

# SIER ELECTRONICS CO., LTD

A: 2nd Floor, Building No.A2, Western sensor park, No.30 Jiangtan Xi Road, Baoji 721004, Shaanxi, China

Tel: +86 917 3652001

Fax: +86 917 3652001

Email: [kenny@sierselectro.com](mailto:kenny@sierselectro.com)

Web: [www.sierselectro.com](http://www.sierselectro.com)

## SPT82T High Temperature Sanitary Pressure Sensor

### Features

- Pressure range:-1...0 ~ 0.1...100bar
- Gauge, Absolute and Sealed gauge
- Constant current or Constant voltage power supply for option
- Isolated construction to measure various fluid media
- Hygienic structure optional( $Ra < 0.4\mu m$ )
- Negative pressure measurement is available, the lowest to around -1bar



### Application

- Industrial process control
- Level measurement
- Gas, Liquid pressure measurement
- Pressure meter
- Pressure calibrator
- Liquid pressure system and Switch
- Refrigeration equipment and Air conditioner
- CIP or SIP online cleaning or sterilization system

### Introduction

SPT82T High Temperature Sanitary Pressure Sensor is a pressure sensing element through male thread and clamp connection. It has pressure port DN25clamp, sealed by FKM or silicon O-ring. The isolated diaphragm is welded in front of thread port, the range is -1...0 ~ 0.1...100bar(clamp connection). It is suitable for pressure detection in food, medicine, health and other industries and occasions where the measuring medium may be fouled. We can use gauge type of general, assembled and flush diaphragm type SPT82T to measure pressure below air pressure, the min. pressure can be around -1bar.

### Electric Specification

- Power supply:  $\leq 2.0mA$ DC
- Electric connection:  $\Phi 0.5mm$  gold-plated Kovar pin or 100mm flexible silicone rubber wires
- Common mode voltage output: 50% input (typ.)
- Input impedance:  $2.5k\Omega \sim 8k\Omega$
- Output impedance:  $3.5k\Omega \sim 6k\Omega$
- Response (10%~90%):  $< 1ms$
- Insulation resistor:  $100M\Omega @ 100VDC$
- Overpressure: 2 times FS

## SPT82T High Temperature Sanitary Pressure Sensor Datasheet

### Construction

- Diaphragm: stainless steel 316L with gold plated
- Housing: stainless steel 316L
- Pin: Kovar
- O-ring:FKM
- Net weight: ~148g

### Environment Condition

- Shock: No change at 10gRMS,(20~2000)Hz
- Impact: 100g, 11ms
- Media compatibility: The gas or liquid which is compatible with construction material and FKM.

### Basic Condition

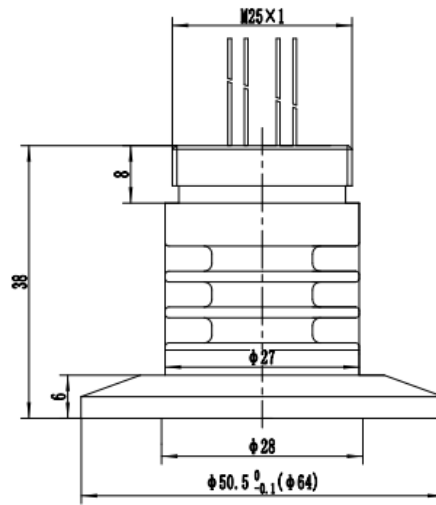
- Media temperature: (25±1)°C
- Environment temperature: (25±1)°C
- Shock: 0.1g (1m/s<sup>2</sup>) Max
- Humidity: (50±10)%RH
- Local air pressure: (0.86 ~ 1.06)bar
- Power supply: (1.5±0.0015)mADC

### Basic Specification

| Specification*                                                                                                                                                                                                    | Min.      | Typ.  | Max.   | Units     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------|--------|-----------|
| Linearity**                                                                                                                                                                                                       |           | ±0.15 | ±0.25  | %FS,BFSL  |
| Repeatability                                                                                                                                                                                                     |           | ±0.05 | ±0.075 | %FS       |
| Hysteresis                                                                                                                                                                                                        |           | ±1.0  | ±0.075 | %FS       |
| Zero output                                                                                                                                                                                                       |           | ±1.0  | ±2.0   | mVDC      |
| Output/Span**                                                                                                                                                                                                     | 70        |       |        | mVDC      |
| Zero thermal error***                                                                                                                                                                                             |           | ±0.75 | ±1.0   | %FS,@25°C |
| Span thermal error                                                                                                                                                                                                |           | ±0.75 | ±1.0   | %FS,@25°C |
| Compensated temp. range                                                                                                                                                                                           | 0 ~ 50    |       |        | °C        |
| Working temp. range                                                                                                                                                                                               | -40 ~ 125 |       |        | °C        |
| Storage temp. range                                                                                                                                                                                               | -55 ~ 125 |       |        | °C        |
| Stability error                                                                                                                                                                                                   |           | ±0.2  | ±0.3   | %FS/year  |
| * Testing at basic condition,G: Gauge; A: Absolute; S: Sealed gauge<br>** Output/Span=full scale output - zero point<br>350mbar G, FS output ≥60mV<br>700mbar A, 0.1bar A, 700mbar GY, 1.0bar GY, FS output ≥45mV |           |       |        |           |

## SPT82T High Temperature Sanitary Pressure Sensor Datasheet

### Outline Construction (Unit: mm)



### Electric Connection

| Pin | Definition | Wire color |
|-----|------------|------------|
| 4   | +OUT       | Red        |
| 5   | +IN        | Black      |
| 6   | -IN        | White      |
| 10  | -OUT       | Blue       |

## SPT82T High Temperature Sanitary Pressure Sensor Datasheet

### Order Guide

|           |                                           |                                           |                                                      |      |      |             |                            |                |
|-----------|-------------------------------------------|-------------------------------------------|------------------------------------------------------|------|------|-------------|----------------------------|----------------|
| SPT82T    |                                           | High Temperature Sanitary Pressure Sensor |                                                      |      |      |             |                            |                |
|           |                                           | Code                                      | Range                                                | Ref. | Code | Range       | Ref.                       |                |
|           |                                           | 03                                        | 0bar~1bar                                            | G.A  | 12   | 0bar~20bar  | G.A                        |                |
|           |                                           | 07                                        | 0bar~2bar                                            | G.A  | 13   | 0bar~35bar  | G.A.S                      |                |
|           |                                           | 08                                        | 0bar~3.5bar                                          | G.A  | 14   | 0bar~70bar  | S.A                        |                |
|           |                                           | 09                                        | 0bar~7bar                                            | G.A  | 15   | 0bar~100bar | S.A                        |                |
|           |                                           | 10                                        | 0bar~10bar                                           | G.A  |      |             |                            |                |
|           |                                           | Code                                      | Pressure type                                        |      |      |             |                            |                |
|           |                                           | G                                         | Gauge                                                |      |      |             |                            |                |
|           |                                           | A                                         | Absolute                                             |      |      |             |                            |                |
|           |                                           | S                                         | Sealed gauge                                         |      |      |             |                            |                |
|           |                                           | Code*                                     | Pressure connection                                  |      |      |             |                            |                |
|           |                                           | O or null                                 | O ring                                               |      |      |             |                            |                |
|           |                                           | PD1                                       | DN25 Clamp connection                                |      |      |             | Top: M25×1 External thread |                |
|           |                                           | Code                                      | Compensation                                         |      |      |             |                            |                |
|           |                                           | L                                         | Laser trimming                                       |      |      |             |                            |                |
|           |                                           | M                                         | Outer compensated resistor(providing resistor value) |      |      |             |                            |                |
|           |                                           | Code                                      | Electrical connection                                |      |      |             |                            |                |
|           |                                           | 1                                         | Kovar pin(default)                                   |      |      |             |                            |                |
|           |                                           | 2                                         | 100mm silicon rubber flexible wires                  |      |      |             |                            |                |
|           |                                           | Code                                      | Special measurement                                  |      |      |             |                            |                |
| Y         | Gauge sensor to measurevacuum(-1bar~0bar) |                                           |                                                      |      |      |             |                            |                |
| O or null | normal type                               |                                           |                                                      |      |      |             |                            |                |
| W         | NEObec M20                                |                                           |                                                      |      |      |             |                            |                |
| SPT82T    | 08                                        | G                                         | PD1                                                  | L    | 2    | Y           | W                          | The whole spec |