

# PTD Series

## DIFFERENTIAL PRESSURE TRANSMITTER



Low Range



NEMA 4



High Range



### Description

Winters PTD Series is designed to measure the wet to wet differential pressures of liquids and gases. This compact, efficient design is available in Low or High psi ranges that facilitates installation in tight spaces. The PTD Low Range housing is constructed of stainless steel and aluminum. The PTD High Range housing is made from a 316-grade stainless steel ideally suited for an industrial environment. The PTD's fast response sensor and signal conditioned electronic circuitry provides quick and accurate readings. A unique isolation system responds to pressure changes approximately 20 times faster than conventional transmitters with ranges below 100 psi (Low Range Model). CE approval is standard on all models. NEMA 4 approval is standard on The Low Range Model.

Differential transmitters are commonly utilized to measure drops across filters. Other applications include; pumps and compressors, flow measurements of gases and liquids, liquid level measurement of pressurized vessels.

# PTD Series

## DIFFERENTIAL PRESSURE TRANSMITTER

High Range Specifications	
<b>Electrical Output:</b>	4-20mA, 2 wire (other options available)
<b>Electrical Connection:</b>	DIN 43650 w/mate.
<b>Excitation Voltage:</b>	8-38 Vdc
<b>Wetted parts/Connection:</b>	316L stainless steel 1/4" NPT female 300 series stainless steel and 17-4PH stainless steel with Viton O-ring
<b>Housing:</b>	316L stainless steel
<b>Proof Pressure:</b>	3X full scale (max. 10000 psi) (20X full scale optional).
<b>Burst Pressure:</b>	5X full scale (max. 10000 psi)
<b>Normal Operating Temperature Range:</b>	-40°F to 170°F (-40°C-76°C)
<b>Compensated Temp. Performance:</b>	-40°F to 170°F (-40°C-76°C)
<b>Ambient Temp. Effect on Zero/Span:</b>	Less than ± 1.5% FSO per 100°F (37.7°C).
<b>Response Time:</b>	50 mS.
<b>Accuracy:</b>	± 0.5% (FSO)
<b>Long Term Stability:</b>	± 0.25% FSO per annum.
<b>Enclosure Rating:</b>	IP65
<b>Weight:</b>	13 oz. (368g)

Low Range Specifications	
<b>Electrical Output:</b>	4-20mA, 2 wire 0-5Vdc or 0-10 Vdc
<b>Electrical Connection:</b>	Barrier trip terminal block with conduit enclosure & .875 DIA conduit opening
<b>Excitation Voltage:</b>	9-30 Vdc
<b>Wetted parts/Connection:</b>	17-4PH stainless steel with Viton O-ring , 1/4" - 18 NPT internal
<b>Housing:</b>	Stainless steel/cast aluminum
<b>Proof Pressure:</b>	Refer to pressure range chart on next page.
<b>Burst Pressure:</b>	Refer to pressure range chart on next page.
<b>Normal Operating Temperature Range:</b>	0 to 175°F (-17°C to 82°C)
<b>Compensated Temp. Range</b>	30 to 150°F(0 to 65°C)
<b>Ambient Temp. Effect on Zero/Span:</b>	2% of full scale/100°F (37.7°C)
<b>Response Time:</b>	30-50 milliseconds
<b>Accuracy:</b>	± 0.25% (FSO)
<b>Long Term Stability:</b>	0.5% full scale per annum
<b>Weight:</b>	14.4 oz. (408g)
<b>Enclosure Rating:</b>	IP65

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How to order: Specify product code

### High Range

### Low Range

PTD Series High Range Wet/Wet	
Range	Code
0-150 psid	PTD150
0-200 psid	PTD2000
0-300 psid	PTD300
0-500 psid	PTD500
0-1000 psid	PTD1000
0-3000 psid	PTD3000
0-5000 psid	PTD5000
Other	PTD - OR (RANGE)

PTD Series Low Range Wet/Wet			
Unidirectional		Bidirectional	
Range*	Code	Range	Code
0-1 (27.7in/H <sub>2</sub> O)	PTDU1	0-0.5 (±) (13in/H <sub>2</sub> O)	PTDB0.5
0-2 (55.4in/H <sub>2</sub> O)	PTDU2	0-1(±) (27.7in/H <sub>2</sub> O)	PTDB1
0-5 (138.4in/H <sub>2</sub> O)	PTDU5	0-2.5 (±) (69in/H <sub>2</sub> O)	PTDB2.5
0-10 (276.8in/H <sub>2</sub> O)	PTDU10	0-5 (±) (138.4in/H <sub>2</sub> O)	PTDB5
0-25 psi	PTDU25	0-10 (±) (276.8in/H <sub>2</sub> O)	PTDB10
0-50 psi	PTDU50	0-25 (±) (psi)	PTDB25
0-100 psi	PTDU100	0-50 (±) (psi)	PTDB50

● 4WCABLE = 4 wire shielded data cable (per ft.)

\* Calibrated in psi. Other ranges (e.g. bar, etc.) available upon request. Other outputs & options available

PTD High Pressure Range		
Gauge psid	Proof Pressure psig	Burst Pressure psig
0-50	100	750
0-100	200	1000
0-200	500	2000
0-500	1000	3000
0-1000	2000	5000
0-3000	4500	7500
0-5000	7500	10000
0-10000	12500	20000

PTD Low Pressure Range					
Gauge psid	Proof Pressure psig	Burst Pressure psig	Gauge psid	Proof Pressure psig	Burst Pressure psig
Unidirectional			Bidirectional		
0-1	2.5	20	0 to ± 0.5	1.25	20
0-2	5	40	0 to ± 1	2.5	40
0-5	12.5	100	0 to ± 2.5	6.25	100
0-10	25	100	0 to ± 5	12.5	100
0-25	62.5	250	0 to ± 10	25	200
0-50	125	250	0 to ± 25	62.5	250
0-100	250	250	0 to ± 50	12.5	250

## Definitions:

**Wet to Wet** = Can be used on any liquid or gas that is compatible with 316 st/st

**Uni-directional** = The instrument is calibrated with a 4 mA output @ 0 psid and 20 mA output at full scale ( Example for 0-10 psid range: 4 mA = 0 psid and 20 mA = 10psid)

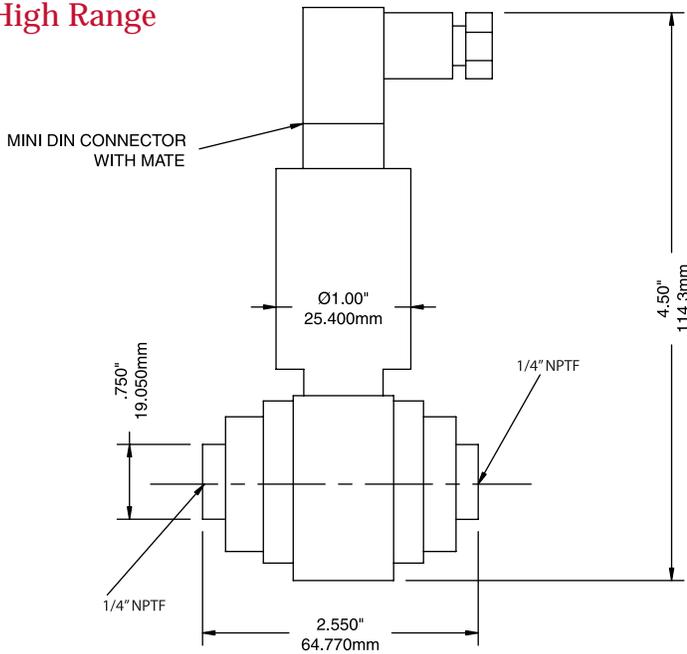
**Bi-directional** = The instrument is calibrated with a 12 mA output @ 0 psid (Zero center)  
( Example for 0-10 psid range: 4 mA = -5 psid, 12 mA @ 0 psid and 20 mA = +5 psid)



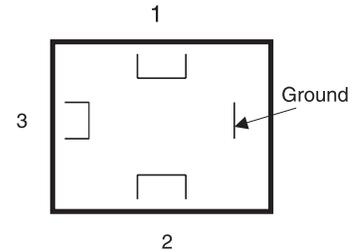
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### High Range



### Hirschman Mini-DIN Pin Out:



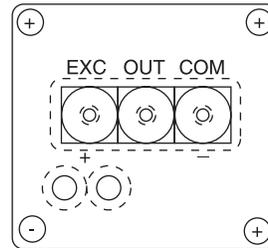
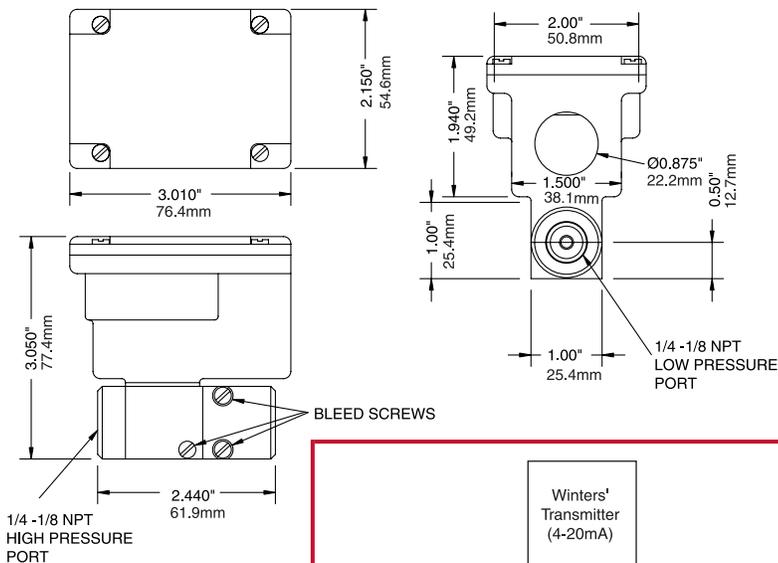
4-20mA output Supply Power: 8-38 Vdc

1.0 Connection type:

Pin	Colour Code	V	mA
1	N/A	+Excitation	+Excitation/Signal
2	N/A	-Excitation/Signal	-Excitation/Signal
3	N/A	+Signal	NC
Grnd.	N/A	Gnd	Gnd

Wire Lead	Colour Code	V	mA
1	Red	+Excitation	+Excitation/Signal
2	Black	-Excitation/Signal	-Excitation/Signal
3	Green	+Signal	NC
Grnd.	Shield	Gnd	Gnd

### Low Range

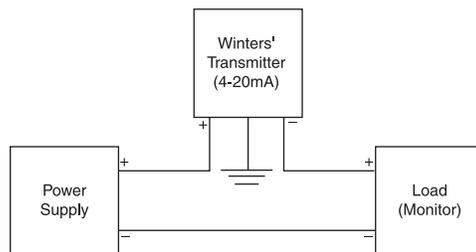


For voltage output, use COM, OUT and EXC terminals.

For current (4-20 mA) output, use + and - terminals.

### Current Output Units

Winters PTD Low Range (current output) transducers are true 2-wire, 4-20 mA current output devices and deliver rated current into any external load of 0-1000 ohms. The 4-20 mA current output units are designed to have current flow in one direction only. PLEASE OBSERVE POLARITY. We suggest that an electrical cable shield be connected to the system's loop circuit ground to improve electrical noise rejection.



MIN Supply Voltage:  $9 + .02 \times (\text{Resistance of receiver plus line})$

MAX Supply Voltage:  $30 + .004 \times (\text{Resistance of receiver plus line})$

