

## Pressure Sensors

Low-cost, Stainless Steel Transducers

*SPT Series*

### FEATURES

- Reliable semiconductor technology
- Calibrated and temperature compensated
- Rugged, stainless steel package
- NEMA 4 design
- Small size
- Absolute, gage, sealed gage, vacuum gage pressures
- 0 psi to 3 psi, 0 psi to 5000 psi

### TYPICAL APPLICATIONS

- Industrial automation and flow control
- Pressure instrumentation
- Hydraulic systems
- Process control



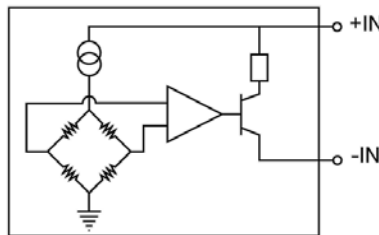
Honeywell's SPT Series stainless steel pressure sensors are designed for pressure applications that involve measurement of hostile media in harsh environments and will accommodate any media that will not adversely attack 304 or 316 stainless steel wetted parts.

The SPT Series is calibrated and compensated for three styles of output: 4.0 mA to 20.0 mA (mA version); 1.0 Vdc to 5.0 Vdc (4 V version); and 0 mV to 100 mV (mV version). All versions feature a variety of pressure connections to allow use in a wide range of OEM (Original Equipment Manufacturer) equipment.

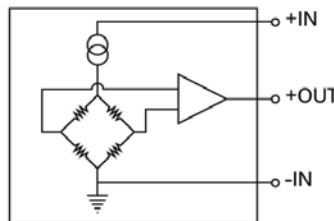
The SPT Series stainless steel devices are rugged and reliable transducers for use in a wide variety of pressure sensing applications where corrosive liquids and gases are monitored.

### EQUIVALENT BASIC CIRCUIT

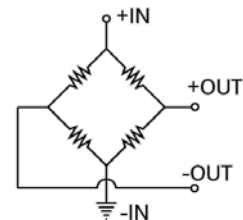
SPT mA



SPT 4V



SPT mV



### ⚠ WARNING

#### PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

### ⚠ WARNING

#### MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

# Pressure Sensors

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## PRESSURE TRANSDUCER CHARACTERISTICS – ALL DEVICES

### Environmental Specifications

Compensated temperature range	-10 °C to 85 °C [14 °F to 185 °F]
Operating temperature range	-40 °C to 85 °C [-40 °F to 185 °F]
Storage temperature range	-40 °C to 85 °C [-40 °F to 185 °F]
Vibration	10 G at 20 Hz to 2000 Hz
Shock	100 G for 11 ms
Life	1 million cycles min.
Insulation resistance	100 MΩ at 50 Vdc

### Recommended Supply Range

SPT mA	Supply voltage $V_s = +10$ Vdc to +24 Vdc
SPT 4V	Supply voltage $V_s = +10$ Vdc to +24 Vdc Quiescent current $I_{QSC} = 5$ mA Short circuit current $I_{SC} = 18$ mA
SPT mV	Supply voltage $V_s = +10$ Vdc

### Maximum Supply Ratings

SPT mV	Supply voltage $V_s = +15$ Vdc
SPT mA and SPT 4V	Supply voltage $V_s = +24$ Vdc

## PRESSURE RANGE SPECIFICATIONS – ALL DEVICES

Catalog Listing*	Pressure range	Proof pressure <sup>(7)</sup>	Burst pressure <sup>(8)</sup>
SPT (mA, mV, 4V) 0003P G (4,5,6,7,9) (B/WXX)	0 psig to 3 psig	9 psig	15 psig
SPT (mA, mV, 4V) 0005P G (4,5,6,7,9) (B/WXX)	0 psig to 5 psig	15 psig	25 psig
SPT (mA, mV, 4V) 0010P G (4,5,6,7,9) (B/WXX)	0 psig to 10 psig	30 psig	50 psig
SPT (mA, mV, 4V) 0015P (A,G,V) (4,5,6,7,9) (B/WXX)	0 psi to 15 psi	45 psi	75 psi
SPT (mA, mV, 4V) 0030P (A,G,V) (4,5,6,7,9) (B/WXX)	0 psi to 30 psi	90 psi	150 psi
SPT (mA, mV, 4V) 0050P (A,G,V) (4,5,6,7,9) (B/WXX)	0 psi to 50 psi	150 psi	250 psi
SPT (mA, mV, 4V) 0100P (A,G,V) (4,5,6,7,9) (B/WXX)	0 psi to 100 psi	300 psi	500 psi
SPT (mA, mV, 4V) 0200P (A,G,V) (4,5,6,7,9) (B/WXX)	0 psi to 200 psi	600 psi	1000 psi
SPT (mA, mV, 4V) 0300P (A,G,V) (4,5,6,7,9) (B/WXX)	0 psi to 300 psi	900 psi	1500 psi
SPT (mA, mV, 4V) 0500P (A,G,V) (4,5,6,7,9) (B/WXX)	0 psi to 500 psi	1200 psi	2400 psi
SPT (mA, mV, 4V) 1000P (A,S) (4,5,6,7) (B/WXX)	0 psi to 1000 psi	3000 psia	5000 psia
SPT (mA, mV, 4V) 2000P (A,S) (4,5,6,7) (B/WXX)	0 psi to 2000 psi	6000 psia	10000 psia
SPT (mA, mV, 4V) 3000P (A,S) (4,5,6,7) (B/WXX)	0 psi to 3000 psi	9000 psia	10000 psia
SPT (mA, mV, 4V) 5000P (A,S) (4,5,6,7) (B/WXX)	0 psi to 5000 psi	10000 psia	10000 psia

\* Note: Vacuum gage units (V option) allow you to pull a hard vacuum on the gage units. Vacuum gage parts are only available on the mV version in 15 psig through 500 psig. As sold, this package design is not submersible. In order to make the package submersible, package needs to be sealed.

### NOTES

7. The maximum pressure that can be applied without changing the transducer's performance or accuracy.
8. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer case.

# Pressure Transducers

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*SPT Series*

## PERFORMANCE CHARACTERISTICS <sup>(1)</sup>

SPT mV Series	Minimum	Typical	Maximum	Unit
Zero pressure offset	-2	0	+2	mV
Full-scale span (0 psig to 3 psig and 0 psig-5 psig only) <sup>(2)</sup>	48	50	52	mV
Full-scale span (0 psi to 10 psi and 0 psi to 3000 psi only) <sup>(2)</sup>	98	100	102	mV
Full-scale span (0 psi to 5000 psi only) <sup>(2)</sup>	148	150	152	mV
Pressure non-linearity <sup>(3)</sup>	–	±0.1	±0.25	%FSS
Pressure hysteresis <sup>(3)</sup>	–	±0.015	±0.030	%FSS
Repeatability	–	±0.010	±0.030	%FSS
Temp. effect on span <sup>(4)</sup>	–	±0.5	±1.0	%FSS
Temp. effect on offset <sup>(4)</sup>	–	±0.5	±1.0	%FSS
Temp. effect on span (0 psi to 3 psi and 0 psi to 5 psi only) <sup>(4)</sup>	–	±1	±2.0	%FSS
Temp. effect on offset (0 psi to 3 psi and 0 psi to 5 psi only) <sup>(4)</sup>	–	±1	±2.0	%FSS
Thermal hysteresis (-10 °C to 85 °C [14 °F to 185 °F])	–	±0.1	±0.3	%FSS
Long-term stability of offset and span <sup>(5)</sup>	–	±0.1	±0.3	%FSS
Response time <sup>(6)</sup>	–	0.1	–	ms
Common mode voltage (voltage version “K”) <sup>(9)</sup>	0.5	1.25	2.0	Vdc
Input resistance	8.0	25	50	kΩ
Output resistance	3.0	4.5	6.0	kΩ
<b>SPT mA Series</b>				
Zero pressure offset	3.84	4.0	4.16	mA
Full-scale span <sup>(2)</sup>	15.84	16.0	16.16	mA
Pressure non-linearity <sup>(3)</sup>	–	±0.1	±0.25	%FSS
Pressure hysteresis <sup>(3)</sup>	–	±0.015	±0.03	%FSS
Repeatability	–	±0.010	±0.030	%FSS
Temp. effect on span <sup>(4)</sup>	–	±0.5	±1.5	%FSS
Temp. effect on offset <sup>(4)</sup>	–	±0.5	±1.5	%FSS
Temp. effect on span (0 psi to 3 psi and 0 psi to 5 psi only) <sup>(4)</sup>	–	±1.5	±2.5	%FSS
Temp. effect on offset (0 psi to 3 psi and 0 psi to 5 psi only) <sup>(4)</sup>	–	±1.5	±2.5	%FSS
Thermal hysteresis -10 °C to 85 °C [14 °F to 185 °F]	–	±0.1	±0.3	%FSS
Long term stability of offset and span <sup>(5)</sup>	–	±0.1	±0.3	%FSS
Response time <sup>(6)</sup>	–	5	–	ms
<b>SPT 4V Series</b>				
Zero pressure offset	0.96	1.0	1.04	V
Full-scale span <sup>(2)</sup>	3.96	4.0	4.04	V
Pressure non-linearity <sup>(3)</sup>	–	±0.1	±0.25	%FSS
Pressure hysteresis <sup>(3)</sup>	–	±0.015	±0.03	%FSS
Repeatability	–	±0.010	±0.030	%FSS
Temp. effect on span <sup>(4)</sup>	–	±0.5	±1.5	%FSS
Temp. effect on offset <sup>(4)</sup>	–	±0.5	±1.5	%FSS
Temp. effect on span (0 psi to 3 psi and 0 psi to 5 psi only) <sup>(4)</sup>	–	±1.5	±2.5	%FSS
Temp. effect on offset (0 psi to 3 psi and 0 psi to 5 psi only) <sup>(4)</sup>	–	±1.5	±2.5	%FSS
Thermal hysteresis -10 °C to 85 °C [14 °F to 185 °F]	–	±0.1	±0.3	%FSS
Long term stability of offset and span <sup>(5)</sup>	–	±0.1	±0.3	%FSS
Response time <sup>(6)</sup>	–	5	–	ms

## NOTES

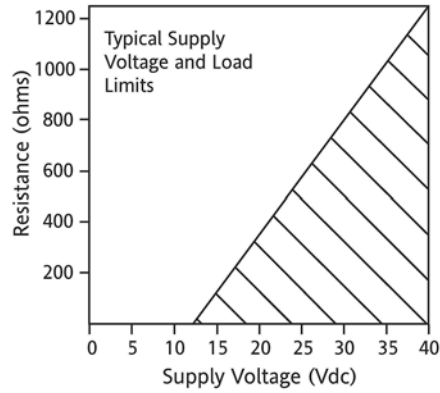
- Reference conditions (unless otherwise noted):  $T_a = 25\text{ °C}$  [77 °F]; Supply  $V_s = 24\text{ Vdc} \pm 0.01\text{ Vdc}$ .
- Full-scale span (FSS) is the algebraic difference between the output voltage at full-scale positive pressure and the output at zero pressure. FSS is ratiometric to the supply voltage.
- Pressure non-linearity is based on best-fit straight line from zero to the full-scale pressure. Pressure hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.
- Maximum error band of the offset voltage or span over the compensated temperature range, relative to the 25 °C [77 °F] reading.
- Long-term stability over a six-month period.
- Response time for a 0 psi to FSS pressure step change, 10 % to 90 % rise time.
- Common mode voltage as measure from output to ground.

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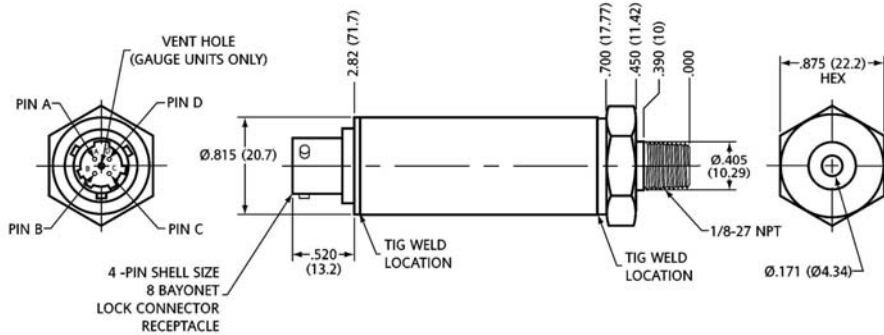
## SPT mA SERIES EXTERNAL LOAD LINE



PHYSICAL DIMENSIONS for reference only, in (mm)

### PACKAGE 4: 1/8 NPT Port

#### VERSION B (Bayonet Connector)



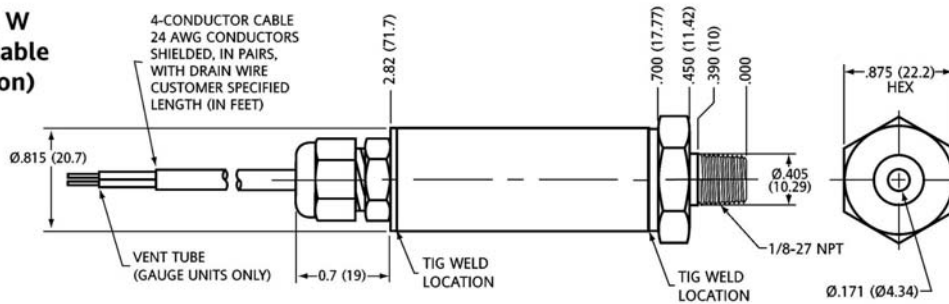
**THE FOLLOWING TABLES APPLY TO ALL DRAWINGS**

PIN DESIGNATIONS			
PIN LTR	mA	4V	mV
A	+IN	+IN	+IN
B	N/C	+OUT	+OUT
C	N/C	N/C	-OUT
D	-IN	-IN	-IN

WIRE CODE			
Color	mA	4V	mV
RED	+IN	+IN	+IN
BLACK	-IN	-IN	-IN
GREEN	N/C	+OUT	+OUT
WHITE	N/C	N/C	-OUT
BARE	SHIELD	SHIELD	SHIELD

#### VERSION W (Pigtail Cable Connection)



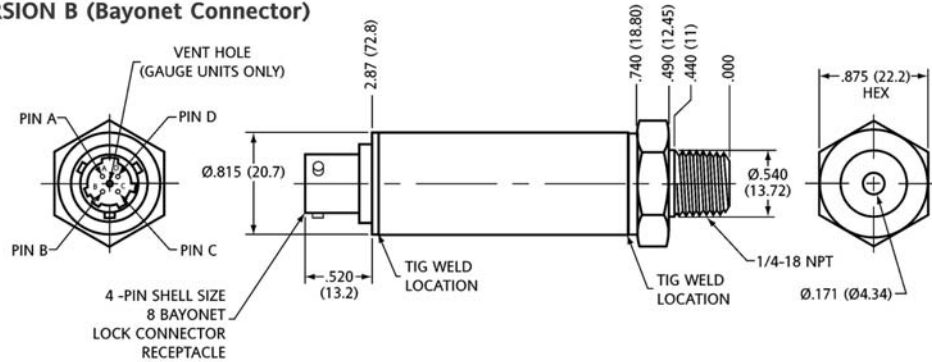
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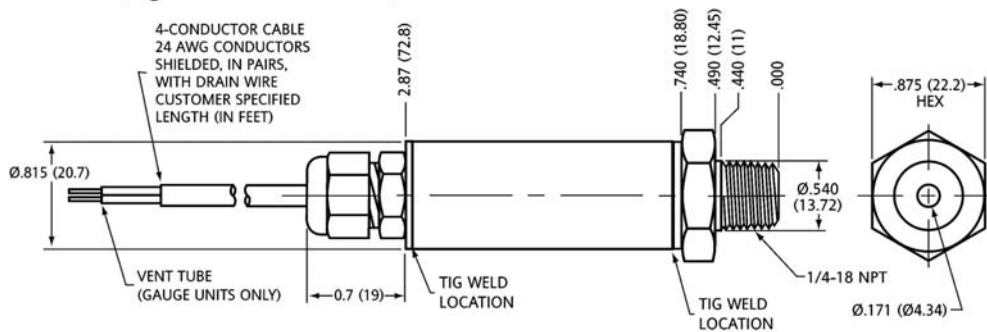
*SPT Series*

## Package 4: 1/4 NPT Port

### VERSION B (Bayonet Connector)

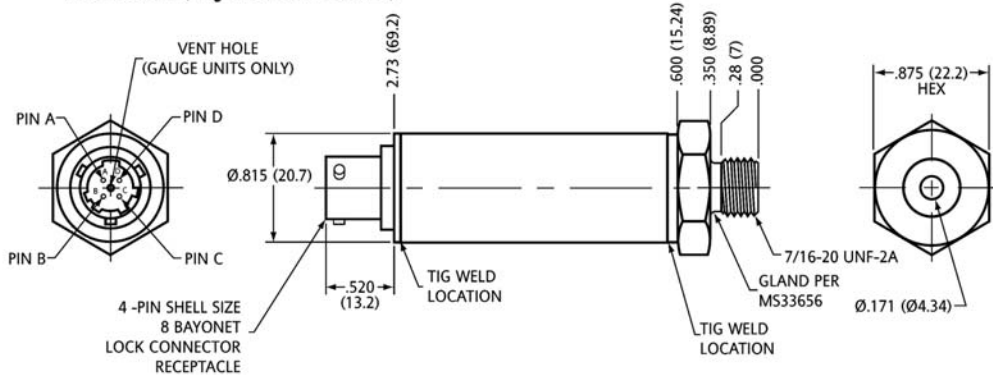


### VERSION W (Pigtail Cable Connection)

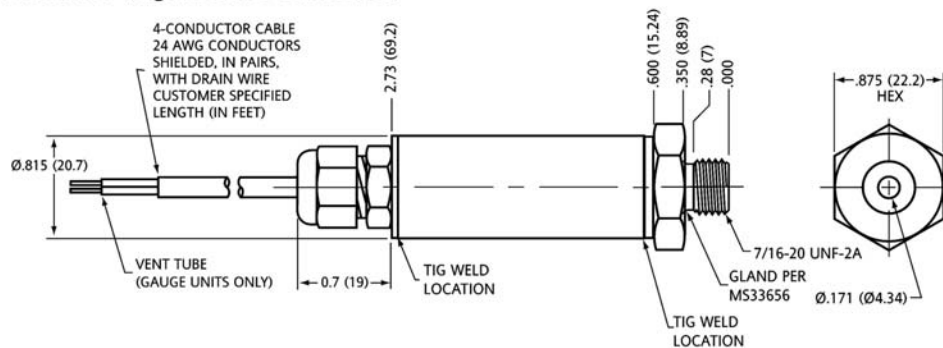


## PACKAGE 6: 7/16-20 UNF Port

### VERSION B (Bayonet Connector)



### VERSION W (Pigtail Cable Connection)





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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