

Potentiometer Transmitter

Model: **SAP**

Model

SAP - □

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

How to order

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

Default value

Output	4 to 20mA DC
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Input specifications

Potentiometer

Total resistance : 100Ω to 10kΩ
Reference voltage: 1.0V DC

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%
- Output : Within ±0.1%

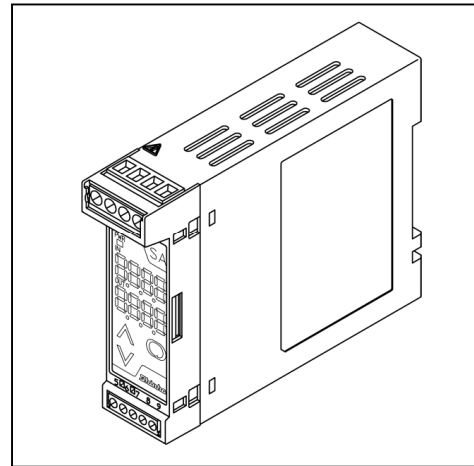
Display accuracy: Within input accuracy ±1 digit

Response time: 0.5 sec. (typical) (0 → 90%)

Temperature coefficient: ±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

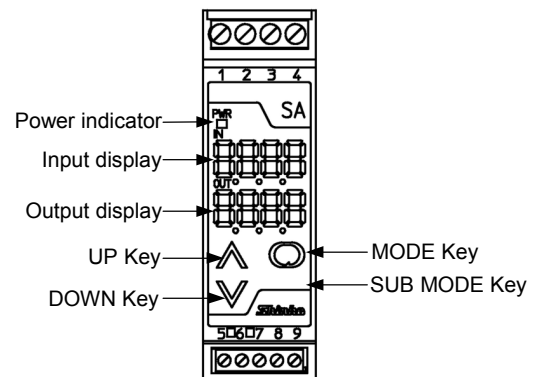
Indication : Input display:

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.

■ 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
- (3) Potentiometer input zero adjustment
- (4) Potentiometer input span adjustment

Set by the MODE Key and SUB MODE Key

- (1) Set value lock
- (2) Decimal point place
- (3) Output 0% value
- (4) Output 100% value
- (5) Filter time constant
- (6) Sensor correction
- (7) Output type/range
- (8) Output Normal/Reverse
- (9) Display selection
- (10) Indication time

■ Displays and indicators

Input display : Indicates the input value.

Indication of -2000 or less: The minus (-) sign and input value light alternately.
 Indication of 10000 or more:
 The lower 4 digits flash.

Under range: “- - - -” flashes on the Input display.

Over range : “- - - -” flashes on the Input display.

Warm-up indication:

For approx. 3 seconds after power-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.)

A10.25-8YE	0.2 – 0.25mm ²
A10.34-8TQ	0.25 – 0.34mm ²
A10.5-8WH	0.34 – 0.5mm ²
A10.75-8GY	0.5 – 0.75mm ²
A11.0-8RD	0.75 – 1.0mm ²
A11.5-8BK	1.0 – 1.5mm ²

Crimping pliers (Phoenix Contact GMBH & CO.)

CRIMPFOX ZA3,
CRIMPFOX UD6

Terminals from 5 to 9

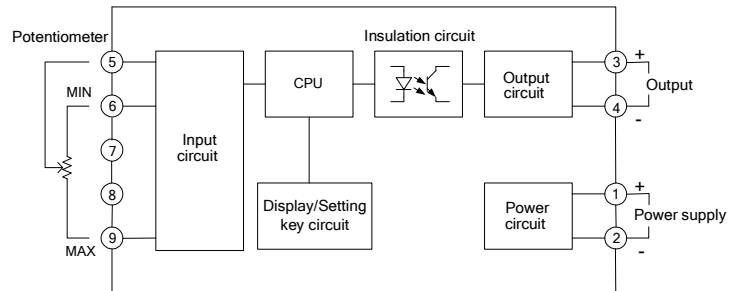
Insulation sleeve attached (Phoenix Contact GMBH & CO.)

A10.25-8YE	0.2 – 0.25mm ²
A10.34-8TQ	0.25 – 0.34mm ²
A10.5-8WH	0.34 – 0.5mm ²

Crimping pliers (Phoenix Contact GMBH & CO.)

CRIMPFOX ZA3,
CRIMPFOX UD6

■ Circuit configuration, terminal arrangement



■ External dimensions (Scale: mm)

