

SIER ELECTRONICS CO., LTD

SPT21D Pressure Transmitter with Local Display

Features

- Reliable, easy maintenance
- Short protection and reverse polarity protection
- Gauge / Absolute / Sealed gauge (optional)
- Compact size
- LCD/LED display optional



Applications

- Industrial automation
- Energy Management
- Environmental monitoring
- Smart city
- Laboratory and Scientific Research

Introduction

SPT21D is piezo-resistive pressure transmitter, using highly stable and reliable pressure sensor and special designed circuit board to convert pressure to current transmitter. This product is used to measure and control process pressure parameter in various industrial segments, such as, Water, Petroleum, Chemical, Electric power, etc.

Specification

Pressure range	-1...0~0.1...1000bar
Over pressure	≤1.5 times FS
Pressure type	Gauge/absolute/sealed gauge optional
Accuracy	see Accuracy definition
Long term stability	≤±0.3%FS/year
Offset thermal drift	0.5%FS/°C(≤1bar); 0.03%FS/°C(>1bar)
Span thermal drift	0.5%FS/°C(≤1bar); 0.03%FS/°C(>1bar)
Compensated temp.	0~50℃ range≤1bar; -10~70℃ range>1bar
Application temp.	-30~80℃
Storage temp.	-40~120℃
Housing protection	IP65 (default) / IP67/68 (customized)
Electrical connection	DIN43650 plug/M12 connector

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

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

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 $5\text{V}\pm 0.1\text{V}$	DC 8~32V
DC 0.5~2.5V	DC $5\text{V}\pm 0.1\text{V}$	DC 8~32V、DC3.3V
DC 0.1~2.1V	DC $5\text{V}\pm 0.1\text{V}$	DC 8~32V、DC3.3V
DC 0.5~4.5V (proportional output)	DC $5\text{V}\pm 0.5\text{V}$	/
RS485	DC 11~28V	DC 5V

Load Resistance(Ω)

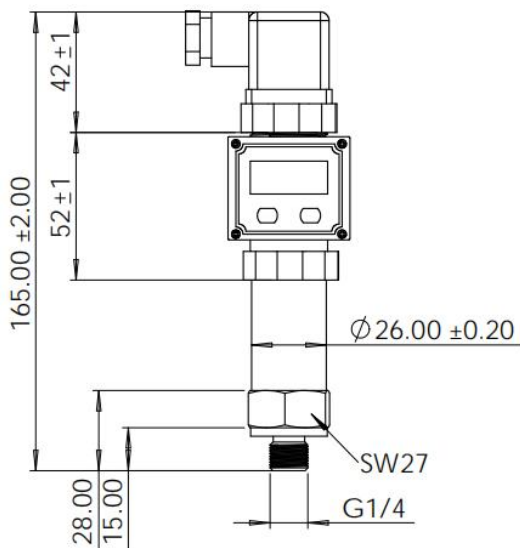
Current outout	$\leq (\text{power supply}-11\text{V}) / 0.02\text{A}$
Voltage output	$\geq 10\text{k}$

Material

Housing	SS304/SS316L
Pressure interface	SS304/SS316L/Hastelloy C/Titanium Alloy
Diaphragm	SS316L/Tantalum
Sealing gasket	NBR (default) / Viton

Outline Dimension(Unit:mm)

Hirschmann 4-pole plug-in type



Electrical Connection

Hirschmann			
		2-wire	3-wire
	U_B	1	1
	0V	2	2
	S+	—	3

Description

U_B : Power +

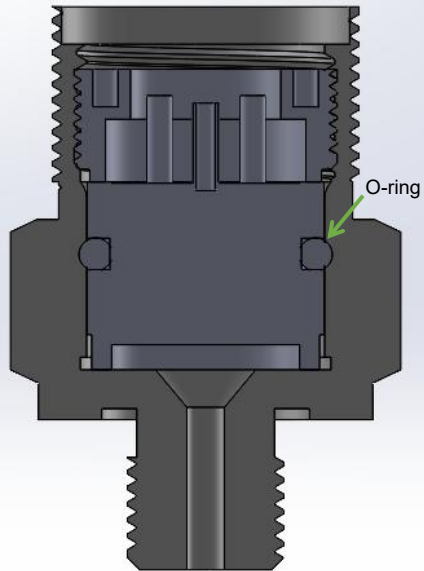
0V : Power -

S+ : Analog output

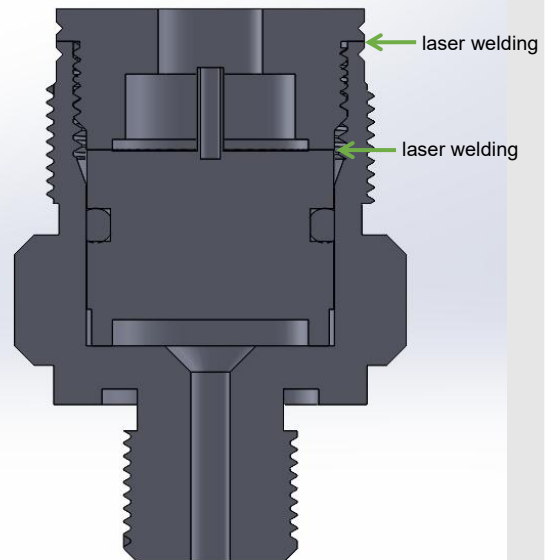
Sensor Sealing

O-ring Sealing

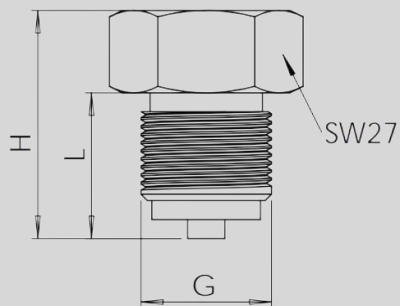
(O-ring material : fluorine rubber, ethylene propylene diene monomer, nitrile rubber)



Soldering

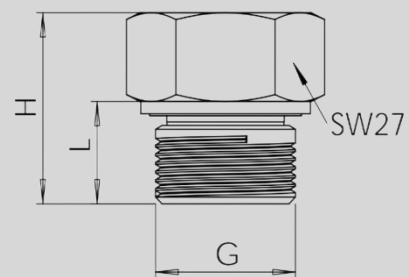


Process connection(Unit:mm)



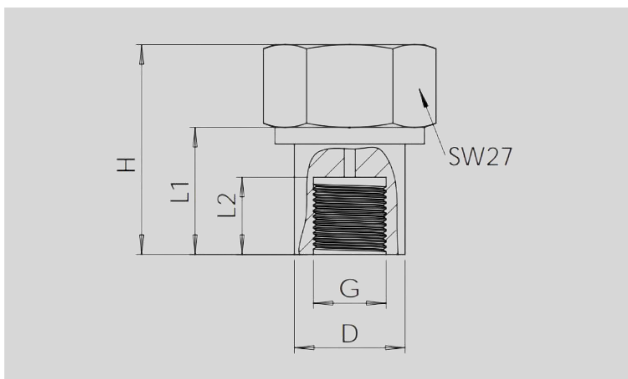
EN837

G	H	L
G _{1/8}	20	10
G _{1/4}	25	15
G _{3/8}	26	16
G _{1/2}	36	23
M20X1.5	36	23



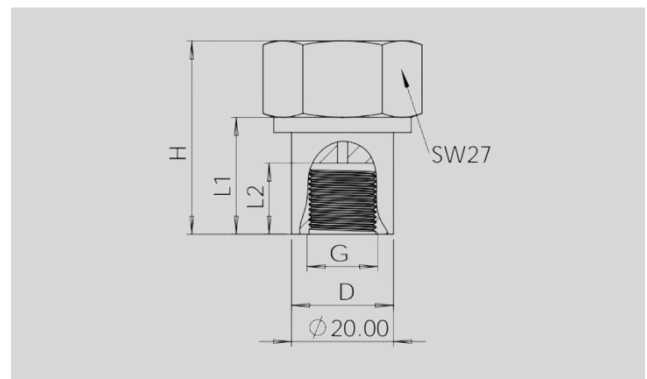
straight thread

G	H	L
G _{1/4}	28	15
G _{1/2}	28	15
M14X1.5	28	15
M20X1.5	28	15



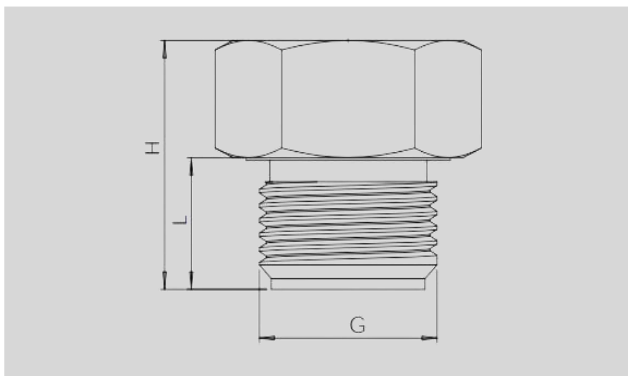
G female thread

G	H	L1	L2	D
G _{1/4}	38	23	14	φ20



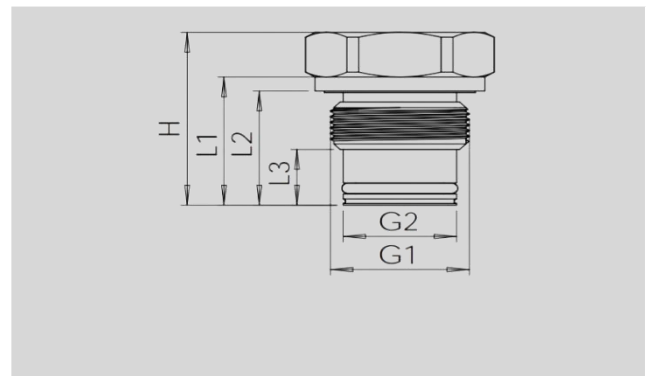
NPT female thread

G	H	L1	L2	D
NPT _{1/4}	38	23	14	φ20



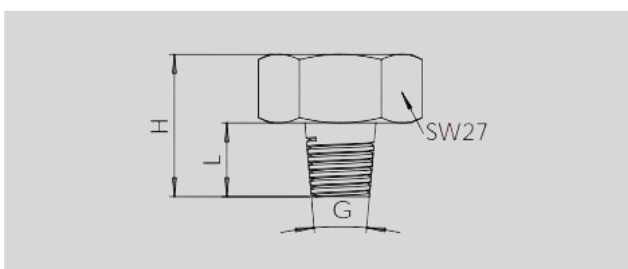
flush membrane

G	H	L	SW
G _{1/2}	25.5	13.5	27
G ₁	32.5	22.5	41



flush membrane front O-ring seal

G1	G2	H	L1	L2	L3	SW
G _{1/2}	Φ18	31	23	21	10	27
G ₁	Φ30	31	23	21	10	41



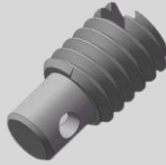
taper thread

G	H	L
NPT _{1/8}	23	10
NPT _{1/4}	28	15
NPT _{1/2}	34	18
R _{1/4}	27	14
R _{3/8}	28	15

SPT21D Pressure Transmitter with Local Display Datasheet

R _{1/2}	32	19
PT _{1/4}	27	14
PT _{3/8}	28	15
PT _{1/2}	32	19

Optional accessories

Name	Shape	Description
Damper		Material : copper or stainless steel Uses : Reduce the effects of cavitation, liquid hammer and pressure peak on the sensor in air or liquid with flow rate changes.
STS01 calibrator		Power supply : 220VAC Features : 4.5-inch LCD screen, touch buttons Functions : testing, calibration, zeroing, range migration, unit conversion   Operating Instructions Operating Video
SPT-LCD display		Display : 4 + 1 / 2 digit display Input : 2-wire 4 ~ 20mA Output : 2-wire 4 ~ 20mA Optional with control function
SPT-LED display		Display : 4 + 1 / 2 digit display Input : 2-wire 4 ~ 20mA Output : 2-wire 4 ~ 20mA Optional with control function

SPT21D Pressure Transmitter with Local Display Datasheet

SD01 loop powered display		Display range -1999~9999 Input: 2-wire 4~20mA Output: 2-wire 4~20mA
M12 plug-in cable		thread M12×0.75

Ordering Code

SPT21D	Pressure Transmitter with local display									
	Range	-1...0~0.1...1000bar								
	[0~X]bar	X: the actual measured pressure								
		Code	Output signal							
		E	4~20mADC+LED Display							
		C	4~20mADC+LCD Display							
			Construction material							
			Code	Diaphragm		Pressure port		Housing		
			22	SS316L		SS304		SS304		
			24	SS316L		SS 316L		SS316L		
				Code	Accuracy					
				1	Accuracy±0.25%FS					
				2	Accuracy±0.5%FS					
				3	Accuracy±0.1%FS					
					Code	Others				
					B1	Hirschmann connectors①				
					B2	Cable connection				
						C2	G1/4 male thread			
						C3	G1/2 male thread			
							G	Gauge		
							S	Sealed gauge		
							A	Absolute		
SPT21D	[0~1bar]	E	22	1	B1	C2	G	the whole spec		

Ordering Notes

1. When '1' in the selection table selects B1 / B3, if you need to lead out the cable, please note in the order ;
2. As for product accuracy, see page 2 'accuracy' ;
3. Product sealing ring material default for fluorine rubber, the minimum use temperature is -20 °C, if the product temperature is < -20 °C, need to be noted in the order temperature range ; other sealing schemes can be used on demand, such as ethylene propylene diene rubber sealing ring, the minimum use temperature is -40 °C ;
4. When ordering 5V DC/3.3V DC power products with cable connection, the cable length should be less than 10m;
5. If accessories is needed, please contact us and specify it in the order;
6. If metrology verification certificate is needed or there are other requirements, please contact us and specify it in the order.

Contact

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