SERIES SD10

- DIN Size 48 (H) × 96 (W) mm
- ±0.3% High Accuracy Indication
- Indicaton Hold Function
- Optional Functions Available
  —Alarm & Analog Outputs

Indicator

Indicator With Alarm

SPECIFICATIONS

Display:	Digital LED
Indicating Tolerance:	±0.3% + 1 digit of measuring range (at 25°C ±5°C temperature range)
Indication Range:	See Measuring Range Codes.
Indicating Resolution:	See Measuring Range Codes.
A / D Conversion:	Dual-slope integration
Sampling Frequency:	4 times / sec.
Display Hold Function:	Standard feature
Input:	
Thermocouple:	T, J, E, K, R, S, B
Standard setting temperature	
Compensation range:	5~45°C
Burnout circuit:	Standard feature
Input resistance:	200kΩ
External resistance:	100Ω max.
R.T.D.:	Pt100
Amperage:	2mA
Lead wire tolerable resistance:	5Ω max. / wire
Voltage:	0~10mV DC linear or 1~5V DC linear
Input impedance:	200kΩ
Current:	4~20mA DC linear
Receiving impedance:	250Ω
Operating Ambient Temperature Range:	-10~+50°C
Operating Ambient Humidity:	90% RH max.
Power Supply:	See Measuring Range Codes.
Power Consumption:	Approx. 4VA

Insulation Resistance:
500V DC, 20MΩ min. between input terminal and power supply terminal
500V DC, 20MΩ min. between power supply terminal and earth terminal

Dielectric Strength:
1 min. at 500V AC between input terminal and power supply terminal
1 min. at 1000V AC between power supply terminal and earth terminal

Installation:	Flush in panel
External Dimensions:	48 (H) × 96 (W) × 183 (186) (D) mm
Panel Cutout:	45 (H) × 92 (W) mm
Weight:	Approx. 550g
No. of Alarms:	2
Alarm Setting:	Analog type
Alarm Set Point Readout:	Digital type
Alarm Setting Range:	Same as measuring range
Alarm Setting Accuracy:	±1.0% of measuring range
Alarm Resolution:	±0.5% of measuring range
Alarm Output:	Contact
Alarm Contact Rating:	
Voltage:	240V AC
Current:	3A / Resistive load 1A / Inductive load
Alarm Action Display:	LED
LL (Lower Limit)	Green lamp
HL (Higher Limit)	Red lamp
Analog Output:	
Accuracy:	±0.3% of measuring range
Voltage:	0~10mV DC linear output Output resistance 10Ω Non-isolation output
Current:	4~20mA DC linear output Load resistance allowance 300Ω max. Non-isolation output

(By connecting a 250Ω resistor (tolerance ±0.1%) to the output terminals or input terminals, a signal of 1~5V DC will result.)

ORDERING INFORMATION

ITEMS	CODE							SPECIFICATIONS
SERIES	SD10-							Digital Indicator, 48 (H) × 96 (W) mm DIN
INPUT *		1						Thermocouple, Input Resistance: 200kΩ
		2						R.T.D. (Pt100) —— R.T.D. Amperage: 2mA
		3						Voltage: 0~10mV —— Input impedance: 200kΩ
		4						Current: 4~20mA DC —— Receiving Impedance: 250Ω
		9						Others (Please consult before ordering.)
ALARM			00					Non-Alarm
			03					Separate Setting / Output Type Alarm Capacity: 240V AC 1A / Inductive Load
			99					Others (Please consult before ordering.)
ANALOG OUTPUT				0				Not Provided
				3				0~10mV DC Linear, Non-Isolation Output, Output Resistance: 10Ω
				4				4~20mV DC Linear, Non-Isolation Output, Load Resistance: 300Ω max.
				9				Others (Please consult before ordering.)
POWER SUPPLY					11			100~110V / 200~220V AC ±10%, 50 / 60Hz
					12			110~120V / 220~240V AC ±10%, 50 / 60Hz
					99			Others (Please consult before ordering.)
INPUT STANDARD						-N		None
						-J		JIS
						-D		DIN
						-F		JIS (New Pt100-JIS)
						-A		ANSI
						-X		Others (Please consult before ordering.)
TYPE OF INPUT							T	Thermocouple (T)
							J	Thermocouple (J)
							E	Thermocouple (E)
							K	Thermocouple (K)
							B	Thermocouple (B)
							R	Thermocouple (R)
							S	Thermocouple (S)
							P	R. T. D. (Pt100)
							L	Linear —— Voltage & Current Inputs
							X	Others (Please consult before ordering.)
MEASURING RANGE							□□□	See Measuring Range Codes.
LEGEND								N No Legend
								C °C Temperature
								F °F Temperature
								H % RH Relative Humidity
								P % Percent
								V V Voltage
								E mV Voltage
								A A Current
								I mA Current
								X Others (Please consult before ordering.)
REMARKS								0 Without
								9 With (Please consult before ordering.)

Coding Example: SD10-203012-JP786C0, Digital Indicator, Type Pt100-JIS Input, With Alarm, 0.0~199.9°C, 110~120V / 220~240V AC

* For an input of 1~5V DC, select input code 9 (Others).

MEASURING RANGE CODES

INPUT		RANGE	RESOLUTION	RANDE CODE	LEGEND
R.T.D. (Pt100)		-100.0~+100.0°C	0.1	581	C
		0.0~ 100.0°C	0.1	784	C
		0.0~ 199.9°C	0.1	786	C
		0 ~ 400 °C	1	740	C
Thermocouple	T	-199 ~+199 °C	1	573	C
		0 ~ 400 °C	1	740	C
	J	0 ~ 400 °C	1	740	C
	E	0 ~ 400 °C	1	740	C
	K	0 ~ 400 °C	1	740	C
		0 ~1200 °C	1	812	C
	B**	0 ~1800 °C	1	818	C
	R*	0 ~1700 °C	1	817	C
	S	0 ~1700 °C	1	817	C

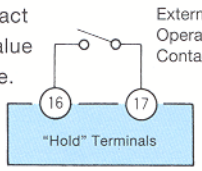
* Effective Measuring Range: 400°C~1700°C

** Accuracy: 0.5%

INPUT		RANGE	RESOLUTION	RANDE CODE	LEGEND
R.T.D. (Pt100)		-199 ~ +199 °F	1	573	F
		0.0~ 199.9°F	0.1	786	F
		0.0~ 400 °F	1	740	F
		0 ~ 800 °F	1	808	F
		0 ~1000 °F	1	810	F
Thermocouple	J	0 ~ 800 °F	1	808	F
		0 ~1000 °F	1	810	F
	E	0 ~ 800 °F	1	808	F
	K	0 ~ 800 °F	1	808	F
		0 ~1999 °F	1	887	F
VOLTAGE / CURRENT		-50 ~ +50	1	538	—
		0.0~ 10.0	0.1	774	—
		0.0~ 50.0	0.1	783	—
		0.0~ 100.0	0.1	784	—

INDICATOR HOLD

The series SD10 indicator can "hold" the display by an external contact signal. When the readout is a fluctuating value, the instantaneous value will be retained and a readout will be displayed and held at that value. If hold action is removed, the display will return to normal.



Connecting hold terminals ⑯ and ⑰ to each other will activate the holding function. Disconnecting hold terminals ⑯ and ⑰ will cause the display to return to the normal.

ANALOG OUTPUT

The series SD10 indicator can be provided with analog output. Since a linearized output signal of 0~10mV DC or 4~20mA DC is possible, the analog signal can be fed into a logger, recorder, controller or computer.

ALARM APPLICATIONS

Since the series SD10 indicator is equipped with an alarm output, it has an alarm function option and also an optional two setting control function.

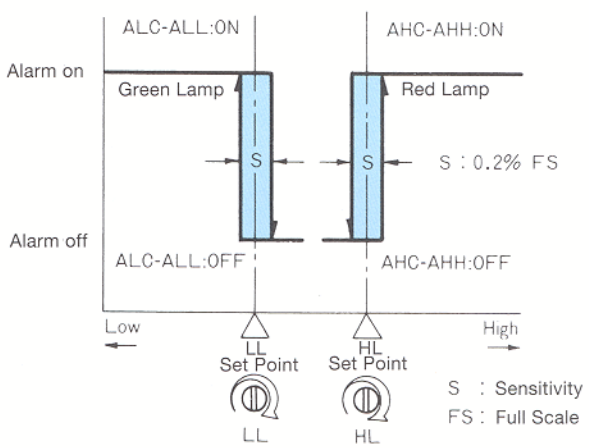
1····· Input Circuit Burnout, Short Circuit and Abnormality Detector
- 1-1 When input exceeds alarm setting value (higher or lower), there is abnormal alarm output.

2····· Unit Safety, Quality Control
- 2-1 High limit / low limit setting
- 2-2 2-step lower limit setting (alarm 1 + alarm 2)
- 2-3 2-step higher limit setting(alarm 1 + alarm 2)

3····· Control Function
- 3-1 2-position + 2-position (2-step cooling or 2-step heating)
- 3-2 3-position (cooling + heating)
- 3-3 2-position + alarm (cooling + alarm or heating + alarm)

4····· Sequence Signal Function
- 4-1 Agitator, fan drive / suspension
- 4-2 Timer signal
- 4-3 Other auxiliary functions

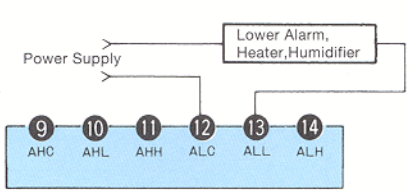
ALARM ACTION CONFIGURATION



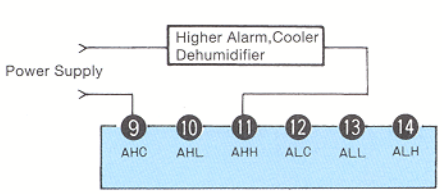
TERMINAL FUNCTIONS

Since the terminals of the series SD10 indicator can be used in various combinations, please refer to the Contact Action Configurations chart on the right.

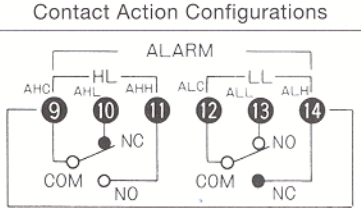
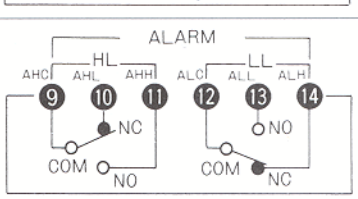
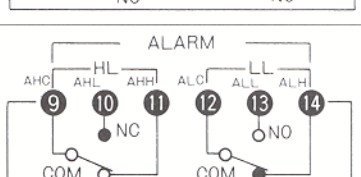
☐ When using lower alarm, heater or humidifier



☐ When using higher alarm, cooler or dehumidifier

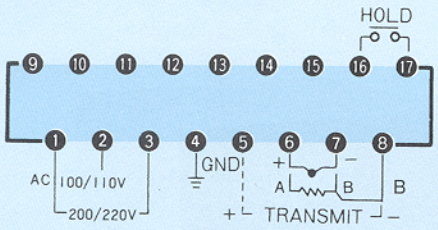


CONTACT ACTION CONFIGURATIONS

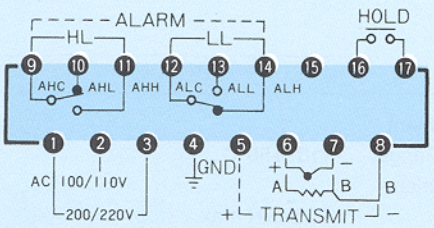
Input and Point	Contact Action Configurations
Input<LL<HL LL: Green lamp will light.	
LL<Input<HL Neither lamp will light.	
LL<HL<Input HL: Red lamp will light.	

TERMINAL ARRANGEMENT

Indicator

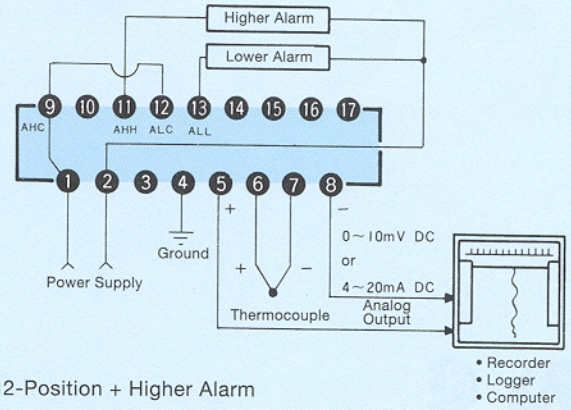


Indicator With Alarm

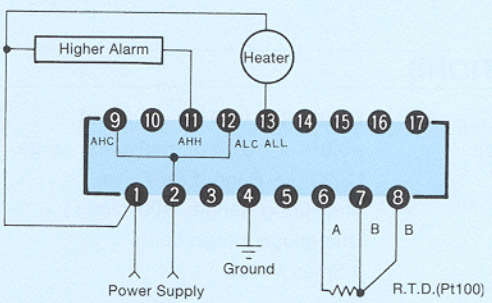


WIRING

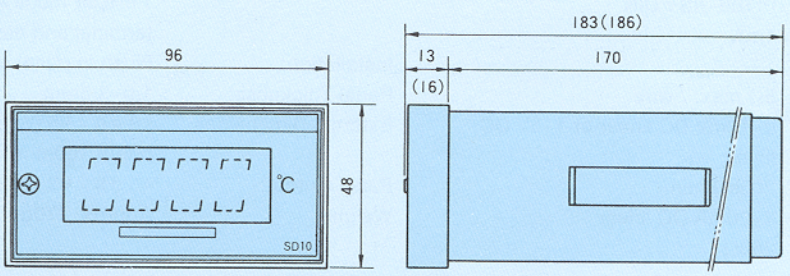
☐Higher / Lower Alarm



☐2-Position + Higher Alarm



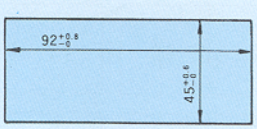
EXTERNAL DIMENSIONS



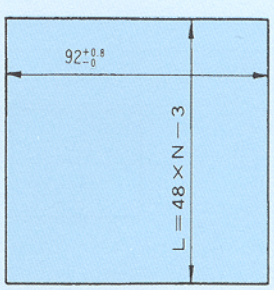
( ) Dimensions in brackets are for alarm type. Unit : mm

PANEL CUTOUT

☐Cutout for One Unit



☐Cutout for Two or More Units Installed Together
N = No. of Units



No. of Units	L
2	93
3	141
4	189
5	237
6	285
7	333
8	381

Unit: mm