PPT79 Hermetically Sealed mV Temp Compensated Pressure Transducer

All-welded SS316L · temperature-compensated mV/V bridge output · 100 to 10,000 PSI



HERMETIC SS316L MV/V

FEATURES

- Hermetically sealed, all-welded SS316L construction
- Temperature-compensated Wheatstone bridge output
- 3 mV/V or 10 mV/V sensitivity
- ±0.25% FS (linearity, hysteresis, repeatability)
- 10 VDC excitation; 2.7–5.5 VDC low-voltage option
- Ranges from 100 to 10,000 PSI, gauge or absolute
- Operation from -54 to 150 °C (extended versions)
- Hermetic 6-pin bayonet receptacle or PTFE cable
- Optional internal shunt-calibration resistor

DESCRIPTION

The PPT79 is a hermetically sealed, millivolt-output pressure transducer for applications where the sensing electronics must be fully protected from the environment. The cap, housing and port are welded into a single SS316L assembly with a hermetic connector — no elastomer seals between the media, the atmosphere and the bridge.

A temperature-compensated piezoresistive bridge provides a ratiometric mV/V signal for direct connection to strain-gauge amplifiers, data acquisition and test systems. Configurations are built to customer drawing; contact us for ranges, ports and shunt-cal options.

APPLICATIONS

- Mil/Aero
- Test & measurement
- Data acquisition systems
- Hydraulic & fuel systems
- Harsh / washdown environments
- Industrial OEM

MAXIMUM ENVIRONMENTAL RATINGS

Operating Temperature	**-40 to 125 °C (std)**	Extended Operating	**-54 to 150 °C**
Compensated Temperature	**-10 to 80 °C (std)**	Construction	**Hermetic, all-welded SS316L**

Operational characteristics

V_{EX} = 10.0 VDC, T = 25 °C unless noted

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS
Excitation voltage — standard	V_{EX}	9.9	10.0	10.1	VDC
Excitation voltage — low-voltage option	V_{EX}	2.7	—	5.5	VDC
Sensitivity	S		3 or 10 (per configuration)		mV/V
Full-scale output — 10 mV/V at 10 V	V_{FS}	—	100	—	mV
Full-scale output — 3 mV/V at 10 V	V_{FS}	—	30	—	mV
Accuracy — L + H + R, standard	±%FS	—	—	0.25	%FS
Accuracy — miniature / low-voltage	±%FS	—	—	1.0	%FS
Compensated temperature — standard	T_C	−10	—	80	°C
Compensated temperature — extended	T_C	−18	—	66	°C
Operating temperature — standard	T_{OP}	−40	—	125	°C
Operating temperature — extended	T_{OP}	−54	—	150	°C
Pressure range	—	100	—	10,000	PSI
Wetted / housing material	—		SS316L, welded		—

NOTES

Values per PPT79 configuration drawings PPT79-0-300G31-VV (rev D), PPT79-0-XXXG31-ADD (rev 1.1) and PPT79-2-3KA62-P4. Proof and burst pressure are specified per configuration — consult factory.

Electrical connections

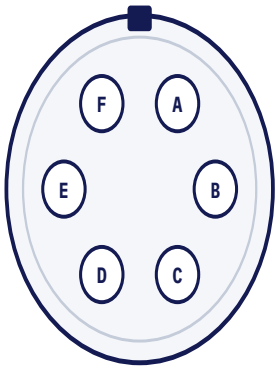
PIN	FUNCTION
A	+ Output (signal +)
B	− Output (signal −)
C	− Excitation
D	+ Excitation
E / F	N/C (shunt-cal on request)

Amphenol PTIH-10-6P hermetic 6-pin bayonet receptacle (MIL-DTL-26482 style).

Cable version — 4-conductor PTFE, 26 AWG

Red	+ Excitation
Black	+ Output
White	− Output
Yellow	− Excitation

Pin configuration



MATING FACE VIEW · KEY AT TOP

A + Output (signal +)

B − Output (signal −)

C − Excitation

D + Excitation

E N/C (shunt-cal on request)

F N/C (shunt-cal on request)

Fig. 1 — Receptacle face, pins A–F. Pin assignment can vary by customer drawing.

Application information

Hermetic package

Cap, housing and pressure port are welded SS316L. The hermetic glass-to-metal receptacle completes a sealed enclosure that resists humidity, washdown and condensation.

Bridge output

A four-arm piezoresistive Wheatstone bridge, passively temperature compensated. The output is ratiometric to excitation; use a regulated supply or ratiometric measurement.

Pressure ports

1/4"-18 NPT (male or female) and 5/16-24 UNF-3A are established; other fittings to customer drawing.

Media

Liquids and gases compatible with SS316L, including hydraulic fluid, fuel, oil, water and air.

Shunt calibration

An internal shunt-calibration resistor can be wired to spare pins for system verification.

Marking

Laser marked with part number and MMYYZZZZ date / serial code.





±0.25%	150 °C	10K PSI	Hermetic
Accuracy FS	Max operating (ext.)	Max range	All-welded SS316L

Millivolt bridge output

The PPT79 output is a differential millivolt signal across +OUT and -OUT, proportional to both applied pressure and excitation voltage.

Transfer function

$$V_{OUT} = S \times V_{EX} \times P \; / \; P_{FS} + V_{OS}$$

S = sensitivity (mV/V), V_{EX} = excitation, V_{OS} = zero offset reported on the test sheet.

Pressure from output

$$P = P_{FS} \times (V_{OUT} - V_{OS}) \; / \; (S \times V_{EX})$$

Hookup

PIN · FUNCTION	CONNECT TO
D · + EXC	Excitation supply +
C · – EXC	Excitation supply –
A · + OUT	Amplifier / DAQ input +
B · – OUT	Amplifier / DAQ input –

Ideal span output (offset removed)

% OF FS	3 MV/V · 10 V	10 MV/V · 10 V	10 MV/V · 5 V
0%	0 mV	0 mV	0 mV
25%	7.5 mV	25 mV	12.5 mV
50%	15 mV	50 mV	25 mV
75%	22.5 mV	75 mV	37.5 mV
100%	30 mV	100 mV	50 mV

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

DESIGN NOTES

Use a differential, high-impedance input (instrumentation amplifier or bridge DAQ). Remote-sense the excitation on long cable runs. Do not connect either output to ground.

Mechanical dimensions — inches [mm]

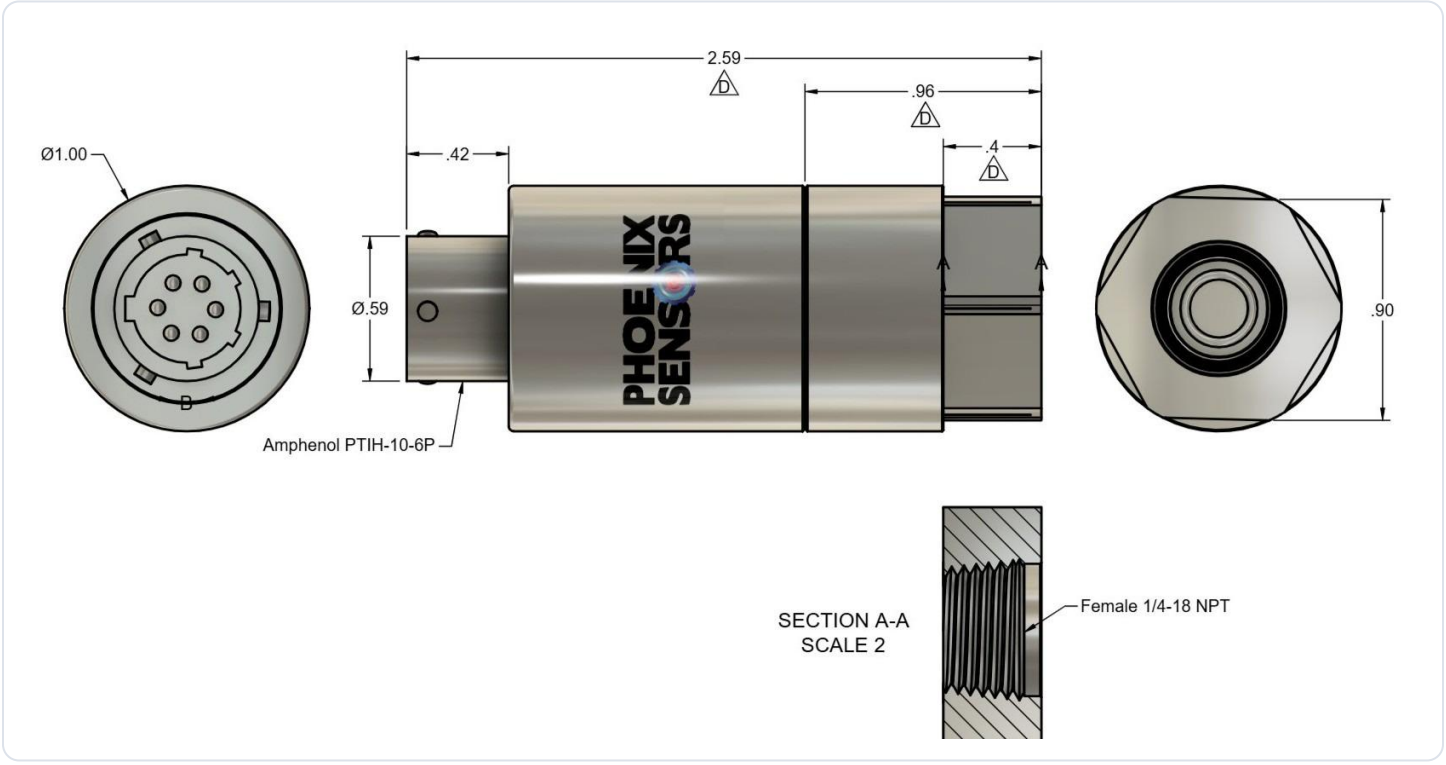


Fig. 2 — PPT79 outline with PTIH-10-6P receptacle (PPT79-0-300G31-VV rev D).

Key dimensions

FEATURE	STANDARD	MINIATURE
Housing diameter	Ø1.00 [25.4]	Ø0.53 [13.5]
Overall length	2.59 [65.8]	per drawing
Hex	0.90 [22.9]	—
Port	1/4"-18 NPT	5/16-24 UNF-3A
Electrical	PTIH-10-6P	PTFE cable

Construction

Housing / port	SS316L, welded
Seal	Hermetic — no elastomers
Receptacle	Amphenol PTIH-10-6P
Marking	Laser: P/N, MMYYZZZZ

Ordering information — part-number configuration

PPT79	–	0	–	300	G	3	1	–	XX
MODEL		EXCITATION		RANGE	TYPE	PORT	ELECTRICAL		CONFIG.

EXCITATION	
0	10 VDC
2	2.7–5.5 VDC

RANGE (PSI)	
100	100
250	250
300	300
1K	1,000
3K	3,000
10K	10,000

TYPE	
G	Gauge
A	Absolute

PORT	
3	1/4"-18 NPT
6	5/16-24 UNF-3A
4 / 5	Custom

ELECTRICAL	
1	PTIH-10-6P hermetic
2	4-cond. PTFE cable

CONFIG. SUFFIX	
-XX	Customer drawing (sensitivity, comp. range, pinout)

EXAMPLES

PPT79-0-300G31-VV → 10 V excitation · 0–300 PSI gauge · 1/4"-18 NPT female · PTIH-10-6P · 10 mV/V

PPT79-2-3KA62-P4 → 2.7–5.5 V excitation · 0–3,000 PSI absolute · 5/16-24 UNF · PTFE cable

Configure your PPT79

PPT79 configurations are built to customer drawing — sensitivity, compensation range, pinout and shunt-cal. Talk to an engineer to spec your part.

REQUEST A QUOTE
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