

## SPT21Z High Accuracy Pressure Transmitter

### Features

- 4~20mADC 2-wire current output
- Digital compensation and non-linearity correction technicis
- -10℃~70℃ digital wider temperature compensation
- RS485 communication interface
- Netting available
- Full stainless-steel construction, compact size, light weight
- Special requirement available



### Applications

- Petrolatum
- Electricity
- Mechanical manufacturing
- Hydraulic and pneumatic control
- Pipeline system
- Hydrology and water resources

### Introduction

SPT21Z pressure transmitter is the highly accurate and stable intelligent pressure transmitter. It uses digital temperature compensation, non-linearity correction technics and the most advanced transmitter production technique, the whole product has compact size, high accuracy, light weight and wider pressure range, can be used for flow pressure precise measurement. The product will instead the 2-wire working 4~20mADC output analogous signal.

### Specification

|                         |                                                |
|-------------------------|------------------------------------------------|
| Range                   | -1...0~0.1...1000bar                           |
| Over pressure           | ≤1.5 times FS or 1000bar (min. value is valid) |
| Pressure type           | Gauge/absolute/sealed gauge optional           |
| Accuracy                | see Accuracy definition                        |
| Stability               | ≤±0.2%FS/year                                  |
| Compensated temp.       | -10~70℃                                        |
| Operation/storage temp. | -30~80℃                                        |
| Insulation              | 100MΩ/50V                                      |
| Shock                   | 20g, (20~5000)Hz                               |
| Impact                  | 20g, 11ms                                      |
| Protection              | IP65, IP63                                     |
| Weight                  | ~160g                                          |

**Accuracy**(Test condition: Environment temperature:  $25\pm 5^{\circ}\text{C}$  Relative humidity: 45%~75%)

| Pressure Type    | Range                               | Accuracy                        |
|------------------|-------------------------------------|---------------------------------|
| Gauge (G)        | 0bar~0.1bar<X<0.35bar               | $\pm 0.5\%\text{FS}$            |
|                  | 0.35bar $\leq$ X $\leq$ 35bar       | $\pm 0.1\%\text{FS}$            |
|                  |                                     | $\pm 0.25\%\text{FS}$ (default) |
|                  | -1bar~ -0.35bar<X $\leq$ 2bar       | $\pm 0.5\%\text{FS}$            |
|                  | -1bar~ -0.35bar<X $\leq$ 2bar~35bar | $\pm 0.25\%\text{FS}$           |
| Absolute (A)     | 0bar~0.7bar<X $\leq$ 1bar           | $\pm 0.5\%\text{FS}$            |
|                  | 1bar<X $\leq$ 10bar                 | $\pm 0.25\%\text{FS}$           |
|                  | 10bar<X $\leq$ 1000bar              | $\pm 0.1\%\text{FS}$            |
|                  |                                     | $\pm 0.25\%\text{FS}$ (default) |
| Sealed gauge (S) | 35bar<X $\leq$ 1000bar              | $\pm 0.1\%\text{FS}$            |
|                  |                                     | $\pm 0.25\%\text{FS}$ (default) |

**Output Signals**

|                             |                  |
|-----------------------------|------------------|
| 2-wire current              | 4~20mA           |
| 3-wire current              | 4~20mA (default) |
|                             | 0~20mA           |
| 3-wire voltage              | DC 0~10V         |
|                             | DC 0~5V          |
|                             | DC 1~5V          |
|                             | DC 0.5~4.5V      |
|                             | DC 0.5~2.5V      |
|                             | DC 0.1~2.1V      |
| 3-wire proportional voltage | DC 0.5~4.5V      |
| RS485                       |                  |

For other output requirements, please contact us.

**Power Supply**

| Output signals                    | Power supply     |                 |
|-----------------------------------|------------------|-----------------|
|                                   | Default          | Optional        |
| 4~20mA                            | DC 11~28V        | DC 8~32V        |
| DC 0~10V                          | DC 11~28V        | DC 11~32V       |
| DC 0~5V                           | DC 11~28V        | DC 11~32V       |
| DC 1~5V                           | DC 11~28V        | DC 11~32V       |
| DC 0.5~4.5V                       | DC 5V $\pm$ 0.1V | DC 8~32V        |
| DC 0.5~2.5V                       | DC 5V $\pm$ 0.1V | DC 8~32V、DC3.3V |
| DC 0.1~2.1V                       | DC 5V $\pm$ 0.1V | DC 8~32V、DC3.3V |
| DC 0.5~4.5V (proportional output) | DC 5V $\pm$ 0.5V | /               |

|       |           |            |
|-------|-----------|------------|
| RS485 | DC 11~28V | DC 5V±0.1V |
|-------|-----------|------------|

### Load Resistance(Ω)

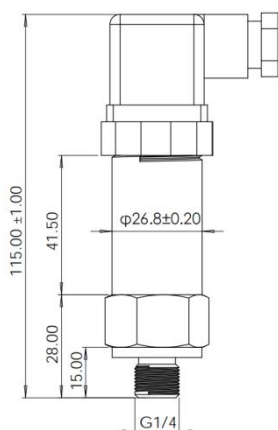
|                |                                                        |
|----------------|--------------------------------------------------------|
| Current outout | $\leq (\text{power supply}-11\text{V}) / 0.02\text{A}$ |
| Voltage output | $\geq 10\text{k}$                                      |

### Material

|                    |                                                           |
|--------------------|-----------------------------------------------------------|
| Housing            | SS304/SS316L/SS1Cr18Ni9Ti                                 |
| Pressure interface | SS304/SS316L/Hastelloy C/Titanium Alloy                   |
| Diaphragm          | SS316L/Tantalum                                           |
| Sealing gasket     | NBR (default) / Viton                                     |
| Plug Housing       | Glass Fiber Nylon                                         |
| Cable              | Polyethylene / Polyurethane / Polyvinyl Chloride / Teflon |

### Outline Dimension (unit: mm)

#### Hirschmann 4-pole plug-in type



### Electrical Connection

| Hirschmann |    |        |        |
|------------|----|--------|--------|
|            |    | 2-wire | 3-wire |
|            | UB | 1      | 1      |
|            | 0V | 2      | 2      |
|            | S+ | -      | 3      |

#### Description

UB : Power +

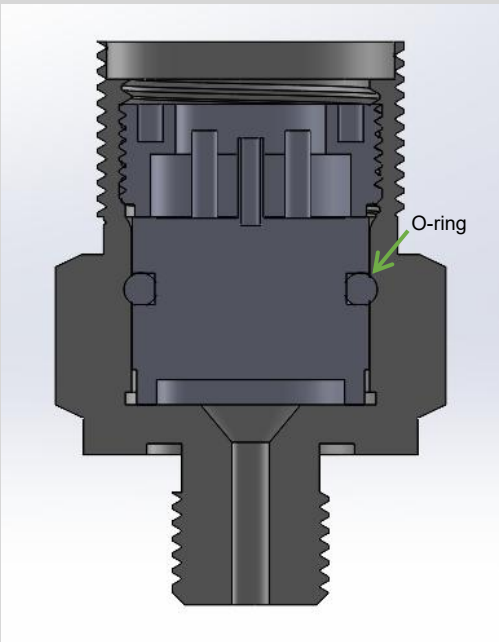
0V : Power -

S+ : Analog output

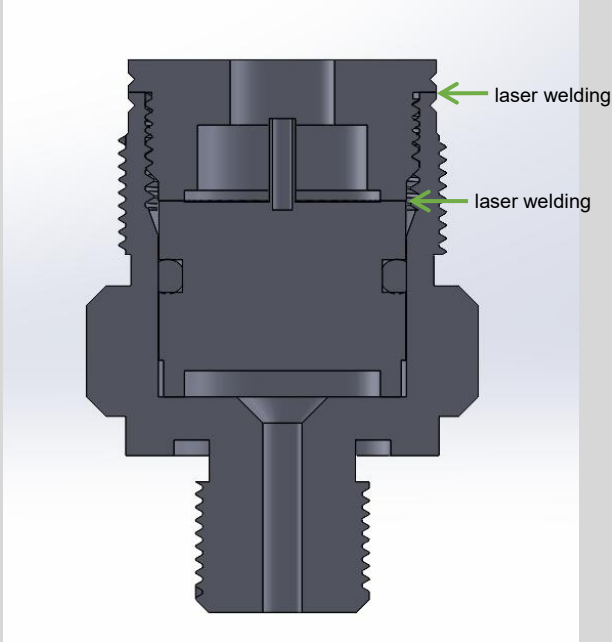
Sensor Sealing

O-ring Sealing

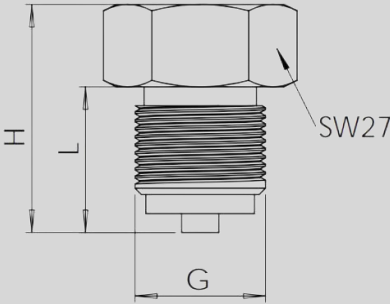
(O-ring material : fluorine rubber, ethylene propylene diene monomer, nitrile rubber)



Soldering

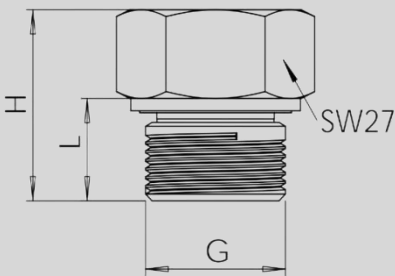


Process connection(Unit:mm)



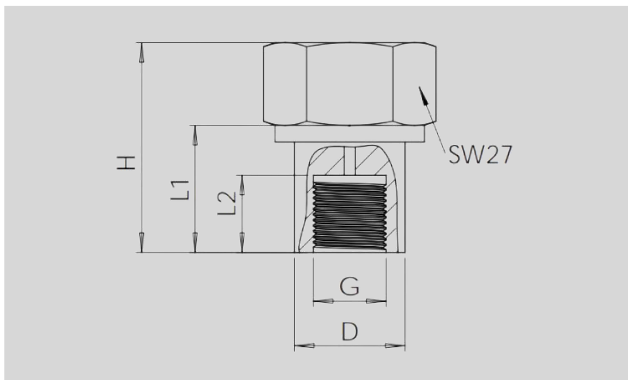
EN837

| G                | H  | L  |
|------------------|----|----|
| G <sub>1/8</sub> | 20 | 10 |
| G <sub>1/4</sub> | 25 | 15 |
| G <sub>3/8</sub> | 26 | 16 |
| G <sub>1/2</sub> | 36 | 23 |
| M20X1.5          | 36 | 23 |



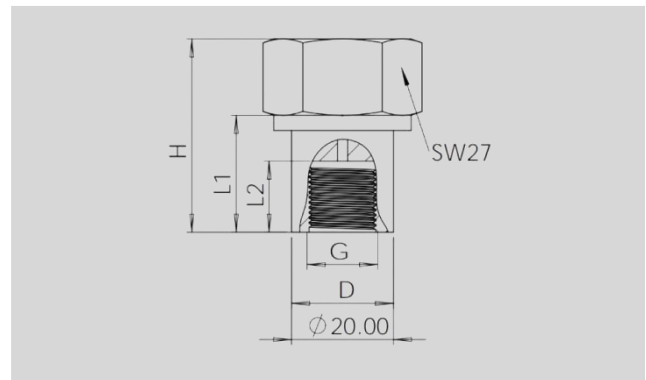
straight thread

| G                | H  | L  |
|------------------|----|----|
| G <sub>1/4</sub> | 28 | 15 |
| G <sub>1/2</sub> | 28 | 15 |
| M14X1.5          | 28 | 15 |
| M20X1.5          | 28 | 15 |



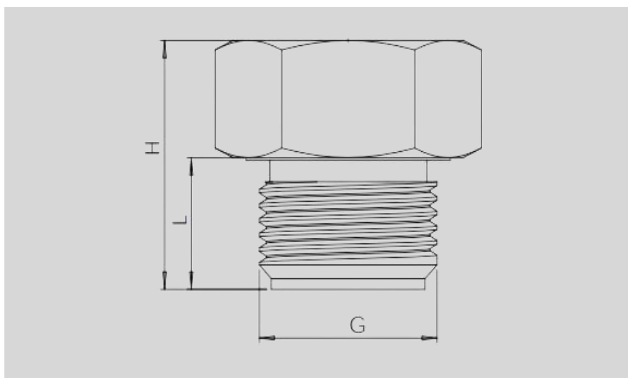
**G female thread**

| G                | H  | L1 | L2 | D   |
|------------------|----|----|----|-----|
| G <sub>1/4</sub> | 38 | 23 | 14 | φ20 |



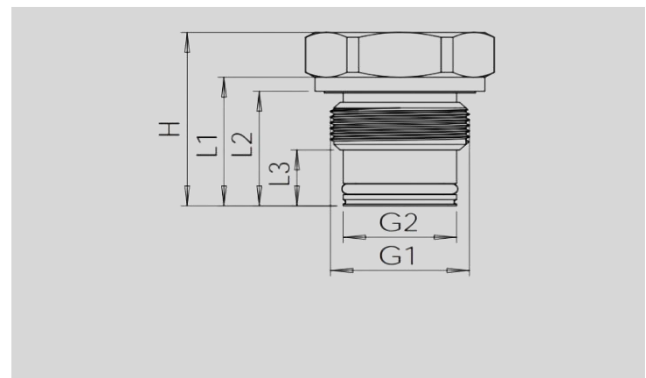
**NPT female thread**

| G                  | H  | L1 | L2 | D   |
|--------------------|----|----|----|-----|
| NPT <sub>1/4</sub> | 38 | 23 | 14 | φ20 |



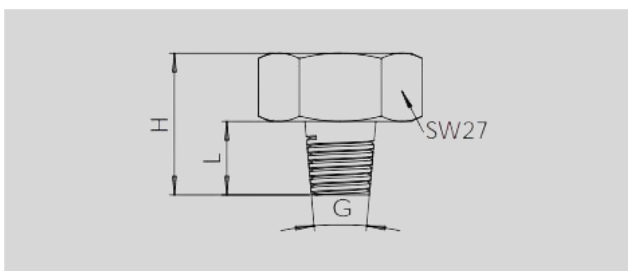
**flush membrane**

| G                | H    | L    | SW |
|------------------|------|------|----|
| G <sub>1/2</sub> | 25.5 | 13.5 | 27 |
| G <sub>1</sub>   | 32.5 | 22.5 | 41 |



**flush membrane front O-ring seal**

| G1               | G2  | H  | L1 | L2 | L3 | SW |
|------------------|-----|----|----|----|----|----|
| G <sub>1/2</sub> | Φ18 | 31 | 23 | 21 | 10 | 27 |
| G <sub>1</sub>   | Φ30 | 31 | 23 | 21 | 10 | 41 |



**taper thread**

| G                  | H  | L  |
|--------------------|----|----|
| NPT <sub>1/8</sub> | 23 | 10 |
| NPT <sub>1/4</sub> | 28 | 15 |
| NPT <sub>1/2</sub> | 34 | 18 |
| R <sub>1/4</sub>   | 27 | 14 |
| R <sub>3/8</sub>   | 28 | 15 |
| R <sub>1/2</sub>   | 32 | 19 |

|                   |    |    |
|-------------------|----|----|
| PT <sub>1/4</sub> | 27 | 14 |
| PT <sub>3/8</sub> | 28 | 15 |
| PT <sub>1/2</sub> | 32 | 19 |

## Order Guide

|        |                                    |                                 |                                           |                       |               |                                      |                     |                |  |  |
|--------|------------------------------------|---------------------------------|-------------------------------------------|-----------------------|---------------|--------------------------------------|---------------------|----------------|--|--|
| SPT21Z | High Accuracy Pressure Transmitter |                                 |                                           |                       |               |                                      |                     |                |  |  |
|        | Range                              | -1...0~0.1...1000bar            |                                           |                       |               |                                      |                     |                |  |  |
|        | [0~X]bar                           | X: the actual measured pressure |                                           |                       |               |                                      |                     |                |  |  |
|        |                                    | Code                            | Output signal                             |                       |               |                                      |                     |                |  |  |
|        |                                    | E                               | 4~20mADC                                  |                       |               |                                      |                     |                |  |  |
|        |                                    | R4                              | 4-20mA with RS485 communication interface |                       |               |                                      |                     |                |  |  |
|        |                                    | H                               | 4-20mA+ HART                              |                       |               |                                      |                     |                |  |  |
|        |                                    |                                 | Code                                      | Construction material |               |                                      |                     |                |  |  |
|        |                                    |                                 |                                           | Diaphragm             | Pressure port |                                      | Housing             |                |  |  |
|        |                                    |                                 | 22                                        | SS316L                | SS304         |                                      | SS304               |                |  |  |
|        |                                    |                                 | 24                                        | SS316L                | SS 316L       |                                      | SS316L              |                |  |  |
|        |                                    |                                 | 35                                        | Tantalum              | Hastelloy C   |                                      | SS304               |                |  |  |
|        |                                    |                                 |                                           | Code                  | Accuracy      |                                      |                     |                |  |  |
|        |                                    |                                 |                                           | 1                     | ±0.05%FS      |                                      |                     |                |  |  |
|        |                                    |                                 |                                           | 2                     | ±0.1%FS       |                                      |                     |                |  |  |
|        |                                    |                                 |                                           | 3                     | ±0.25%FS      |                                      |                     |                |  |  |
|        |                                    |                                 |                                           |                       | Code          | Others                               |                     |                |  |  |
|        |                                    |                                 |                                           |                       | B1            | Hirschmann connectors                |                     |                |  |  |
|        |                                    |                                 |                                           |                       | B2            | Cable connection                     |                     |                |  |  |
|        |                                    |                                 |                                           |                       | i             | Intrinsic Safety type                |                     |                |  |  |
|        |                                    |                                 |                                           |                       | PC1           | Flush diaphragm, M20*1.5 male thread |                     |                |  |  |
|        |                                    |                                 |                                           |                       | PC3           | Flush diaphragm, G1/2 male thread    |                     |                |  |  |
|        |                                    |                                 |                                           |                       |               | C1                                   | M20*1.5 male thread |                |  |  |
|        |                                    |                                 |                                           |                       |               | C2                                   | G1/4 male thread    |                |  |  |
|        |                                    |                                 |                                           |                       |               | C3                                   | G1/2 male thread    |                |  |  |
|        |                                    |                                 |                                           |                       |               |                                      | G                   | Gauge          |  |  |
|        |                                    |                                 |                                           |                       |               |                                      | S                   | Sealed gauge   |  |  |
|        |                                    |                                 |                                           |                       |               |                                      | A                   | Absolute       |  |  |
|        |                                    |                                 |                                           |                       |               |                                      |                     |                |  |  |
| SPT21Z | [0~1bar]                           | E                               | 22                                        | 1                     | B1            | C2                                   | G                   | the whole spec |  |  |

## **Contact**

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@sirelectro.com](mailto:kenny@sirelectro.com)

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