

SI Series Sensor Indicator User Manual



Features:

- TC / RTD / Analog signal universal input, selected by software menu.
- With display and alarm function.
- With optional RS485 communication function.
- With light bar display function.
- Good anti-jamming.
- Switching power supply 100-240VAC.

For your safe, please read the below content carefully before you use the temperature controller!

■ Safe Caution

※ Please read the manual carefully before you use the temperature controller.
※ Please comply with the below important points. ⚠ Warning An accident may happen if the operation does not comply with the instruction. ⚠ Notice An operation that does not comply with the instruction may lead to product damage.
※ The instruction of the symbol in the manual is as below. ⚠ An accident danger may happen in a special condition.

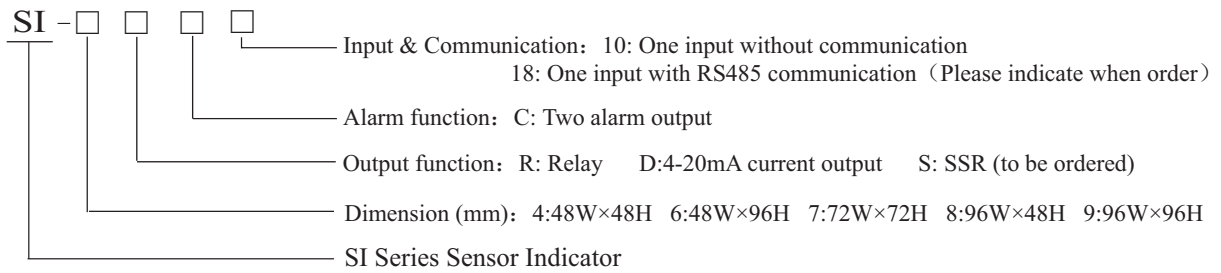
⚠ Warning

1. A safety protection equipment must be installed or please contact with us for the relative information if the product is used under the circumstance such as nuclear control, medical treatment equipment, automobile, train, airplane, aviation and equipment etc. Otherwise, it may cause serious loss, fire or person injury.
2. A panel must be installed, otherwise it may cause creepage (leakage).
3. Do not touch wire connectors when the power is on, otherwise you may get an electric shock.
4. Do not dismantle or modify the product. If you have to do so, please contact with us first. Otherwise it may cause electric shock and fire.
5. Please check the connection number while you connect the power supply wire or input signal, otherwise it may cause fire.

⚠ Caution

1. This product cannot be used outdoors. Otherwise the working life of the product will become shorter, or an electric shock accident may happen.
2. When you connect wire to the power input connectors or signal input connectors, the moment of the No.20 AWG (0.50 mm²) screw tweaked to the connector is 0.74n.m - 0.9n.m. Otherwise the connectors may be damaged or get fire.
3. Please comply with the rated specification. Otherwise it may cause electric shock or fire, and damage the product.
4. Do not use water or oil base cleaner to clean the product. Otherwise it may cause electric shock or fire and damage the product.
5. This product should be avoid working under the circumstance that is flammable, explosive, moist, under sunshine, heat radiation and vibration. Otherwise it may cause explosion.
6. In this unit it must not have dust or deposit, otherwise it may cause fire or mechanical malfunction.
7. Do not use gasoline, chemical solvent to clean the cover of the product because such solvent can damage it. Please use some soft cloth with water or alcohol to clean the plastic cover.

1. Model



2. Model Indication

Model	Alarm no.	OUT1	OUT2	Dimension (mm)
SI4-RC10	2	No	Relay output	48HX48WX110L
SI4-DC10	2	4-20mA transmit output	Relay output	48HX48WX110L
SI6-RC10	2	No	Relay output	96HX48WX110L
SI6-DC10	2	4-20mA transmit output	Relay output	96HX48WX110L
SI7-RC10	2	No	Relay output	72HX72WX110L
SI7-DC10	2	4-20mA transmit output	Relay output	72HX72WX110L
SI8-RC10	2	No	Relay output	48HX96WX110L
SI8-DC10	2	4-20mA transmit output	Relay output	48HX96WX110L
SI9-RC10	2	No	Relay output	96HX96WX110L
SI9-DC10	2	4-20mA transmit output	Relay output	96HX96WX110L

Note: OUT1: 4-20mA current output, load resistance 600Ωmax.

OUT2: Relay output capacity: 3A/230Vac.

Alarm: Relay output capacity: 1A/230Vac

3. Main Technical Parameters

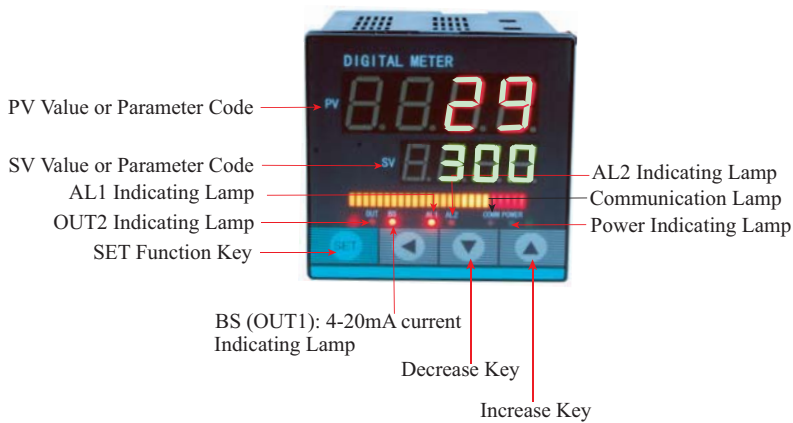
1. Whole controller parameters

Power supply	100-240VAC
Total current	<30mA (220VAC)
Ambient temperature	0-50℃
Ambient humidity	45-85%RH

2. Input signal table

No.	Input signal	Measuring range	Resolution	Accuracy	Input impedance
0	K type thermocouple	-50~1300℃	1℃	0.3%FS±3digits	>100KΩ
1	J type thermocouple	-50~1200℃	1℃	0.3%FS±3digits	>100KΩ
2	E type thermocouple	-50~1000℃	1℃	0.3%FS±3digits	>100KΩ
3	T type thermocouple	-50~400℃	1℃	0.3%FS±3digits	>100KΩ
4	B type thermocouple	600~1800℃	1℃	0.3%FS±3digits	>100KΩ
5	R type thermocouple	-10~1700℃	1℃	0.3%FS±3digits	>100KΩ
6	S type thermocouple	-10~1600℃	1℃	0.3%FS±3digits	>100KΩ
7	N type thermocouple	-50~1200℃	1℃	0.3%FS±3digits	>100KΩ
8	Reserved				
9	PT100	-199.9~850.0℃	0.1℃	0.3%FS±3digits	(0.2mA)
10	JPT100	-199.9~500.0℃	0.1℃	0.3%FS±3digits	(0.2mA)
11	CU50	-50.0~150.0℃	0.1℃	0.3%FS±3digits	(0.2mA)
12	CU100	-50.0~150.0℃	0.1℃	0.3%FS±3digits	(0.2mA)
13	Linear voltage	0~50mV	13 digits AD	0.2%FS±3digits	>100KΩ
14	Linear current	4~20mA	13 digits AD	0.2%FS±3digits	<150Ω
15	Linear voltage	0~10V	13 digits AD	0.2%FS±3digits	>100KΩ
16	Linear resistance	0~400Ω	13 digits AD	0.2%FS±3digits	(0.2mA)

4. Panel indication



PV Display Window:

Measuring Value Display Window

To show the input signal value

SV Display Window:

Setting Value Display Window

To show the setting value

AL1: Alarm output indication, light on: alarm is on, light off: alarm is off.

AL2: Alarm output indication, light on: alarm is on, light off: alarm is off.

COMM: Communication indicating lamp, when it is flashing, communication is working.

BS (OUT1): 4-20mA transmit current indicating lamp

OUT2: Control output indicating lamp, light on: output, light off: no output.

The on / off of OUT2 is relevant to SV value.

SET: Setting mode shift key / parameter confirm key

◀: Parameters change flashing key

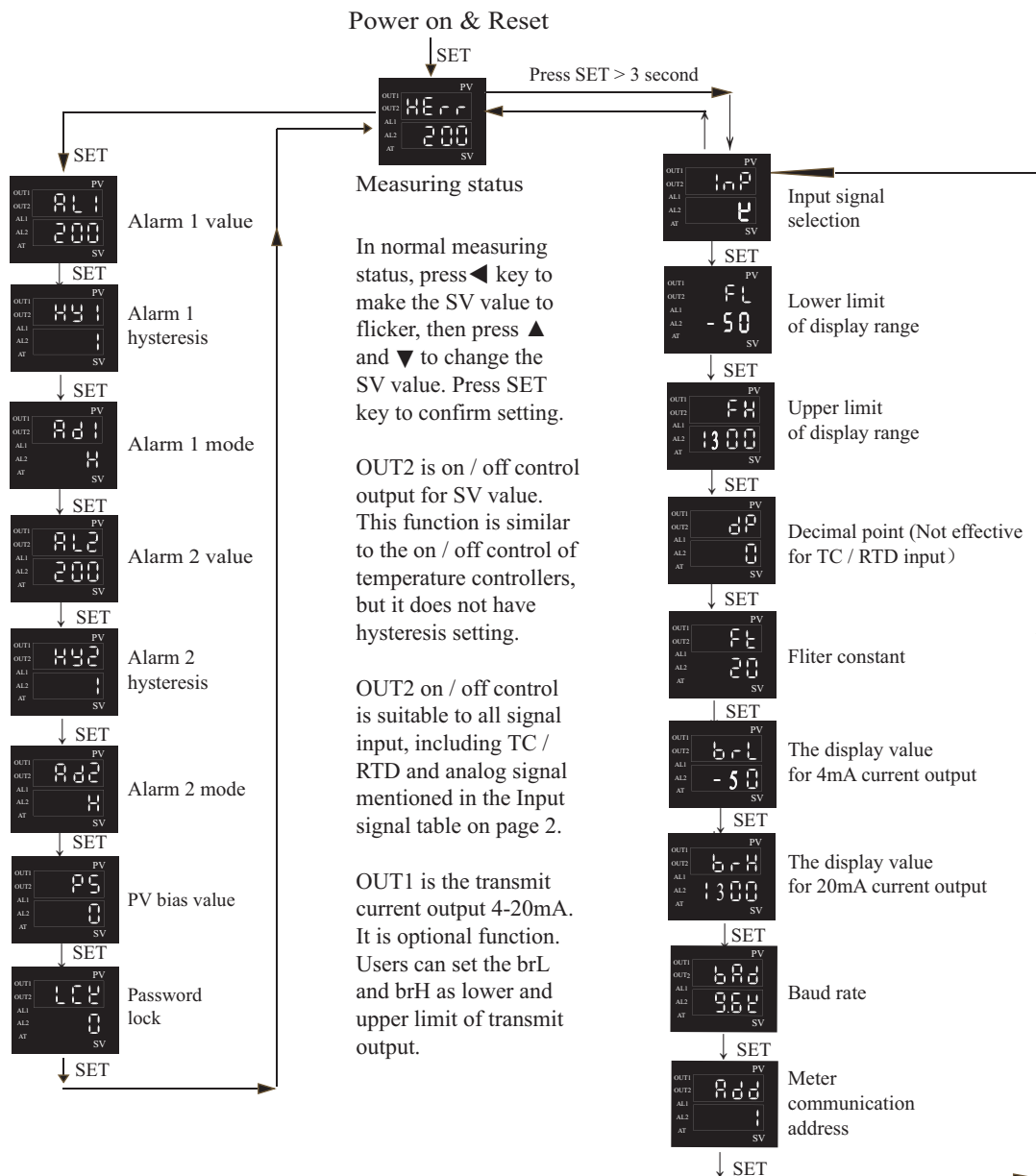
▼: Parameters change decrease key

▲: Parameters change increase key

5. Panel Key Operation

- (1) SET key: In normal display status, press SET key to show the setting menu, press SET key for a few seconds to show advanced setting menu (please refer to No.6 Operation Sequence).
- (2) ◀ key: press ◀ key to make the parameters to flicker, the parameters can be changed.
- (3) ▲, ▼ key: to change parameters in setting status.
- (4) In advanced setting menu, press SET key for a few seconds to quit the menu and back to normal display status.

6. Operation Sequence



7. Menu

Parameter name	Indication	Setting range	Ex-factory setting
AL1	Alarm 1 value	FL-FH	200
HY1	Alarm 1 hysteresis	0-9999	1
Ad1	Alarm 1 mode: L: Inverse (Low limit);, H: Direct (High limit)	L/H	H
AL2	Alarm 2 value	FL-FH	600
HY2	Alarm 2 hysteresis	0-9999	5
Ad2	Alarm 1 mode: L: Inverse (Low limit);, H: Direct (High limit)	L/H	L
PS	PV measured value bias	-1000-1000	0
LCK	Password lock. If the units digit (4th digit from left to right) is 1, SV is prohibited to changed; if the tens digit (3rd digit) is 1, menu parameters are prohibited to changed (except for LCK menu).	0-9999	0
INP	Input signal type	Please refer to the input signal table on page 2	K
FL	Lower display limit of input signal		-50
FH	Upper display limit of input signal		1300
dP	Display decimal point setting. Only effective for linear voltage, current and resistance input.	0-3	0
Ft	Filter constant. The bigger the value is, the slower the display value changes. The smaller the value is, the faster the display value changes.	4-255	20
brL	The display value for lower limit of transmit current output	Please refer to the input signal table on page 2	-50
brH	The display value for upper limit of transmit current output		1300
bAd	RS485 communication baud rate	4.8K, 9.6K, 19.2K	9.6K
AdD	RS485 communication meter address	0-255	1

Alarm function table

Alarm code	Alarm mode	Alarm output (AL1, AL2 is independent with each other)
H	Direct (High limit)	
L	Inverse (Low limit)	

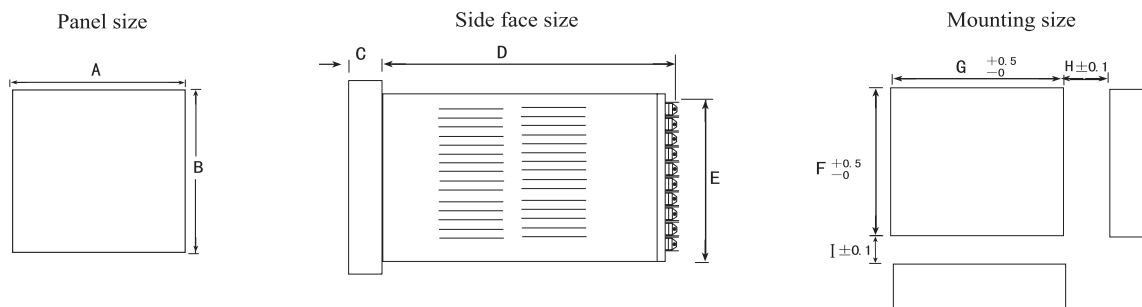
Light bar indication

SI4 does not have light bar, SI6 has 10 digit light bar, SI7 & SI8 has 15 digit light bar, SI9 has 25 digit light bar. The digit number of light bar depends on panel size. Light bar displays how much percentage of the Full Scale the input signal value is. The bright part of the light bar shows the percentage of input signal value.

Full Scale depends on the setting of FL1 and FH1, for example, if FL1 is -50, FH1 is 1300 (just like the measuring range of K type thermocouple), the Full Scale is 1350. When the display value is 675, 50% of light bar will light.

FL1 and FH1 can be freely set, for same signal input, the percentage will change if Full Scale is changed.

8. Appearance & Mounting Dimension

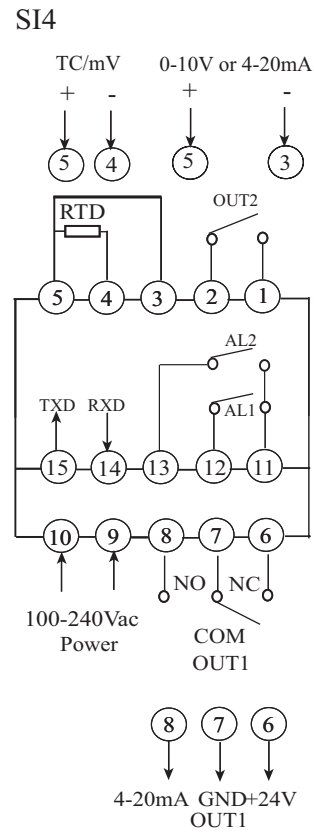
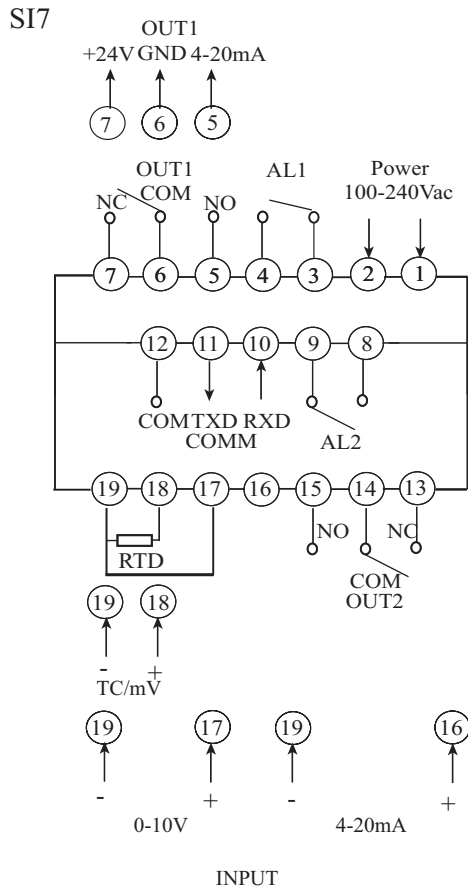


Model	A	B	C	D	E	F	G	H	I
SI4	48	48	6	100	45	46	46	30	30
SI6	48	96	10	100	89.5	91	46	30	30
SI7	72	72	10	100	67	68	68	30	30
SI8	96	48	10	100	45	46	91	30	30
SI9	96	96	10	100	89.5	91	91	30	30

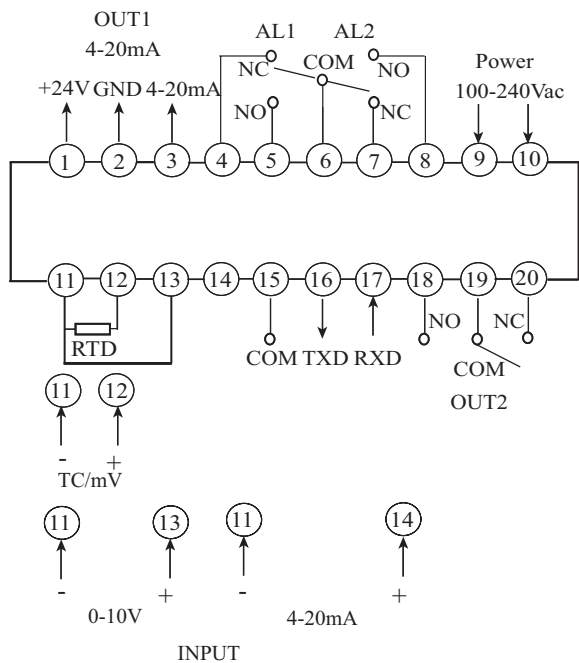
Unit: mm

9. Connection Drawing

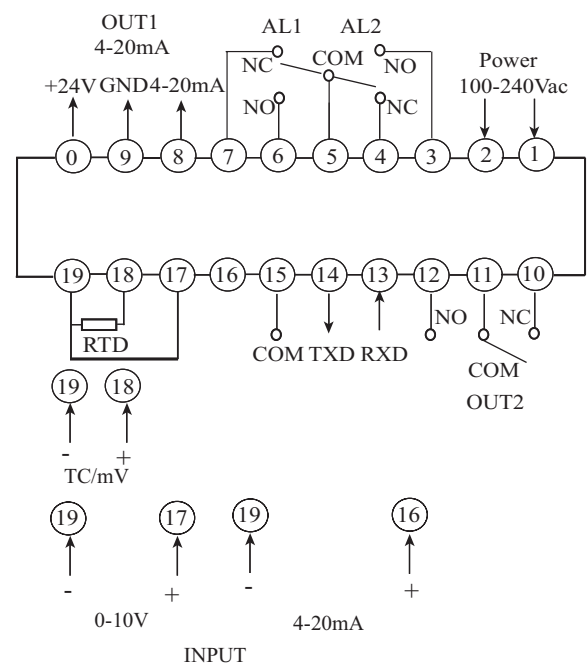
SI4 / SI7 is under improvement now, the connection drawing for these two model may be changed in the future.



SI6 / SI8



SI9



10. Simple Problem Shooting

Display Message	Shooting Method
Display HHHH	Input disconnect or over upper limit, please check input signal, FH value and ambient working temperature.
Display LLLL	Input disconnect or under lower limit, please check input signal, FL value and ambient working temperature.