 120g
 Mounting : DIN rail mounting
 External dimensions : 22.5 (W) x 75 (H) x 100 (D)mm

■ Attached functions

Power failure countermeasure:
 The data is backed up in non-volatile IC memory.
 Self diagnosis:
 The CPU is monitored by a watchdog timer, and when an abnormal status is found on the CPU, the unit is switched to warm-up status turning all outputs off.
 Cold junction compensation: Built-in

■ Environmental specification

RoHS directive compliance

■ Settings

Function keys
 (1) UP Key : Increases the numeric value.
 (2) DOWN Key : Decreases the numeric value.
 (3) MODE Key : Selects the setting mode.
 (4) SUB MODE Key: Press with the MODE Key to select the setting mode.

Setting items

Set by pressing the MODE Key for 3 seconds

- (1) Output zero adjustment
- (2) Output span adjustment

Set by the MODE Key and SUB MODE Key

- (1) Set value lock
- (2) Input type
- (3) Decimal point place
- (4) Output 0% value
- (5) Output 100% value
- (6) Filter time constant
- (7) Sensor correction
- (8) Output type/range

- (9) Output Normal/Reverse
- (10) Burnout selection
- (11) Display selection
- (12) Indication time

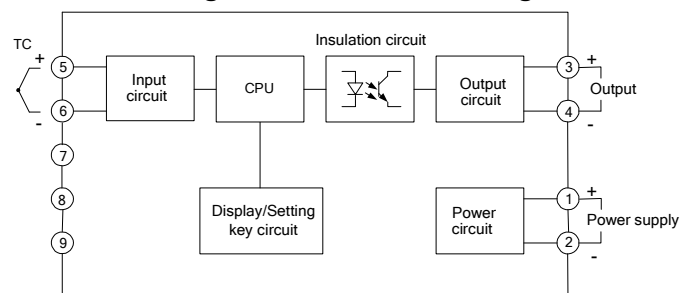
■ Displays and indicators

Input display: Indicates the input value.
 Indication of -200.0 or less (ranges with decimal point):
 The minus (-) sign and input value light in turn.
 Under range: " " flashes on the Input display.
 Over range : " " flashes on the Input display.
 Warm-up indication:
 For approx. 3 seconds after the power to the instrument is turned on, the input type is indicated on the Input display, and the Output type is indicated on the Output display.
 Output display : Indicates the output volume in percentage (%) form.
 Power indicator : The green LED lights when the power to the instrument is turned on.

■ Ferrules

Terminals from 1 to 4
 Insulation sleeve attached (Phoenix Contact GMBH & CO.)
 AI0.25-8YE 0.2 – 0.25mm²
 AI0.34-8TQ 0.25 – 0.34mm²
 AI0.5-8WH 0.34 – 0.5mm²
 AI0.75-8GY 0.5 – 0.75mm²
 AI1.0-8RD 0.75 – 1.0mm²
 AI1.5-8BK 1.0 – 1.5mm²
 Crimping pliers (Phoenix Contact GMBH & CO.)
 CRIMPFOX ZA3
 CRIMPFOX UD6
 Terminals from 5 to 9
 Insulation sleeve attached (Phoenix Contact GMBH & CO.)
 AI0.25-8YE 0.2 – 0.25mm²
 AI0.34-8TQ 0.25 – 0.34mm²
 AI0.5-8WH 0.34 – 0.5mm²
 Crimping pliers (Phoenix Contact GMBH & CO.)
 CRIMPFOX ZA3
 CRIMPFOX UD6

■ Circuit configuration, terminal arrangement



■ External dimensions (Scale: mm)

