

PPT76 Low-Cost Automotive Pressure Transducer

Stainless steel 0.5–4.5 V pressure transducer · 30 to 3000 PSI



SS316L

IP67

0.5–4.5 V

DESCRIPTION

The PPT76 is a low-cost pressure transducer built for automotive oil and other demanding OEM applications. A stainless steel SS316L housing and IP67 rating suit it to engine-bay environments from -25 to 125 °C.

A conditioned 0.5–4.5 V output, reverse polarity protection and an integrated 3-pin connector mating to Aptiv 12110192 make it simple to integrate. Choose from three standard pressure ports or a custom port. Contact us for custom designs.

FEATURES

- -25 to 125 °C operating temperature
- $\pm 0.5\%$ FS total error band
- $\pm 0.25\%$ Linearity
- Analog 0.5–4.5 V output
- 4.5 to 5.5 V supply
- Reverse polarity protection
- 30 to 3000 PSI ranges
- Absolute, gauge or sealed gauge
- 1/4" NPT, 1/8" NPT or 7/16–20 UNF port
- SS316L housing · IP67 rated

APPLICATIONS

- Automotive engine / oil
- Industrial automation
- HVAC
- Compressors
- Pneumatics
- Consumer products

MAXIMUM ENVIRONMENTAL RATINGS

Operating Temperature	-25 to 125 °C	Proof Pressure	1.5× Full Scale
Compensated Temperature	0 to 85 °C	Burst Pressure	3× Full Scale

Operational characteristics

V+ = 5 V, V- = 0 V, T = 25 °C unless noted

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS
Supply voltage	V _{DD}	4.5	5.0	5.5	V
Output voltage	V _{OUT}	0.5	—	4.5	V
Pressure range	—	−11.5	—	XX (note 1)	PSI
Total error band (note 2)	TEB	−0.5	—	0.5	%FS
Linearity	NL	−0.25	—	0.25	%FS
Compensated temperature	T _c	0	—	85	°C
Operating temperature	T _{OP}	−25	—	125	°C
Proof pressure	—	1.5× Full Scale			—
Burst pressure	—	3× Full Scale (Max 6,000PSI)			—
Environmental rating	—	IP67			—
Housing material	—	SS316L			—

NOTES

1) XX = full-scale pressure from the part number, 30 to 3000 PSI. 2) Total error band over the compensated temperature range, 0 to 85 °C.

Electrical connections

P#	FUNCTION
P1	GND
P2	VCC
P3	OUT

Reverse polarity protection.

Mating connector

Aptiv	12110192
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Connector pinout

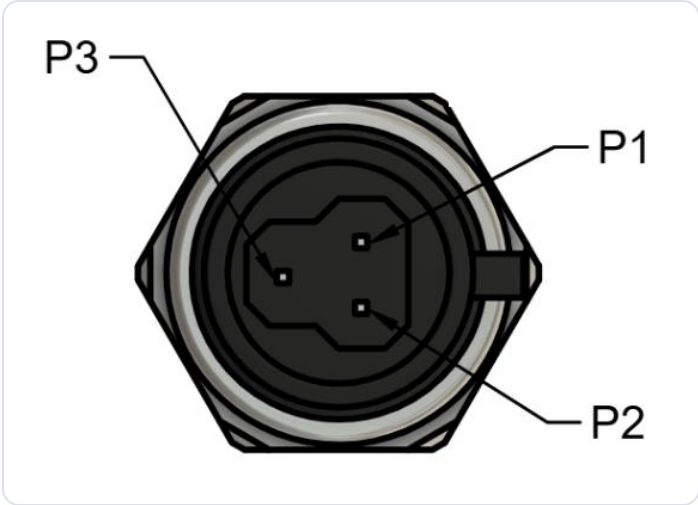


Fig. 1 – Connector face, pins P1-P3.

Application information

Package

A compact stainless steel SS316L housing with a 0.874 in hex and an overall length of 2 in. The integrated 3-pin connector mates with Aptiv 12110192.

Pressure types

Available as absolute (A), gauge (G) or sealed gauge (S), selected by the part number.

Protection

Reverse polarity protection on the supply input and an IP67 environmental rating.

Pressure ports

Standard ports are 1/4"-18 NPT, 1/8"-27 NPT and 7/16-20 UNF-3A. The 7/16-20 UNF port seals with an O-ring. Custom ports are available for OEM customers.

Pressure ranges

Full-scale ranges from 30 PSI to 3000 PSI, set by the XX field of the part number.

Marking

Each sensor is laser marked with its part number and a WWYY date code (WW = week, YY = year).

7/16-20 UNF port and O-ring

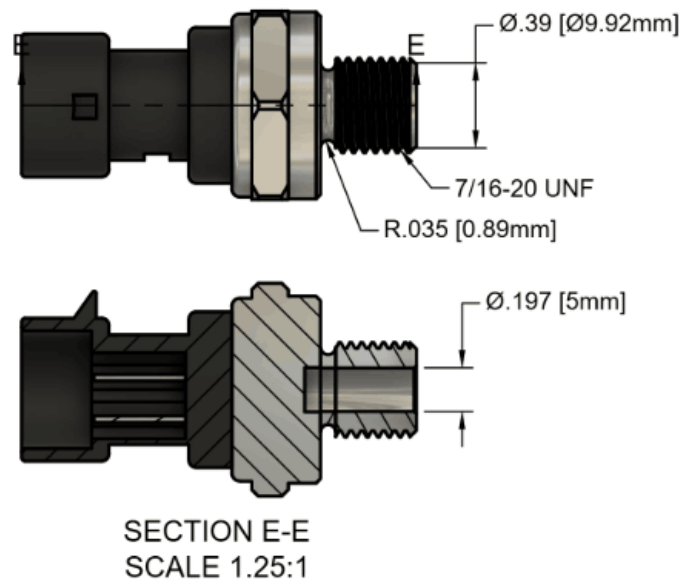


Fig. 2 – 7/16-20 UNF port (section E-E) and O-ring (section B-B). The O-ring is used on the 7/16 port only.

±0.5%

Total error band FS

125 °C

Max operating temp

3000 PSI

Max range

IP67

Environmental rating

Analog output

The PPT76 provides a conditioned analog voltage on P3 (OUT), from 0.5 V at zero pressure to 4.5 V at full scale with a 5 V supply.

Transfer function ($V_{DD} = 5\text{ V}$)

$$V_{OUT} = 0.5\text{ V} + 4.0\text{ V} \times P / P_{FS}$$

P is applied pressure and P_{FS} is the full-scale range from the part number (30 to 3000 PSI).

Pressure from output

$$P = P_{FS} \times (V_{OUT} - 0.5\text{ V}) / 4.0\text{ V}$$

Hookup

PIN · FUNCTION	CONNECT TO
P1 · GND	Supply - / ground
P2 · VCC	Supply + (4.5–5.5 V)
P3 · OUT	ADC or meter input

Typical output at $V_{DD} = 5\text{ V}$

% OF FS	150 PSI	3000 PSI	V_{OUT}
0%	0	0	0.50 V
25%	37.5	750	1.50 V
50%	75	1500	2.50 V
75%	112.5	2250	3.50 V
100%	150	3000	4.50 V

Ideal values; actual output is within the total error band.

DESIGN NOTES

Mate with Aptiv 12110192. The supply input is reverse polarity protected.

Mechanical dimensions – mm [inches]

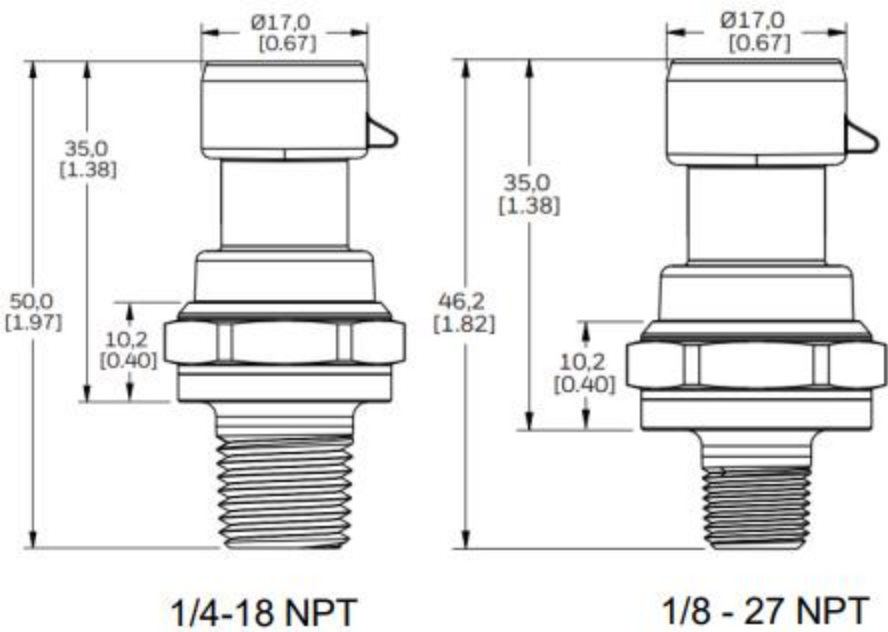


Fig. 3 – 1/4"-18 NPT and 1/8"-27 NPT versions.

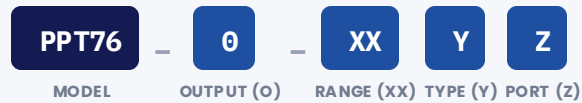
Key dimensions

FEATURE	1/4-18 NPT	1/8-27 NPT
Overall length	50.0 [1.97]	46.2 [1.82]
Connector diameter	Ø 17.0 [0.67]	Ø 17.0 [0.67]
Top to hex	35.0 [1.38]	35.0 [1.38]
Hex height	10.2 [0.40]	10.2 [0.40]

Construction

Housing	SS316L
Connector	3-pin; mates Aptiv 12110192
Marking	Laser: PPT76-0-XXYZ, WWYY

Ordering information — part-number configuration



OUTPUT (O)		RANGE (XX)		TYPE (Y)		PORT (Z)	
0	0.5 to 4.5 V	30	30 PSI	A	Absolute	1	1/4" NPT
		...	...	G	Gauge	2	1/8" NPT
		3K	3000 PSI	S	Sealed gauge	3	7/16-20 UNF-3A
						4	Custom

Proof pressure is 1.5× and burst pressure 3× the selected full-scale range.

EXAMPLE

PPT76-0-150G1 → 0.5-4.5 V output • 0-150 PSI • gauge • 1/4" NPT

Configure your PPT76

Custom ports and ranges are available for OEM volumes. Talk to an engineer to spec your part.

REQUEST A QUOTE

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