



川制 00000425号

PS4812 Series
intelligent digital pressure indicator
Manual

成都先达电子有限公司

ChengDu SAND Electronic Co., Ltd.

Notes



Dangerous

Attention Risk of Electronic Shock



When we connect the power, please do not touch AC wire to avoid shock



Warning

This instrument is an open device, so when to make applications for the risk, Such as: they will cause harm and damage to other equipment, make sure to install security devices to automatic devices.

- You should carefully check the wiring is correct before Instrument power supply terminal, to avoid serious damage to instrumentation.
- Make sure to wiring, signal devices have access to correct and appropriate terminal; Please do not use a left terminal.
- This instrument is an open case, to be installed in a dust, humidity, shock and strong shocks from distribution box; Do not alter, disassemble the instrument.
- The instrument should be installed as far as possible away from the high voltage and electromagnetic interference region, to ensure stable and reliable instrument.
- Do not touch the meter power terminals or repair the body to avoid electric shock.
- Please avoid this harsh environment of the instrument:
The dust and corrosive gases over the place;
High humidity and high radiation areas;
Strong vibration and strong impact of workplace.

Functional and technical specifications

PS4812 series intelligent digital pressure indicator is the production company to develop new industrial control instruments, which can completely replace the imported products of similar high-grade pressure indicator. Highly cost-effective, and can adapt to volatile network occasion. The pressure indicator appearance, complete functions, interference with excellent performance to ensure reliability of the system work.

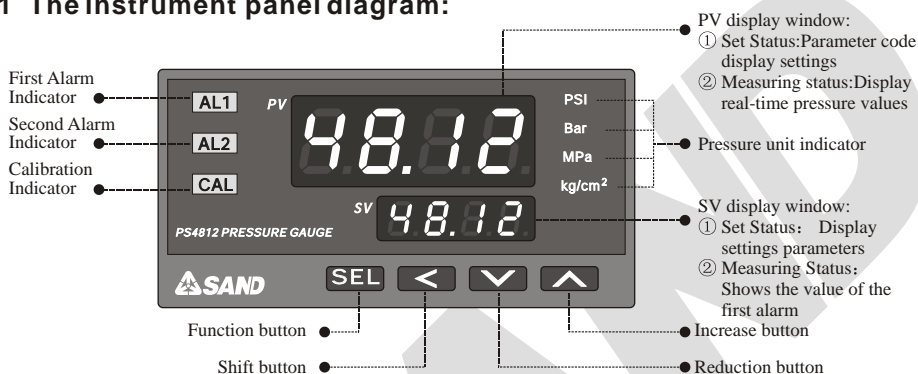
- ☆ Figures show bits: double-color 4;
- ☆ Within the resolution: 32000;
- ☆ External Resolution:
0001,0002,0005,0010 Panel Switch (power failure protection setting of ≥ 40 years);
- ☆ Nonlinear:
0.05% ± 1 word, 0.1% ± 1 word, 0.2% ± 1 word, 0.5% ± 1 word;
- ☆ Pressure Range: programmable options;
- ☆ Engineering units: MPa, psi, bar, kgf / cm² programmable options;
- ☆ Decimal point location: Programmable;
- ☆ Alarm settings: Two programmable alarm settings;
- ☆ Relay contact output: 250VAC, 5A;
- ☆ Linear output:
0 ~ 10mA, 0 ~ 20mA, 4 ~ 20mA, 0 ~ 5V, 1 ~ 5V, 0 ~ 10V programmable options;
- ☆ Instrument Communication: RS485 interface (optional);
Mailing address: 0001 ~ 0255;
Communication baud rate: 2400bps, 4800bps, 9600bps, 19200bps, 38400bps;
- ☆ Power supply: 85 ~ 265VAC;
- ☆ Ambient temperature: -10 °C ~ +85 °C;
- ☆ Humidity: $\leq 80\%$ RH;
- ☆ Continuous trouble-free working time: ≥ 50000 hours.

PS4812 User Instructions

Welcome to use PS4812 Series Intelligent pressure indicator from Chengdu SAND Electronic Co., Ltd. This manual details the functions of the form and use, please read carefully before use!

1. Instrument panel

1.1 The instrument panel diagram:



1.2 Indicator

PS4812 Series Intelligent pressure indicator on the left panel contains two alarm lights, a calibrated light and four pressure unit lights on the right, its functions as follows:

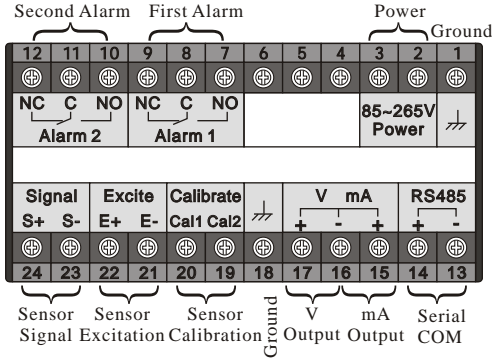
- 1) The first alarm indicator AL1: long light alarm light, no alarm light goes out;
- 2) The second alarm indicator AL2: long bright alarm light, no warning light goes out;
- 3) Calibration status indicator CAL: calibration of pressure indicator, the light starts flashing, the calibration end then the light off;
- 4) The unit of pressure indicator: programmable selection of the corresponding pressure, the corresponding length indicator light

1.3 Button

PS4812 Series Intelligent Pressure indicator consists of four function keys, respectively, SEL function keys, shift key, to increase and decrease keys function keys as follows:

- * **SEL** Function button: used to access the programming menu and set the points and long by two kinds of manipulation by way of;
- * **<** Shift button;
- * **↓** Reduction button;
- * **↑** Increase button;
- * **SEL** + **<** Clear button: while pressing the 2 keys 5 seconds to restore the pressure to zero;
- * **SEL** + **↓** Restore button: the pressure value after the error is cleared, pressing two keys simultaneously for more than 5 seconds to restore pressure to zero;
- * **SEL** + **↑** Calibration key: see page 10 of the calibration instructions;

2. Instrumentation wiring



Alarm Terminals Description:

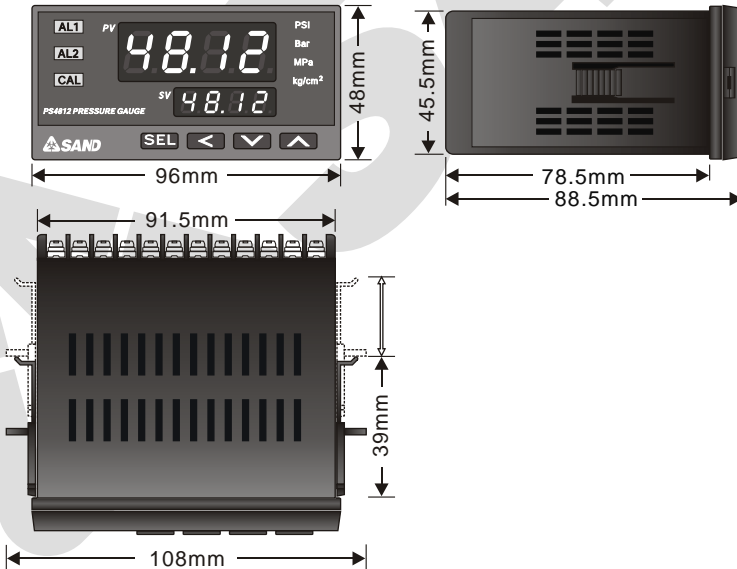
First Alarm Terminal Blocks	NC	Relay normally closed terminal
	C	Relay public-side
Second Alarm Terminal Blocks	NO	Relay normally open terminal
	C	Relay public-side
	NC	Relay normally closed terminal
	C	Relay normally open terminal

Transducer Terminals Description:

Sensor Signal	S+	Sensor signal S+
	S-	Sensor signal S-
Sensor Excitation	E+	Sensor Bridge Power E+
	E-	Sensor Bridge Power E-
Sensor Calibration	Cal1	80% FSO Calibration 1
	Cal2	80% FSO Calibration 2

(This form in accordance with our company's PT series pressure transducer connection establishment)

3. Overall dimension



4. Parameter setting

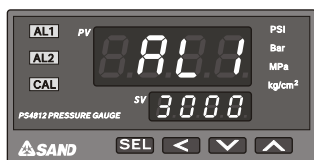
4.1 The three working states of pressure indicator :

PS4812 series pressure indicator, there are three working states: "Measure working state", "Fast set-up working state" and the "System set-up working state". After power on both the pressure indicator into the "Measure working state".

4.2 Fast set-up working state operating:

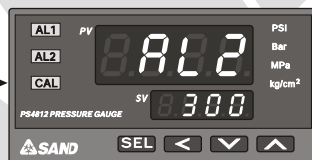


Boot into measure working state, click **SEL** key to enter the fast set-up working state. This state can set the first and second alarm values. PV window display alarm character; SV window display set-up alarm value, digit shines through the **<** **∇** **▲** key to set the desired alarm value. Setup is complete, click **SEL** key of 5 seconds to return to Measure working state.



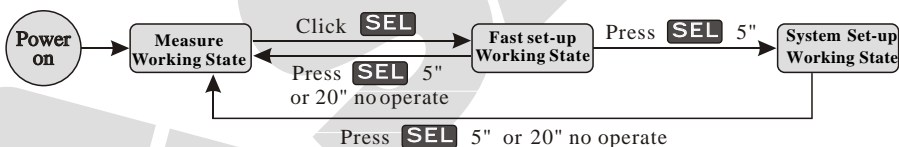
Fast set-up working state
Set the first alarm value

Click **SEL**

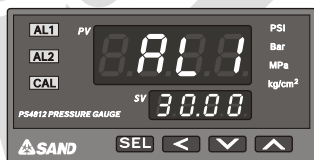


Fast set-up working state
Set the second alarm value

4.3 System set-up working state operating:

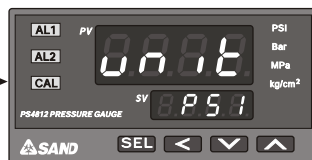


From the measure working state by clicking **SEL** key into the fast set-up working state. (SV window last digit flashing). In the fast set-up working state, press **SEL** key more than 5 seconds into the system set-up working state.



Fast set-up working state
Set the first alarm value

Press **SEL** 5"



System set-up working state
Pressure unit setting

4.3.1 Pressure unit setting:

PSI
bar
MPa
kgf/cm²
off: Do not select any pressure units
All pressure units light goes out.

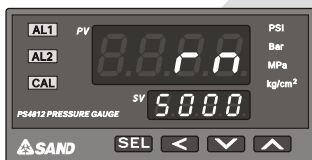
By clicking **▼** and **▲** key select the desired unit of pressure. Click **SEL** key to confirm. Corresponding pressure unit lights lit, and enter the decimal place setting item.

4.3.2 Decimal place setting:



By clicking **▼** or **▲** key to select the desired decimal place. Click **SEL** key to confirm. And enter the pressure range setting item.

4.3.3 pressure range setting:



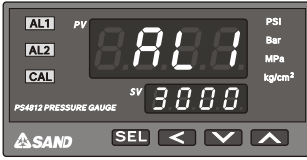
By clicking **▼** or **▲** key to select the desired pressure range. Click **SEL** key to confirm. And enter the display resolution setting item.

4.3.4 display resolution setting:

0001 Data last bitto show: 0~9
To 1 Carry
0002 Data last bitto show: 0/2/4/6/8
To 2 Carry
0005 Data last bitto show: 0/5
To 5 Carry
0010 Data last bitto only show:0
To 10 Carry

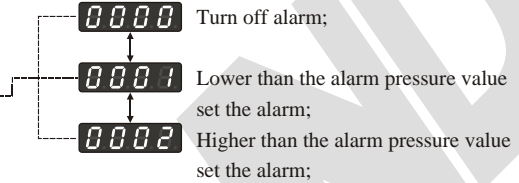
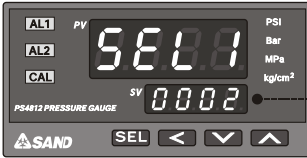
By clicking **▼** or **▲** key select the display resolution of pressure. (Recommended selection 0010). Click **SEL** key to confirm. And enter the first alarm pressure value setting item.

4.3.5 First alarm pressure value setting:



By clicking **<** **∇** **▲** key to set the first alarm pressure value. Click **SEL** key to confirm. And enter the first alarm way setting item.

4.3.6 First alarm way setting:

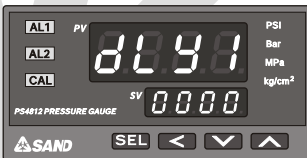


"0001" way code Note: When measuring the pressure is lower than the alarm pressure value, AL1 alarm indicator lights. 7, 8 terminals conduction; 8, 9 terminals disconnect. When measured pressure value is higher than the alarm pressure value, AL1 alarm indicator is off. 7, 8 terminals disconnect; 8, 9 terminals conduction.

"0002" way code Note: When measuring the pressure is lower than the alarm pressure value, AL1 alarm indicator is off. 7, 8 terminals disconnect; 8, 9 terminals conduction. When measured pressure value is higher than the alarm pressure value, AL1 alarm indicator lights. 7, 8 terminals conduction; 8, 9 terminals disconnect.

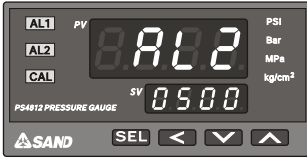
By clicking **∇** or **▲** key select the first alarm way. Click **SEL** key to confirm. And enter the second alarm pressure value setting item.

4.3.7 First alarm pressure hysteresis band setting:



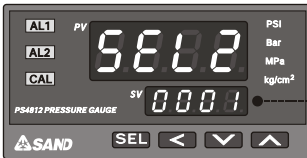
By clicking **<** **∇** **▲** key to set First alarm pressure hysteresis band. Click **SEL** key to confirm. And enter the second alarm pressure value setting item.

4.3.8 Second alarm pressure value setting:



By clicking **<** **∇** **▲** key to set the second alarm pressure value. Click **SEL** key to confirm. And enter the second alarm way setting item.

4.3.9 Second alarm way setting:



- 0000** Turn off alarm;
- 0001** Lower than the alarm pressure value set the alarm;
- 0002** Higher than the alarm pressure value set the alarm;

"0001" way code Note: When measuring the pressure is lower than the alarm pressure value, AL1 alarm indicator lights. 10,11 terminals conduction; 11, 12 terminals disconnect. When measured pressure value is higher than the alarm pressure value, AL1 alarm indicator is off. 10,11 terminals disconnect; 11,12 terminals conduction.

"0002" way code Note: When measuring the pressure is lower than the alarm pressure value, AL1 alarm indicator is off. 10,11 terminals disconnect; 11,12 terminals conduction. When measured pressure value is higher than the alarm pressure value, AL1 alarm indicator lights. 10,11 terminals conduction; 11,12 terminals disconnect.

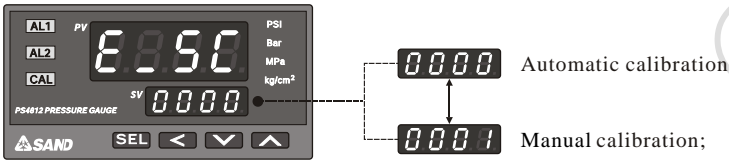
By clicking **∇** or **▲** key select the first alarm way. Click **SEL** key to confirm. And enter the second alarm pressure value setting item.

4.3.10 Second alarm pressure hysteresis band setting:



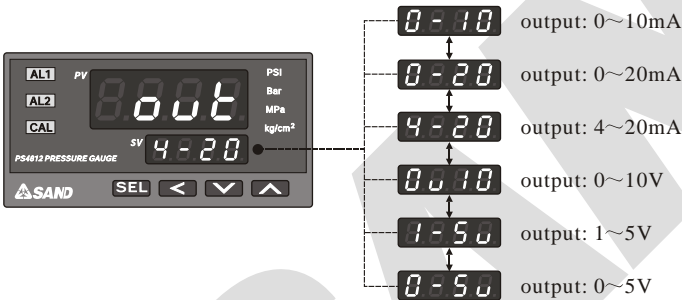
By clicking **<** **∇** **▲** key to set First alarm pressure hysteresis band. Click **SEL** key to confirm. And enter the Calibration way setting item.

4.3.11 Calibration way setting:



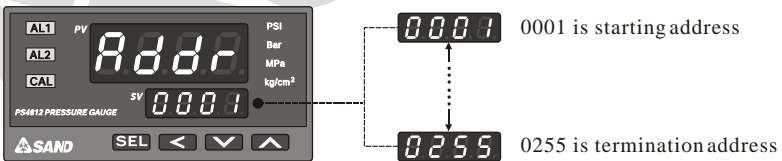
By clicking **▼** or **▲** key select the Calibration way. (Recommended selection 0000). Click **SEL** key to confirm. And enter into the output signal setting item.

4.3.12 output signal setting:



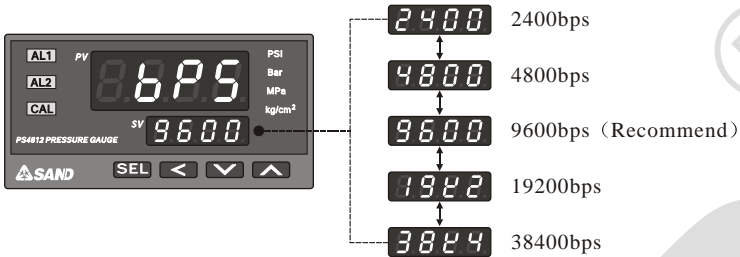
By clicking **▼** or **▲** key select the output signal . Click **SEL** key to confirm. If the pressure indicator no communication function, then enter the key lock setting item (see 4.3.15). If the pressure indicator with a communication function, then enter the communication address setting item.

4.3.13 Communication address setting (Optional):



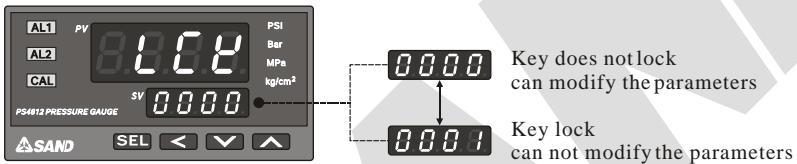
By clicking **◀** **▼** **▲** keyselect the communication address . Optional address: 0001 ~0255 . Click **SEL** key to confirm.then enter theCommunication baud rate setting item.

4.3.14 Communication baud rate setting(Optional):



By clicking **▼** or **▲** key select the Communication baud rate. (Recommended selection 9600). Click **SEL** key to confirm. And enter the key lock setting item.

4.3.15 key lock setting:



By clicking **▼** or **▲** key to select whether the indicator key lock, Click **SEL** key to confirm. And back enter the pressure units setting item(back 4.3.1).

4.4 System setting menutable:













Item	Name	Options	Explain	Initial Value
unit	Pressure Units Setting	psi	Choice of four pressure units and provide close pressure unit options.	By matching mass Sensor range Or According to the user Demand set
Unit		bar		
		MPa		
		kgf/cm ²		
		off		
dot	Decimal Place Setting	---	Decimal Position Setting	By matching mass Sensor range Or According to the user Demand set
dot		---		

		-.---		
00rn	Pressure Range Setting	1000、1500、2000	According to supporting sensor range, the pressure unit and decimal position setting.	By matching mass Sensor range Or According to the user Demand set
RN		2500、3000、3500		
		4000、5000、6000		
		7000、7500、8000		
		9999		

(To be continued on next table)

4.4 System setting menutable:

(Connected to the before table)

Item	Name	Options	Explain	Initial Value
	Display Resolution Setting	0001	0001: the end of the display:0 ~ 9	0010
dv		0002	0002: the end of the show:0,2,4,6,8	
		0005	0005: the end of the show:0,5	
		0010	0010: the end of the show only: 0	
	First Alarm Value Setting	0000 ~ 9999	According to user requirements setting	80% RN
AL1				
	First Alarm Way Setting	0000	0000: Turn off alarm	0002
SEL1		0001	0001: Pressure value less than setting Alarm	
		0002	0002: Pressure value more than setting Alarm	
	First Alarm Hysteresis Band Setting	0000 ~ 0200	According to user requirements setting	0000
DLY1				
	Second Alarm value Setting	0000 ~ 9999	According to user requirements setting	RN的20%
AL2				
	Second Alarm way Setting	0000	0000: Turn off alarm	0001
SEL2		0001	0001: Pressure value less than setting Alarm	
		0002	0002: Pressure value more than setting Alarm	
	Second Alarm Hysteresis Band Setting	0000 ~ 0200	According to user requirements setting	0000
DLY2				
	Calibration Way Setting	0000	0000: Automatic calibration method	0000
E_SC		0001	0001: Manual calibration method	
	Output Signal Setting	0~5V	Provide 6 types standard output signal users to demand their own programming setting.	According to the user Demand set
OUT		1~5V		
		0~10V		
		0~10mA 0~20mA 4~20mA		
	Communication Address setting (Optional)	0001 ~ 0255	Provide 1~255 address programmable setting (optional)	0001
Addr				
	Communication Baud Rate Setting (Optional)	2400	Provide 5 types standard baud rate programmable setting (optional)	9600
bps		4800		
		9600		
		19200 38400		
	Key Lock Setting	0000	0000: Key not lock, can modify the parameters	0000
LCK		0001	0001: key lock, can not modify the parameters	

5 Pressure indicator calibration operation

5.1 Automatic calibration of pressure indicator operation:

Automatic calibration before the unlock key (the "LCK" parameter set "0000"), and calibration methods for automatic calibration (the "E_SC" parameter set "0000").

Guarantee melt pressure transducer is working in environment temperature and working pressure is zero.

The melt pressure transducer and intelligent pressure indicator according to the instruction to connect well, and also connected the 220VAC power supply. Entered measurement instrument self-test state, then can be automatically calibrated, the concrete operation is as follows:

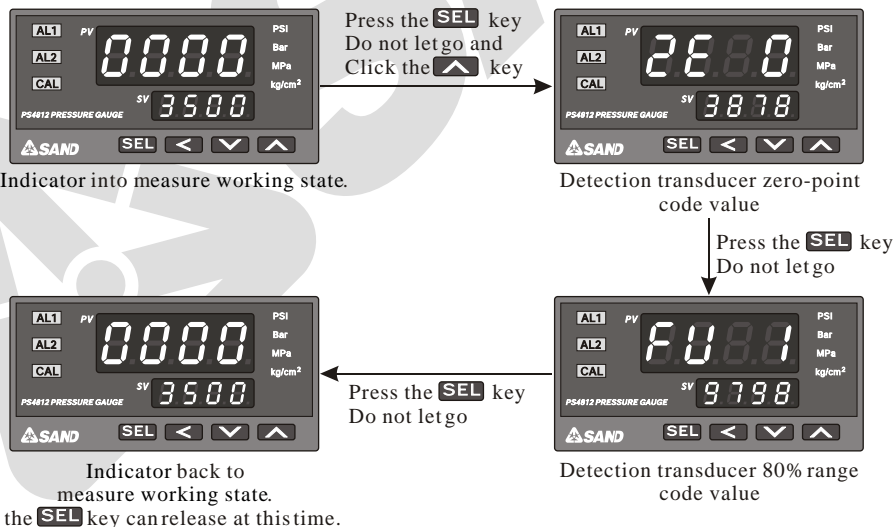
Click down the **SEL** key while you click the **▲** key, PV window display **2E80**, SV values in the window display "from 2000 to 6000" between, this value for the pressure transducer zero-point code value, while the CAL calibration-light flashes.

After about 5 seconds, PV window shows **FU 1** or **FU 2**. SV values in the window display "16,000~ 25,000" between (ten thousand's place in PV window at the end of display). This number is the pressure transducer 80% range of the code values. Waiting in the calibration process of **SEL** key can not let go.

After about 5 seconds, PV window shows **0000**. Pressure transducer calibration information has been written to indicator at this time at the end of the automatic calibration operation, calibration light goes out. Throughout the calibration process **SEL** key and do not let go. (If this process does not show that the 80% range value, or this value error is too large. please re-operation of the automatic calibration, and check either the indicator range settings are correct or pressure transducer and indicator connection are correct.)

Then, release the **SEL** key, the indicator is into the Fast set-up working state. Click the **SEL** key twice, the indicator will be back to measuring working state.

Automatic calibration operation is complete.



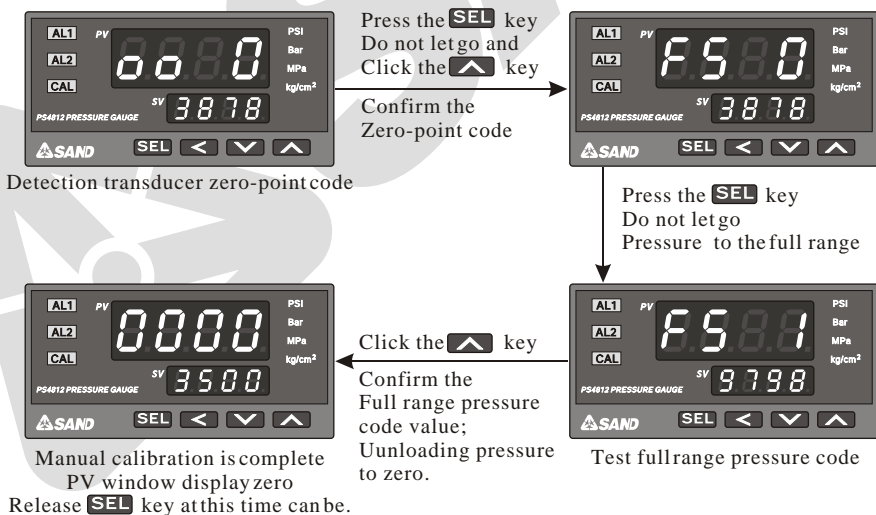
5.2 Manual calibration of pressure indicator operation:

This function is for pressure transducer without calibration signal or calibration signal error too large that can not adjust. Before manual calibration we should unlock the key (the "LCK" parameter set "0000"), and calibration methods for the manual calibration (the "E_SC" parameter set "0001"). Guarantee pressure transducer probe-pressure is zero.

First, installing the pressure transducer to the provide standard pressure source device. Then connect the pressure transducer and pressure indicator according to the instructions to connect, and then connected the 220VAC power. Indicator power-on self-test into measure working state, then in accordance with the operation entering to system parameter setting state (4.3 - page 3). The range is set to the corresponding pressure transducer range, and then can be manually calibrated, the concrete operation is as follows:

① Press the **SEL** key while you click the **▲** key, PV window display **0000**, SV window value should be between "2000 ~ 5000", this value is the pressure transducer zero-point's code value, while the CAL calibration-light flashes. click the **▲** key to confirm the zero-point code. In the calibration process pressing the **SEL** key can not release.

② After confirming zero-point code, PV window display **F500**, then through a standard pressure source to the pressure sensor to full pressure range, then PV window display **F581** or **F582**, SV window value should be between "16,000 ~ 32,000" (ten thousand's place in PV window at the end of display), waiting for the value of relative stability, then click the **▲** to confirm and the calibration light goes out. PV window display the value of a standard source to provide of the pressure value. Release the **SEL** key and unload pressure to zero, then the indicator will be into the fast set-up working state. Click the **SEL** key twice, indicator will be back to measure working state. Manual calibration operation is complete. (If the PV window display the standard pressure value error is too large, return to step ① re-operation.)



6 Measure working state

6.1 Measure working state

PV window display the pressure measurement value, On the right correspond pressure units light long Leung. SV window shows the first alarm pressure value. Normal measure working state on the left alarm and calibration light is off, when the test pressure value is lower or higher than the alarm pressure value, the AL2 or AL1 alarm lights turn on; when the test pressure value is to restore Normal, the AL2 or AL1 alarm lights turn off.

6.2 Measure working state drift - clear operation:

First automatic calibration operation (section 5.1 on page 10). After time, if there are temperature drift or time shift, you can hold down the **SEL** key at the same time click **<** key to clear the current drift value. if clear wrong, you can hold down the **SEL** key and **✓** key, more than 5 seconds to restore zero.

7 Simple Fault Repair

- ① Without any display, check whether the correct 220VAC connected, if not, check the switching power whether has output.
If the user connection error caused major fault. Please contact me to replace parts for you, such as the power supply board, AD / DA board, display board.
- ② PV window display "88.88" or "-.-.-". Because the pressure transducer and indicator wrong connection or poor contact. as long as the connection access can trouble clearing.
- ③ PV window display the pressure value jump word: usually because of interference, and ground is poor contact with the earth, as long as the shield can be connected and with the earth.

8 Model Format

PS4812 **D** / **1** / **2** / **3** / **4**

- 4: 485 communication with computer (optional)
- 3: With relay alarm
- 2: Programmable output signal function (optional)
- 1: Only display, without the output signal (optional)
- D: 3.33mV/V pressure transducer input (optional)
The default is 2.0mV/V pressure transducer input

Example : PS4812D / 2 / 3

The Intelligent Pressure Indicator with 3.33mV / V input pressure transducer.
With a programmable output function and relay alarm function.

9 Service

- ① Open the package, Please check the product whether it meets your requirements, packaging, products if there is any damage, if found in error. Please contact us.
- ② This product is a precision measuring indicator. Can not be beat, pounding, powerful treatment. Improper operation due to man-made damage caused by products not under warranty.
- ③ The following are not covered under warranty:
Not in accordance with the instructions, proper installation, man-made product damage;
Unauthorized users of the product for repairing or reconstruction;
By irresistible external forces caused by damage to the product;
Unclear or missing product label, the product looks seriously damaged.
- ④ If there is any problem when you are using our products, Please keep defective product, contact with our company, explain the phenomenon of failure and use of the environment, our company will provide timely technical support. Do not unauthorized repair.

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