

SD series

SPEC. SHEET

Thermocouple Built-in Signal Conditioner

Model: **SDE**

■ Features

- Easy wiring plug-in socket
- Compact
- Input-Output-Power; 3-port insulation
- Reduced wiring using the bus plug for power supply

■ Model

Input

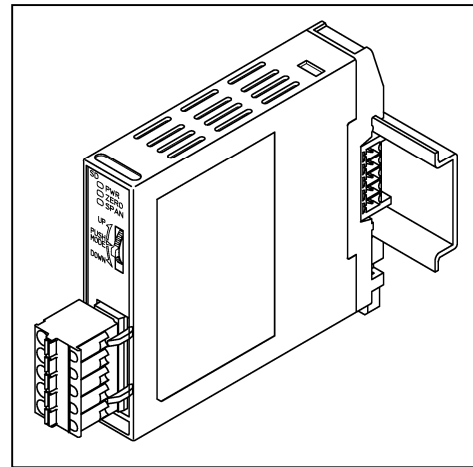
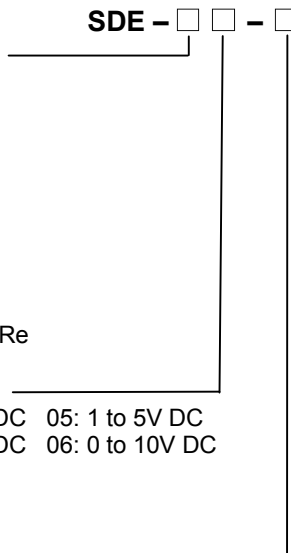
- 01: K
- 02: J
- 03: R
- 04: S
- 05: B
- 06: E
- 07: T
- 08: N
- 09: PL- II
- 10: W5Re/W26Re

Output

- 01: 4 to 20mA DC
- 02: 0 to 20mA DC
- 03: 0 to 1V DC
- 04: 0 to 5V DC
- 05: 1 to 5V DC
- 06: 0 to 10V DC

Power supply

- 1: 24V DC



■ How to order

Specify a model and an input range:
(e.g.) SDE-0101-1, 0 to 400°C

■ Accessories sold separately

Name	Model	Specifications
Terminal block	ATB-001-1	Power line to bus plug terminal connection. 1.5mm ² wire connected, screw attached.
End plate	AEP-001-1	Fixed at both ends when DIN Rail Mounted.

■ Input specifications

Input resistance : 1MΩ or more

External resistance : 100Ω or less, however B: 40Ω or less

Burnout : Upscale

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

Minimum span: 200°C

■ 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	550Ω or less	-2.5 to 2.5%	97.5 to 102.5%
0 to 20mA DC	550Ω or less	0 to 2.5%	97.5 to 102.5%

DC voltage

Output range	Allowable load resistance	Zero adjustment range	Span adjustment range
0 to 1V DC	100kΩ or more	0 to 2.5%	97.5 to 102.5%
0 to 5V DC	400kΩ or more	0 to 2.5%	97.5 to 102.5%
1 to 5V DC	400kΩ or more	-2.5 to 2.5%	97.5 to 102.5%
0 to 10V DC	600kΩ or more	0 to 2.5%	97.5 to 102.5%

■ Performance

Basic accuracy: Within ±0.2% of each input span or within ±2°C, Whichever is greater
R, S inputs, Less than 200°C: Within ±6°C
B input, Less than 300°C: Accuracy is not guaranteed.

K, J, E, T, N inputs, Less than 0°C: Within 4°C

Cold junction compensation accuracy:

Within ±1.0°C at -5 to 55°C

Response time : 1sec. (typical) (0 → 90%)

Temperature coefficient: ±0.015%/°C

Input resolution : 0.1°C

Output resolution : 10000

Insulation resistance : 10MΩ or more, at 500V DC (Input - Output - Power)

Dielectric strength : 2.0kV AC for 1 minute (Input - Output - Power)

■ Unit specifications

Case : Flame-resistant resin Color: Light gray
 Front panel : Polycarbonate
 Base : Polycarbonate
 Spring type plug: Polyamide Color: Green
 Bus plug : Polyamide Color: Green

Adjustment : Mode selection/setting by front dial
 for ZERO/SPAN adjustment.

Zero adjustment : $\pm 2.5\%$

Span adjustment: $\pm 2.5\%$

(1) ZERO indicator lights when the dial is pressed for approx. 3sec, and the unit enters Output ZERO adjustment mode.

(2) SPAN indicator lights when the dial is pressed, and the unit enters Output SPAN adjustment mode.

(3) If the dial is pressed, the unit will revert to Output ZERO adjustment mode (1).
 If the dial is pressed for approx. 3sec or no operation occurs for approx. 30sec, the unit leaves adjustment mode.

Indication:

PWR Indicator (Green):

Lights when the power to the instrument is turned on.
 Flashes every 0.5sec if an error has occurred in non-volatile IC memory.

Flashes every 0.25sec during input burnout, overscale or underscale.

ZERO indicator (Yellow):

Lights while in output zero adjustment.

SPAN indicator (Yellow):

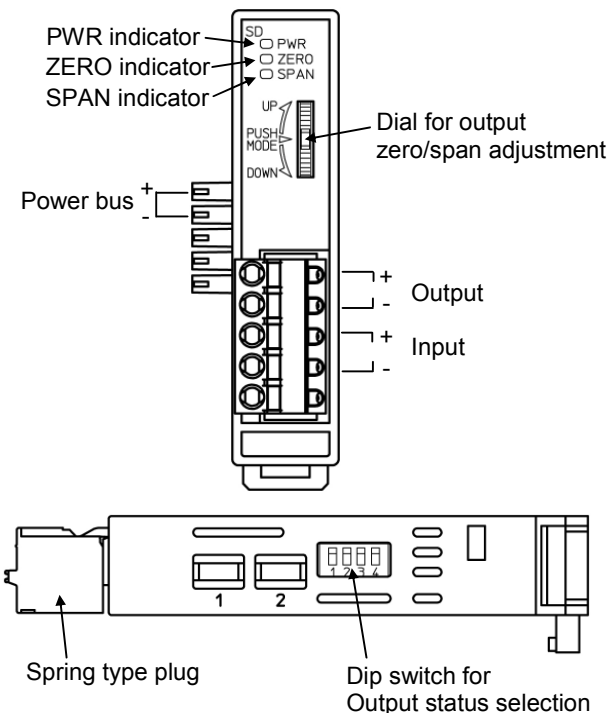
Lights while in output span adjustment.

Output status selection:

Selects output status Normal/Reverse with DIP switch.
 NO.1 OFF: Normal, ON: Reverse

Momentary power failure: 30msec

Self diagnosis: The CPU is monitored by watchdog timer, and when abnormal status is found on the CPU, the unit is restarted by reset.



■ Installation specifications

Power supply : 24V DC
 Allowable voltage range: 20 to 28V DC
 Power consumption : Approx. 1.5W
 Ambient temperature : -5 to 55°C (23 to 131°F)
 Ambient humidity : 35 to 85%RH (non-condensing)
 Weight : Approx. 82g
 Mounting : DIN rail mounting
 (Be sure to use End plates for fixing the unit when the unit is mounted on a DIN rail.)

Maximum linkable units : 90 units

External dimensions : 17.5 (W) x 75 (H) x 85 (D)mm

■ Environmental specification

RoHS directive conformity

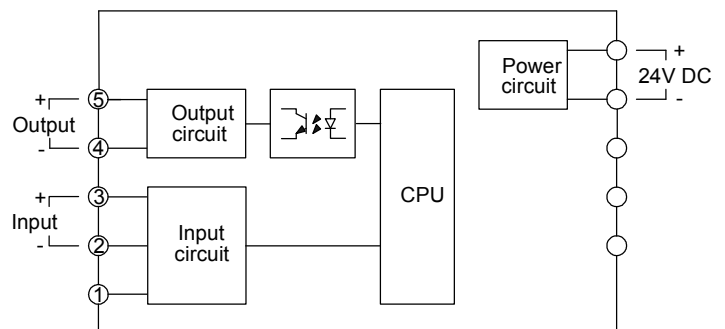
■ Ferrules

(Phoenix Contact GMBH & CO.)

Insulation sleeve attached: Model	Cross sections
A10.25-6BU	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
A11-8RD	0.75 – 1.0mm ²
A11.5-8BK	1.0 – 1.5mm ²
A12.5-8BU	1.5 – 2.5mm ²

Crimping pliers: CRIMPFOX ZA3
 CRIMPFOX UD6

■ Circuit configuration, Terminal arrangement



■ External dimensions (Scale: mm)

