



TEL-TRU MANUFACTURING CO.

P523 Differential Pressure Transmitter

High Line/Low Differential Pressure Measurement Certified for Hazardous Locations

Designed for High Static/Low DP applications

The P523 differential pressure transmitter is designed for End Users and OEMs where extreme overpressure protection (1000 psi), high performance, and reliability are required at a competitive price. This product is modular and is configurable to meet our customers' exact needs.

Manufactured for extended life cycle

Every P523 is built using advanced manufacturing techniques to ensure symmetry between the HI and LO ports. Symmetry, along with automated welding procedures and extreme environmental burn-in, give Tel-Tru's differential pressure products excellent performance and reliability over time and at high elevated line pressure.

Entirely welded 316L SST pressure cavities

The P523 pressure port's all welded 316 SST 'O'-Ring free design makes it ideal for high cyclical applications, capillary filled systems, or applications where a guaranteed leak free system is needed.

Certified for Hazardous Locations

The P523 is CSA/CUS certified Explosion Proof to Class I Div 1 and Class I Div 2 Groups A, B, C, D.

NIST

Each P523 Transmitter is shipped with a NIST traceable calibration certificate.



Fast Response

Wet/Wet

Alternate Materials Available

Standard Features

- Ranges from 5" H₂O
- High overpressure protection
- ≤ ±0.25% FSO/YR Stability

Available Options

- ≤ ±0.1% FSO Static Accuracy
- Alternate Wetted Materials
- 316L SST Process Flanges



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P523 Differential Pressure Transmitter

0-5" H₂O through 0-5000 psi
High Line & Overpressure Protection

Product Specifications

Electrical

Excitation

P523C	2-15 Vdc
P523A and P523B	8-38 Vdc*

Output

P523C	1-2 mV/V
P523B	0-5 Vdc*
P523A	0-20 mA _{dc}

Zero Balance	≤ ±1% FSO
FSO Setting	≤ ±1% FSO
Resolution	Infinite (±.001% FSO usable)
Response Time	< 10 mS
Insulation Resistance	1000 MΩ @ 50 Vdc
Reverse Polarity	Protected
Warm-up	50 < mS
Power Supply Effect	≤ ±.002% FSO per V input
EMI/RFI	Internal Filtering
Short Circuit Protected	Up to 40 Vdc

Performance

Static Accuracy	≤ ±0.25% FSO* (BFSL, RSS) <small>(combined effects of non-linearity, hysteresis & repeatability)</small>
Static Pressure Effect	
On zero	≤ ±0.25% FSO per 1,000 psi
On span	≤ ±0.5% of reading per 1,000 psi
Repeatability	≤ ±0.1% FSO
Temperature Effects	≤ ±1.5% FSO over comp range <small>(combined effects of Zero & FSO with reference at 70°F)</small>
Mounting Effects	Zero shifts up to 1" H ₂ O depending on orientation
Long Term Stability	≤ ±0.25% FSO per year

Certifications

CSA/CUS Explosion Proof Class I Div 1 Groups A, B, C, D
CSA/CUS Explosion Proof Class I Div 2 Groups A, B, C, D
Master Contract Number: 236039
Certificate Number: 1815757

Mechanical

Pressure Ranges 0-5" H₂O through 0-10,000 psid
(Customer may specify any range/eng. unit FOC)

Pressure Ranges

Range a:	0-5" H ₂ O through 0-30 psi
Range b:	0-30 through 0-200 psid
Range c:	0-300 through 0-1k psid
Range d:	0-2k through 0-5 k psid

(Customer may specify any range/eng. unit FOC)

Line Pressure

Range a:	1,000 psi
Range b:	1,000 psi
Range c:	3,000 psi
Range d:	5,000 psi

Proof Pressure

Range a:	1000 psi
All other:	3X Full Scale either side (7k psi max)*

Burst Pressure

Range a:	Minimum 3k psi
Range b:	Minimum 5k psi
Range c:	Minimum 10k psi
Range d:	Minimum 12k psi

Materials

Wetted Parts	316L SS
Non-wetted Parts	316L SS plus electrical connector
Pressure Port*	¼"-NPT Female
Electrical Connector*	NEMA 4X cable exit with 24" cable
Dimensions	per outline O-EXD-001
Weight	18 oz nominal

Environmental

Compensated Temp Range	0 to 170°F
Operating Temp Range	-20 to 200°F
Storage Temp Range	-40 to 250°F

*** Options Available**

Standard Wiring:

Model	Output	+ Power	- Power	+ Signal	- Signal
P523C	mV/V dc 4 wire	Red/Pin 1/Pin A	Black/Pin2/PinB	Green/Pin 3/Pin C	White/Pin 4/Pin D
P523B	0-5 (10) Vdc 3 Wire	Red/Pin 1/Pin A	Black/Pin2/PinB	Green/Pin 3/Pin C	+ Sig ref to - Power
P523A	4-20 mA _{dc} 2 Wire	Red/Pin 1/Pin A		Black/Pin2/PinB	

Tel-Tru Manufacturing Co.reserves the right to change specifications without prior notification. Please contact the factory for the latest revision.

P52306

TEL-TRU PRESSURE TRANSMITTERS

Differential Series Models P521, P531, and P523

HOW TO ORDER EXAMPLE:

Precision Grade Differential, 4-20 mA, 0.25% Accuracy, 0 to 30 psid, Differential/Unidirectional, 1/4" NPT (F), 2 ft. Wire Pigtail (NEMA 4X)

Example: **P521 A 3 C6A D - 02 A402 -**



MODEL

- P521**
- P531** Low Pressure
- P523** Explosion-Proof

OUTPUT

- A** 4-20 mA (2-wire)
- B** 0-5 Vdc (3-wire)
- C** 1-2 mV/V (4-wire)
- K** 0-10 Vdc output
(req. 16-38 Vdc excitation)
- N** Hart Protocol
(Models P521 and P523 only)

ACCURACY

- 2** 0.50%
- 3** 0.25%
- 6** 0.10% (P531 only)

PRESSURE RANGE

	P521	P531	P523
B1P 0 to 5 in. WC	N/A		
B4P 0 to 10 in. WC	N/A		
B8P 0 to 16 in. WC	N/A		
C2P 0 to 20 in. WC	N/A		
D4P 0 to 50 in. WC	N/A		
D7P 0 to 75 in. WC	N/A		
D9P 0 to 100 in. WC	N/A		
E3P 0 to 150 in. WC	N/A		
E4P 0 to 160 in. WC	N/A		
E5P 0 to 200 in. WC	N/A		
E7P 0 to 250 in. WC	N/A		
E8P 0 to 300 in. WC	N/A		
F3P 0 to 500 in. WC	N/A		
F6P 0 to 750 in. WC	N/A		
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B7A 0 to 15 psid	N/A		
C6A 0 to 30 psid			
D6A 0 to 60 psid			
D9A 0 to 100 psid			
E3A 0 to 150 psid		N/A	
E5A 0 to 200 psid		N/A	
E7A 0 to 250 psid		N/A	
E8A 0 to 300 psid		N/A	
F3A 0 to 500 psid		N/A	
F6A 0 to 750 psid		N/A	
F8A 0 to 1,000 psid		N/A	
H2A 0 to 1,500 psid		N/A	
H5A 0 to 2,000 psid		N/A	
H7A 0 to 2,500 psid		N/A	
H9A 0 to 3,000 psid		N/A	
J4A 0 to 4,000 psid		N/A	
J8A 0 to 5,000 psid		N/A	

OPTIONS

- | | | |
|---|--|----|
| B1 Mate Bendix 6 pin | | |
| B110 Mate Bendix 6 pin w/ 10' wire | | NA |
| E4 Zero and span controls | | NA |
| E6 100% shunt cal resistor | | |
| A3 Inconel wetted parts | | |
| A7 Hastelloy wetted parts | | |
| B8 Bleed port | | NA |

ELECTRICAL CONNECTION

- | | | |
|---|--|----|
| A402 2' wire pigtail (NEMA 4X) | | NA |
| A405 5' wire pigtail (NEMA 4X) | | NA |
| A410 10' wire pigtail (NEMA 4X) | | NA |
| A420 20' wire pigtail (NEMA 4X) | | NA |
| A430 30' wire pigtail (NEMA 4X) | | NA |
| *A450 50' wire pigtail (NEMA 4X) | | NA |

- | | | |
|---|--|--|
| A602 1/2" NPT (M) conduit
w/2' wire pigtail | | |
| A605 1/2" NPT (M) conduit
w/5' wire pigtail | | |
| A610 1/2" NPT (M) conduit
w/10' wire pigtail | | |
| A620 1/2" NPT (M) conduit
w/20' wire pigtail | | |
| A630 1/2" NPT (M) conduit
w/30' wire pigtail | | |
| *A650 1/2" NPT (M) conduit
w/50' wire pigtail | | |

- | | | |
|---|--|----|
| B200 Bendix 6-pin connector | | NA |
| D100 Mini DIN 43650C
connector w/mate | | NA |

* NOTE: Request quote for more than 50' wire

PROCESS CONNECTION

- 02** 1/4" NPT (F)
- 01** 1/4" NPT (M)
- 06** 1/8" NPT (F)
- 62** 316L SS Process Flanges 1/4" NPT

MODE

- D** Differential/Unidirectional
- B** Differential/Bidirectional

PRICES INCLUDE:

- Certificate of Calibration (directly traceable to NIST)

IMPORTANT NOTE:

Available Upon Request--Additional Options (consult factory):

- Process Connections
- Electrical Connections and more than 50' wire
- Pressure Ranges/Unit of Measure

List prices subject to change without notice (FCA Rochester, NY USA)



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