SF Series Intelligent Sensor Indicator Manual

Features :

- ⊙ Dual lines LED display , upper line shows the measure value , lower line display measure units.
- ⊙ Two alarm output
- ⊙ Universal linear signal and thermocouple signal input
- ⊙ Easy to operate

For your safety, please read the below content carefully before you use the meter !

▣ Safe Caution

Please read the manual carefully before you use the meter
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 safty 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, 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 Illustration

SF □-□□□□ — T: temperature sensor signal input , Blank :Voltage/ampere input

B：DC 24V auxiliary power supply A：DC 12V auxiliary power supply（should order)
Blank：Without auxiliary power supply

0：Without alarm 2：Two alarm

R：Relay alarm output A：Without alarm

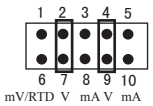
4：48W×48H 6：48W×96H 7：72W×72H 8：96W×48H 9：96W×96H
80：160W×80H(should order) 16：80W×160H(should order)

2.Ordering Model

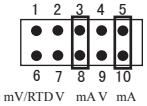
Model	Input signal	Alarm	Auxiliary power supply
SF□－A0	DC 0～10V , 4～20mA, DC 0～5V , 0～20mA	No Alarm	Without
SF□－R2B	DC 0～10V , 4～20mA, DC 0～5V , 0～20mA	Two Alarm Output	DC 24V/30mA①
SF□－A0－T	TC/RTD，0～50mV，0～400Ω	No Alarm	Without
SF□－R2B－T	TC/RTD，0～50mV，0～400Ω	Two Alarm Output	DC 24V/30mA①

Note①：other auxiliary voltage need to be ordered.

Note②：Ex-factory default input signal is 0-10V，if changed to current input from voltage input,skipping the pin on of software as the drawing below.

Voltage Input 

Short connect 2-7、4-9.

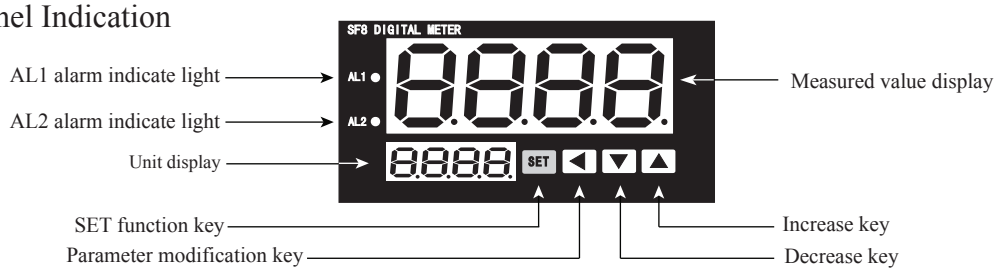
Ampere Input 

Short connect 3-8、5-10（use the Pin cap ）.

3.Main Technical Parameter

Measuring Accuracy	±0.5%F.S
Alarm Output	Relay 1 output capacity: AC 1A/250V Relay 2 output capacity: AC 3A/250V
Power Supply	SF4: AC/DC 100～240V SF7/SF8:AC 110/220V±10% SF6/SF80:AC 220V±10%
Total Current	＜30mA(220VAC)
Ambient temperature	0～50℃
Ambient humidity	45～85%RH
Auxiliary Voltage	24V 30mA (12V auxiliary voltage can be specially ordered)

4.Panel Indication



（1）SET key: After power on, long-time press SET key to enter into setting MENU; under the state of modifying the unit or value, press SET to confirm after modifying.

（2）“◀”key：At normal state or setting state menu，short-time press ◀ to activate parameter value，then the SV parameter value will flash and enter into modifying state, at this state, Press◀to realize the modifying of thousand flash← hundred flash← ten flash ← unit flash cyclic shift.

（3）“▲”key：At the modifying state，short time press this key to increase the flashing digit.

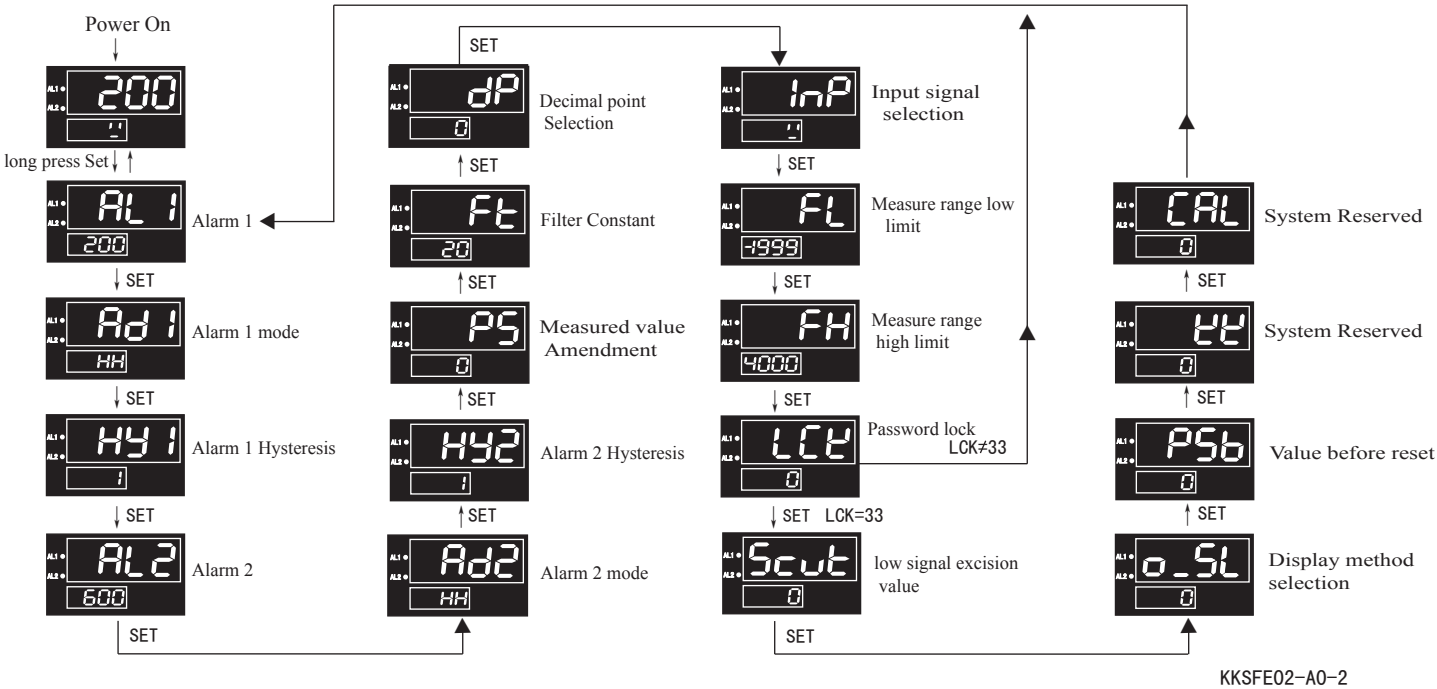
（4）“▼”key：At the modifying state，short time press this key to increase the flashing digit.

Note①：Short-time press means press within 1s. Long-time press means press longer than 3s.

Note②：Unit symbol table

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Symbol	M	cm	mm	kg	g	mg	Mpa	pa	ba	Mba	N	W	KW	RPM	Hz	KHz	mV	V	KV	mA	A	KA	Ω	KΩ	℃	℉
Unit	M	cm	mm	kg	g	mg	Mpa	pa	ba	Mba	N	W	KW	RPM	Hz	KHz	mV	V	KV	mA	A	KA	Ω	KΩ	℃	℉

6.Operation Sequence



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7. Setting menu

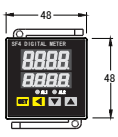
Menu	Function name	Description	Setting range	Initial Value
AL1	#1 Alarm Value	#1 Alarm Value Setting	FL～FH	200
AD1	#1 Alarm Mode	HH: Alarm 1 upper limit HL: Alarm 1 lower limit	HH/HL	HH
HY1	#1 Alarm Hysteresis	#1 Alarm Hysteresis	0-1000	1
AL2	#2 Alarm Value	#2 Alarm Value Setting	FL～FH	600
AD2	#2 Alarm Mode	HH: Alarm 2 upper limit HL: Alarm 2 lower limit	HH/HL	HH
HY2	#2 Alarm Hysteresis	#2 Alarm Hysteresis	0～1000	1
PS	Modified value	Measured value modifying	-1000～1000	0
FT	Filter Constant	Digital filter for input signal	1-250	20
DP	Decimal point selection	Decimal point setting	0-3	0
INP	Input Signal Choice	Refer to the Input Signal Table		-/E
FL	Display lower limit	Display lower limit	Refer to the Input Signal Table	0/-20
FH	Display upper limit	Display upper limit	Refer to the Input Signal Table	1000/1300
LCK	Menu lock password	LCK=0，lock unit，LCK=10，lock menu，LCK=33，into advanced menu	0～9999	0
SCUT	Small signal excision value	It works when o_SL=2，please refer to description in o_SL to see the specific function	-1999～3999	0
o_SL	Display methods choice	When o_SL=0，displayed value is less than FL value，it displays FL value，if displayed value is over FH, it displays FH. When o_SL=1，display value exceed the limitsof FL、FH (No exceeding of -1999～4000), exceeded range can still be displayed. When o_SL=2，display value exceed the limits of FL、FH (No exceeding of -1999～4000), exceeded range can still be displayed. if the displayed value is less than SCUT, it will display the lowest value of FL and SCUT	0～2	0
PSb	Reset value	Long-press SET+▲，clear the displayed value to reset，the value will be reserved in PSb，if you need to reset the value，revise the PSb to 0.	-1999～4000	0
KK	System Reserved			0
CAL	System Reserved			0

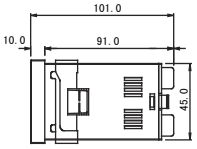
Input signal table

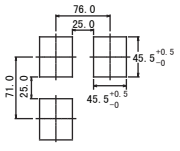
Code	Input Type	Measuring Range	Resolution	Accuracy	Input Resistance
E	K	-20～1300℃	1℃	0.5%F.S	＞100KΩ
J	J	-20～1000℃	1℃	0.5%F.S	＞100KΩ
E	E	-20～600℃	1℃	0.5%F.S	＞100KΩ
t	T	-20～400℃	1℃	0.5%F.S	＞100KΩ
S	S	-20～1700℃	1℃	0.5%F.S	＞100KΩ
Pt	PT100	-199.9～610.0℃	0.1℃	0.5%F.S	（0.2mA）
CUS	CU50	-50.0～150.0℃	0.1℃	0.5%F.S	（0.2mA）
CU1	CU100	-50.0～150.0℃	0.1℃	0.5%F.S	（0.2mA）
mV	0～50mV	-1999～4000	1	0.5%F.S	＞100KΩ
rt	0～400Ω	-1999～4000	1	0.5%F.S	（0.2mA）
0_10	0～10V	-1999～4000	1	0.5%F.S	＞100KΩ
4_20	4～20mA	-1999～4000	1	1%F.S	＜300Ω
0_5V	0～5V	-1999～4000	1	1%F.S	＞100KΩ
1_5V	1～5V	-1999～4000	1	0.5%F.S	＞100KΩ
0_20	0～20mA	-1999～4000	1	0.5%F.S	＜300Ω

8. Mounting Size

4:48H*48W







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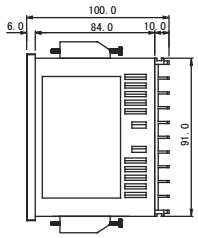

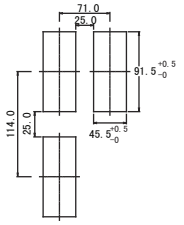

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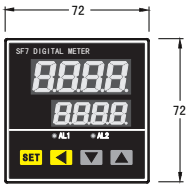

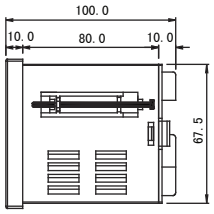

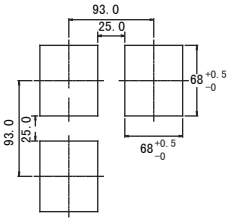

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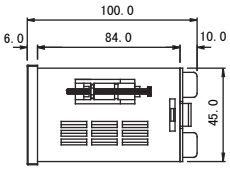

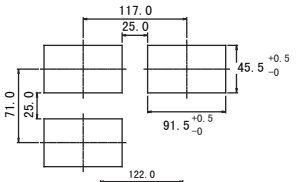

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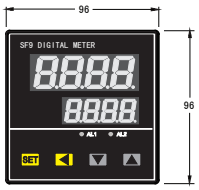

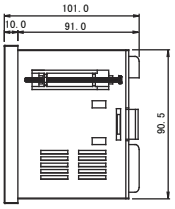

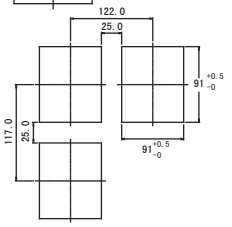

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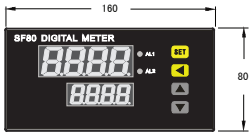
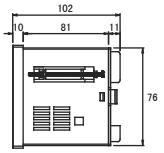
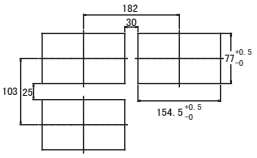
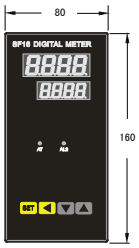
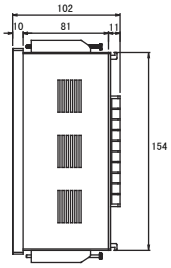


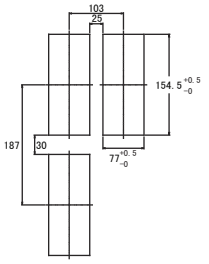




16:160H*80W

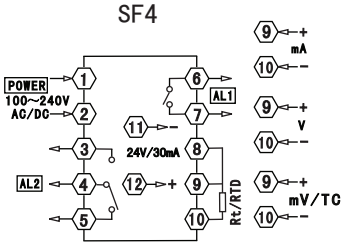




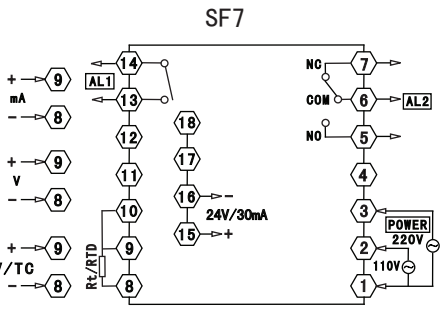


9. Wire Connection

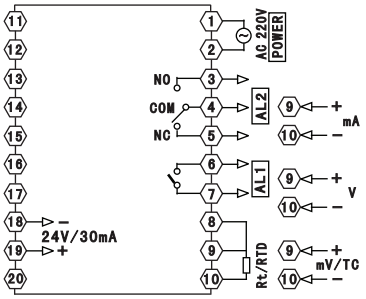
SF4



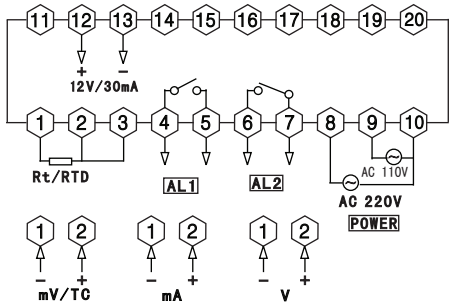
SF7



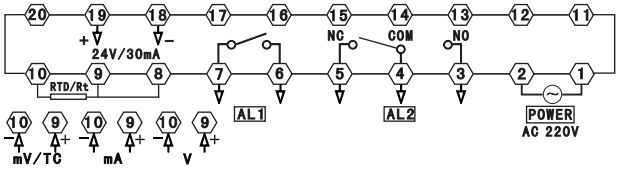
SF9



SF6/8



SF16/80



10. Simple Problem Shooting

Display Message	Shooting Method
Display HHHH / LLLL	To check input signal connecting well or not. To check FH, FL value; To check working temperature is OK or not. To check input signal selection is right or not.