SIER ELECTRONICS CO., LTD

SE22 2088 Smart LCD Pressure Transmitter Electronics

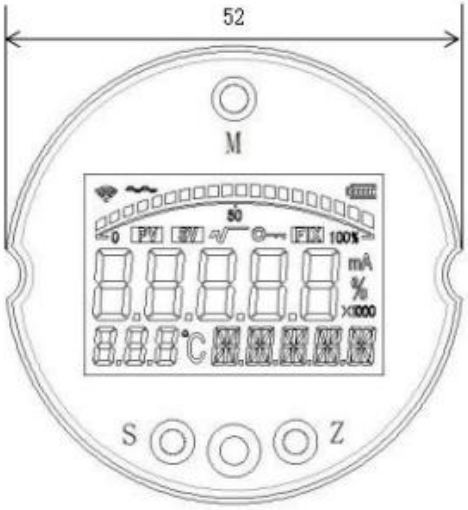
Introduction

The SE22 2088 Smart LCD Pressure Transmitter Electronics is a high-precision display device designed for industrial automation and precision measurement, and is widely used in the monitoring and control of physical quantities such as pressure and temperature. It uses a high-resolution LCD display with a backlight function, which allows clear reading of data even in low light conditions. The meter supports a variety of unit options and provides a user self-calibration function to ensure long-term stability and accuracy. The built-in temperature compensation mechanism enables it to maintain high-precision measurements under different ambient temperatures. SE22 2088 not only supports standard 4-20mA analog output signals, but also has an optional RS485 digital communication interface for remote monitoring and data transmission. Through intelligent function settings, including multi-parameter configuration and communication interfaces, SE22 2088 can meet the needs of various complex application scenarios and is an ideal choice for industrial process control and monitoring. Whether it is used for real-time data display or integrated into an automation control system, this display meter can provide reliable and accurate data support.

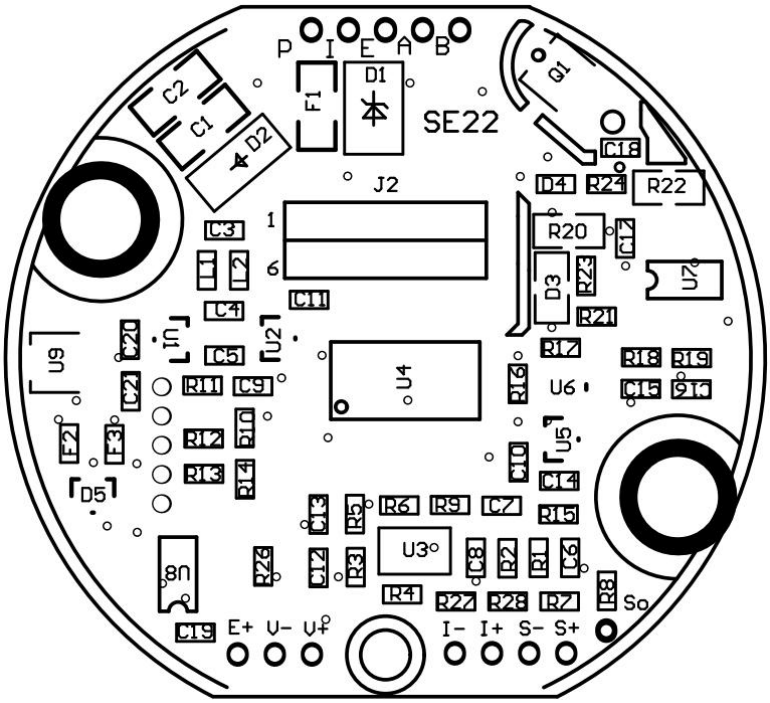
Specifications

Power supply	12~30VDC, 24V recommended
Output	4~20mA　2 wires or RS485
Constant current excitation	0.4mA
Constant voltage excitation	2.5V
Display Range	-19999~99999
Temperature Drift	<35ppm/℃
Work Environment	Temperature -30~80℃, humidity <85%, dry and corrosion-free environment.
Load resistance	(VCC-12)/20mA
Current output resolution	About 1uA

Outline Dimension(unit:mm)



Wiring



V+	Constant voltage source+	I+	Constant current source+
V-	Constant voltage source-	I-	Constant current source-
E+	5V	S+	Sensor Output+
P	Power supply	S-	Sensor Output-
I	Output	A	RS485A
E	Ground	B	RS485B

Display area description

Menu Settings

Function Description

Function Key "M"

- In measurement mode, long-press to turn on and enter password setting.
- In the setting mode, short-press to modify the function parameters, and short press again to confirm the parameter modification.

Full adjustment key "S"

- In the measurement mode,long-press to reset to zero.
- In setting mode, add a function to the setting parameters.

Zero key "Z"

- In the measurement mode, short-press is display mode modification function in unit.
- In the setting mode, minus a function to the setting parameters.

Menu Description

The menu of this instrument is divided into three levels: "Advanced User Menu" , "General User Menu", and "Factory Menu",which are distinguished by the entry password of each level.

- "Factory Menu" : entry password is "0066".
- "Advanced User Menu" : entry password is "0016".
- "General User Menu" : entry password is "0001".
- "Factory Reset" : entry password is "-100".

Password Setting Menu

Loc: Password input menu,settable range (-19999 to 99999), the menu prompt is "Loc"

Set the password for entering the menu. If the password is entered incorrectly or there is no key operation within 30 seconds, it will automatically return to the measurement mode.

General User Menu

Unt: unit

Select the unit of the sensor output value. The range can be set (0 to 19). The menu prompt is the set unit.

' MPa ', ' KPa ', ' Pa ', ' bar ', ' mbar ', ' PSI ', ' mH_2O ', ' mmH_2O ', ' InH_2O ', ' ftH_2O ', ' mHg ', ' mmHg ', ' InHg '. 'Kg / cm^2 ', ' atm ', ' Torr ', ' m ', ' cm ', ' mm ', ' °C '.

Dot: decimal point

Set the decimal point position for displayed values, and determine the number of decimal places. For example, you can choose to display one, two, three, or four decimal places.

SHO: display mode

Select different display modes to use different forms to represent the current pressure status.

Pressure, current value, percentage, pressure and current value, pressure and percentage, pressure and current value.

The prompts are: "-P-", "-A-", "-U-", "P-A", "P-U", "A-U"

Add: address

Set the communication address of the device in the network to ensure that each device can be distinguished and identified in a multi-device system (range 0~255).

-bd: baud rate

Set the baud rate for communication between the device and the external system. 1200, 2400, 4800, 9600, 19200, 34800, 115200

End: save and exit

Save all current settings and exit the menu.

Advanced User Menu

Fil: filter coefficient

Set the filter coefficient to smooth the sensor's output signal and reduce noise interference. A higher filter coefficient will increase signal stability but will also reduce response speed.

Bsl: output zero display

Set the sensor output value display under zero pressure conditions. This value is usually 0 or a specific reference value. The range can be set (-19999 to 99999).

bsH: output full point display

Set the output value of the sensor under full-scale pressure conditions. This value is usually the maximum measurement range of the sensor. The range can be set (-19999 to 99999).

SoL: zero output

Set the output signal value of the sensor under zero pressure conditions. This value is usually a standard signal (such as 4mA). When the user calibrates, you need to connect an ammeter to observe the output value.

SoH: full output

Set the output signal value of the sensor under full-scale pressure conditions. This value is usually a standard signal (such as 20mA). When the user calibrates, you need to connect an ammeter to observe the output value.

ZRO: zero factor

Set the zero factor to correct the offset error of the sensor under zero pressure conditions. The range can be set from 0 to 10. For example: when the menu value is set to 0.10, it means that when the transmitter output is close to zero plus or minus 0.10% of the transmission range, the transmitter output will automatically stabilize at zero, and there will be no output jump due to interference.

odS: output offset

Set the output offset, the range can be set (-19999 to 99999) to correct the overall output deviation of the sensor. The offset value can be positive or negative.

COE: coefficient of sensitivity

Set the sensitivity coefficient, the range can be set (0.0001 ~ 1.9999). During the use of the transmitter, if the sensitivity of the sensor changes, it can be corrected through this menu. Before correcting the sensitivity of the transmitter, the zero point error of the transmitter should be corrected through the zeroing function to ensure that the linearity of the transmitter is normal after the sensitivity correction. The default value of this menu is "1.0000".

For example: the transmitter calibration range is 0.0000～20.000MPa. After the transmitter is used for a period of time, the zero point becomes "0.0050MPa" and the full point becomes "20.160MPa". At this time, the zero point and sensitivity of the transmitter have changed. When correcting it, the main variable clearing function should be used to clear the error of its zero point. After the main variable is cleared, the zero point of the transmitter is "0.0000MPa" and the full point is "20.110MPa". Then calculate the theoretical full point divided by the actual full point value to correct its sensitivity, that is, 20.000MPa /20.110MPa=0.9945. Change the sensor sensitivity correction coefficient to "0.9945" to correct the sensitivity change.

Rst: restore factory

Reset all configuration parameters to factory default values. Restore factory data, settable range (0～1)

This menu function is to restore the transmitter data to the factory state. This function is only valid when exiting the setting and saving the data.

“0”--turn off the factory restore function, prompt “NO”

“1”--turn on the factory restore function, prompt “YES”

End: save and exit

Save all current settings and exit the menu.

Factory menu

Dat: product number

Set or view the product number (SN) of the device, used to track and manage the device.

Unt: unit

Same as the unit setting in the normal user menu, select the unit of the sensor output value.

Dot: decimal point

Same as the decimal point setting in the normal user menu, determine the number of decimal places.

dpL: zero point display

Set the display value of the sensor under zero pressure conditions. This value is usually 0 or a specific reference value.

dpH: full point display

Set the display value of the sensor under full scale pressure conditions. This value is usually the maximum measurement range value of the sensor.

PGA: amplification

Set the amplification to adjust the gain factor of the sensor output signal. ±127mV, ±135mV, ±67.5mV, ±33.8mV, ±16.8mV, ±8.43mV, ±4.22mV.

Lin: Linearity factor

Set the linearity factor to correct the nonlinear characteristics of the sensor output signal so that it maintains a linear response over the entire measurement range.

AdL: zero point acquisition

Under zero pressure conditions, the analog signal output by the sensor is converted to a digital value. This value represents the baseline reading of the sensor under no load.

AdH: full point acquisition

Under full scale pressure conditions, the analog signal output by the sensor is converted to a digital value. This value represents the reading of the sensor within its maximum measurement range.

bsL: output zero display

Same as the output zero display setting in the advanced user menu, used to set the display value of the sensor under no load.

bsH: output full point display

Same as the output full point display setting in the advanced user menu, used to set the display value of the

sensor within its maximum measurement range.

SoL: zero point output

Same as the zero point output setting in the advanced user menu, used to set the output signal value of the sensor under zero pressure conditions.

SoH: full point output

Same as the full point output setting in the advanced user menu, used to set the output signal value of the sensor under full scale pressure conditions.

Zro: zero point factor

Same as the zero point factor setting in the advanced user menu, used to correct the offset error of the sensor under zero pressure conditions.

SHE: power on interface

Set the interface content displayed when the device is powered on, such as brand logo, version number, etc.

CAL: algorithm switching

Select different algorithms for data processing and calibration.

0: Pressure calibration algorithm

1: Temperature calibration algorithm (pt100)

End: save and exit

Save all current settings and exit the menu.

Contact

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