

PPT77 Combination Pressure & Temperature Transducer

Analog pressure sensing with an integrated RTD temperature element — two measurements, one port



FEATURES

- Simultaneous pressure & temperature output in one device
- Integrated platinum RTD: PT100 or PT1000, Class B
- Analog outputs: 0.5–4.5V, 0–5V, 0–10V
- Pressure ranges from 150 PSI to 5,000 PSI
- Absolute & Sealed Gauge references
- $\pm 1.0\%$ FS total error band · ± 0.3 °C temperature accuracy
- All-welded SS316L wetted housing & port
- 1/4–18 NPT process connection · IP65 rated

DESCRIPTION

The PPT77 combines analog pressure sensing and an integrated platinum RTD temperature element in a single, compact SS316L transducer — delivering both process measurements from one 1/4–18 NPT port. Pressure is reported on a selectable analog voltage output (0.5–4.5V, 0–5V, or 0–10V) while temperature is available as an independent PT100 or PT1000 RTD signal.

With ranges from 150 to 5,000 PSI in absolute or sealed-gauge references and a $\pm 1.0\%$ FS total error band, the PPT77 is engineered for OEM systems that need pressure and temperature together without adding a second fitting or penetration.

APPLICATIONS

- Industrial equipment & automation
- Hydraulic & pneumatic systems
- HVAC, refrigeration & compressors
- Pumps & fluid power
- Combined gas/fluid pressure & temperature monitoring
- General OEM integration

MAXIMUM ENVIRONMENTAL RATINGS

Operating Temperature	-20 to 125 °C · -4–257 °F	Proof Pressure	1.25× full scale
Temperature Accuracy	± 0.3 °C	Burst Pressure	1.5× full scale
Ingress Protection	IP65	Pressure Range	150 to 5,000 PSI

Pressure & temperature specifications

PARAMETER	MIN	TYP	MAX	UNITS
Pressure output — Option 0	0.5	—	4.5	V
Pressure output — Option 1	0	—	5	V
Pressure output — Option 2	0	—	10	V
Total Error Band	-1.0	—	+1.0	%FS
Linearity	-0.25	—	+0.25	%FS
Operating Temperature	-20	—	125	°C
Temperature Error (RTD)	-0.3	—	+0.3	°C
Temperature Element	—	PT100 / PT1000	—	RTD
Proof Pressure	—	—	1.25× FS	—
Burst Pressure	—	—	1.5× FS	—
Pressure Range	150	—	5,000	PSI

Supply voltage is set by the selected output option (ratiometric 5 VDC for 0.5–4.5V / 0–5V; regulated supply above 10 V for the 0–10V option). Consult factory for exact supply window.

Electrical connections

WIRE COLOR	FUNCTION
Red	V+ (supply)
White	OUT (pressure output)
Black	GND
Yellow	RTD
Green	RTD

Notes: 1) Pressure output is 3-wire (red / white / black). 2) The RTD is a 2-wire platinum element (yellow / green), electrically isolated from the pressure output. 3) Leads are tinned copper with heat-shrink strain relief.

Integrated RTD element — PT100 & PT1000

The PPT77 integrates a Class B platinum resistance temperature detector (RTD) that measures process temperature at the same wetted port as the pressure element. The RTD output is a passive, ratiometric resistance signal — independent of and electrically isolated from the pressure output — and follows the standard IEC 60751 platinum characteristic, so it drops directly into existing PT100 / PT1000 instrumentation.

RTD element options

PARAMETER	PT100	PT1000
Nominal R at 0 °C	100 Ω	1000 Ω
Temp. coefficient (α)	0.00385	0.00385
Tolerance class	Class B	Class B
Standard	IEC 60751	IEC 60751
Order code	0	1

CLASS B ACCURACY (IEC 60751)

Tolerance: $\pm(0.30 + 0.005 \cdot |t|)$ °C
 = ±0.30 °C at 0 °C · ±0.55 °C at 50 °C
 = ±0.925 °C at 125 °C
 2-wire connection (yellow / green leads)

Resistance vs. temperature reference

TEMP (°C)	PT100 (Ω)	PT1000 (Ω)
-20	92.16	921.6
0	100.00	1000.0
25	109.73	1097.3
50	119.40	1194.0
75	128.99	1289.9
100	138.51	1385.1
125	147.95	1479.5

Nominal values per IEC 60751 ($\alpha = 0.00385$). Convert resistance to temperature in the host controller or transmitter using the standard Callendar-Van Dusen coefficients.

2-in-1

Pressure + temperature

±0.3 °C

Temp. error at 0 °C

100/1K Ω

PT100 / PT1000

IEC 60751

Class B standard

Package, media & installation

Package

A compact, all-welded SS316L transducer optimized for OEM integration. Exits to a tinned flying-lead cable with heat-shrink strain relief; laser-marked with logo, part number, and MMYSSSS date/serial code. Nominal weight $\approx$ 1.5 oz.

Pressure port

Standard process connection is 1/4-18 NPT. Additional custom fittings are available to meet OEM requirements — consult factory.

Wetted parts

Housing and pressure port are stainless steel SS316L. The all-welded wetted path uses no elastomer seal, giving broad media compatibility for demanding environments.

Stability

A media-isolated piezoresistive sensing element paired with an integrated platinum RTD. The stainless construction minimizes mechanical stress on the element for stable output across pressure and temperature cycling. Factory calibrated and compensated.

Media

Compatible with oil, air, gas, water, and industrial fluids compatible with 316L stainless steel. Verify compatibility for specific or aggressive media against the wetted materials.

Pressure ranges

150 PSI to 5,000 PSI, available in Absolute (A) and Sealed Gauge (S) references. Custom pressure ranges are available for OEM applications.

$\pm 1.0\%$

Total error band FS

5,000

Max range PSI

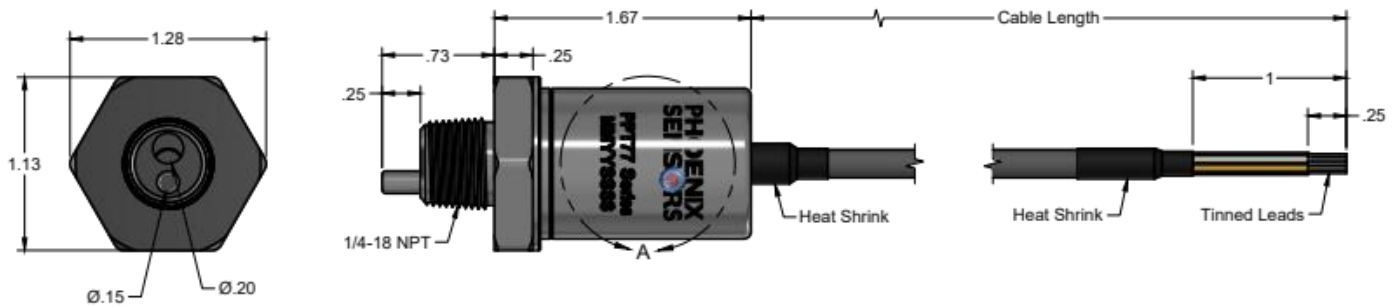
125 °C

Max operating temp

SS316L

All-welded wetted path

Outline drawing — inches



FEATURE	DETAIL
Housing / port material	Stainless steel SS316L
Process connection	1/4-18 NPT
Electrical interface	Tinned flying leads (5-conductor)
Cable length	1FT to 10FT
Weight	≈ 1.5 oz

NOTES

- 1) Dimensions in inches; tolerances X.X ± 0.15 , X.XX ± 0.010 , X.XXX ± 0.005 .
- 2) Cable exits through a heat-shrink strain relief to tinned leads.
- 3) Laser marking: logo, part number, and MMYSSSS date/serial code.
- 4) Consult factory for tolerances not shown and custom cable lengths.

Part-number configuration

PPT77

-

0

-

150

A

1

1

-

1FT

MODEL OUTPUT RANGE TYPE CONN RTD CABLE

Concatenated: PPT77-0-150A11-1FT

Model	Output	Range (PSI)	Type	Connection	Temp Sensor	Cable
PPT77	0 = 0.5-4.5V 1 = 0-5V 2 = 0-10V	150 PSI to 5K PSI (150, 300, 500, 1K, 3K, 5K)	A = Absolute S = Sealed Gauge	1 = 1/4 NPT	0 = PT100, Class B 1 = PT1000, Class B	1FT ... 10FT flying leads

EXAMPLE PART NUMBERS

PPT77-0-150A11-1FT → 0.5-4.5V · 150 PSI absolute · 1/4 NPT · PT1000 Class B · 1 ft cable

PPT77-2-3KS10-5FT → 0-10V · 3,000 PSI sealed gauge · 1/4 NPT · PT100 Class B · 5 ft cable

Configure your PPT77

Custom pressure ranges, fittings, and cable lengths available for OEM volumes. Talk to an engineer to spec your part.

REQUEST A QUOTE

sales@phoenixsensors.com

(480) 462-1810

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