

Model TJE Precision Gage/Absolute Pressure Transducer



- 1 psig/a to 60000 psig/a range
- mV/V, 4 mA to 20 mA, 0 Vdc to 5 Vdc, or 0 Vdc to 10 Vdc output
- Stainless steel, hermetically sealed
- 0.1 % accuracy
- Intrinsically safe available (2N option only)¹⁸
- CE¹⁹

Notes

1. Accuracies stated are expected for best fit straight line for all errors including linearity, hysteresis & non-repeatability thru zero.
2. Output for 0.5 psig/a, 1 psig/a, 2 psig/a units is 1 mV/V to 2 mV/V.
3. Input power (voltage) for internal amplifier options 2j, 2k, 2n(2N) depends on load resistance.
4. CE mark requires options 6a & 3d.
5. Interconnecting shunt cal. 1 with shunt cal. 2 terminal provides 50 % (unamplified units), 75% (4 mA to 20 mA three-wire units), or 80 % (voltage amp. units) of full scale output for quick calibration. Shunt calibration comes standard with internal amplifier options 2a, 2b, 2c, 2t and 2j.
6. G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange. Color specifying cable and number or letter specifying connector.
7. No mating connector necessary with cable option.
8. Options 2k, 2n(2N) only available with option 12b.
9. Availability varies according to range.
10. Not available with temperatures below -29 °C [-20 °F] or above 85 °C [185 °F].
11. Cannot be used with amplified option.
12. Gage pressure units greater than 500 psi are sealed at atmospheric pressure.
13. No pot access available with MS type connector.
14. Temperature 82 °C [180 °F] max., non-shielded standard, shielded available.
15. Input/output isolation only available with voltage output (options 2a, 2b, 2c).
16. Consult factory for TEDS availability with amplified models.
17. 5000 ohm bridge required.
18. Range dependent; consult factory. Termination dependent; consult factory.
19. Internal amp and termination dependent; consult factory.

How to order: (Quick-ship range/option combinations available. See Web site.)

Combine the order code, range code, and options code. For example:

AP121 **AT** **1c, 2a**
Order code Range code Options code

Order codes

AP121 Gage pressure
AP122 Absolute pressure

Range codes

Pressure range (psi)	1	2	5	10	15	25	50	75	100	150	200	300	500	750	1000	1500
RANGE CODE	AP	AR	AT	AV	BJ	BL	BN	BP	BR	CJ	CL	CP	CR	CT	CV	DJ
D mm [in] psia	57 [2.25]			38 [1.50]												
D mm [in] psig	57 [2.25]			45 [1.75]		38 [1.50]										
L mm [in] psia	65 [2.54]			60 [2.35]												
L * mm [in] psia	96 [3.79]			91 [3.60]												
L mm [in] psig	46 [1.81]			51 [2.00]		51 [2.02]										
L * mm [in] psig	78 [3.06]			83 [3.25]		83 [3.27]										
Over pressure (test) (psi)	150 % full scale			150 % full scale												
Over pressure (burst) (psi)	50			100		200		400		800		2 k		3 k	3.5 k	4 k
Port volume cm ³ [in ³]	5.2 [0.32]			4.1 [0.25]			2.8 [0.17]									
Natural frequency (Hz)	500	550	1000	1.3 k	2.1 k	2.5 k	2.9 k	3.5 k	4.6 k	6 k	7 k	9 k	9.5 k	12 k	17 k	20 k

Pressure range (psi)	2000	3000	5000	7500	10000	15000	20000	30000	50000	60000
RANGE CODE	DL	DN	DR	DT	DV	EJ	EL	EN	EP	ES
D mm [in] psia	38 [1.50]					38 [1.50]				
L mm [in] psia	48 [1.90]					56 [2.21]				
L * mm [in] psia	80 [3.15]					89 [3.46]				
Over pressure (test) (psi)	150 % full scale					Consult factory				
Over pressure (burst) (psi)	8 k	12 k	20 k	25 k	25 k	40 k	45 k	60 k	80 k	80 k
Port volume cm ³ [in ³]	3.1 [0.12]					1.5 [0.06]				
Natural frequency (Hz)	35 k	40 k	54 k	60 k	80 k	100 k	>100 k	>100 k	>100 k	>100 k

* Length of pressure transducer with amplified option (see option codes)

** 0.5 psi is available for gage only

Option codes

	Many range/option combinations are available in our quick-ship and fast-track manufacture programs. Please see http://sensing.honeywell.com/TMsensor-ship for updated listings.		
Pressure ranges	1, 2, 5, 10, 15, 25, 50, 75, 100, 150, 200, 300, 750, 1500, 2000, 15000, 20000, 30000, 50000, 60000 psig/a 500, 1000, 3000, 5000, 7500, 10000 psia 500, 1000, 3000, 5000, 7500, 10000 psig		
Temperature compensation	1a. 60 °F to 160 °F 1b. 30 °F to 130 °F 1c. 0 °F to 185 °F 1d. -20 °F to 130 °F 1e. -20 °F to 200 °F	1f. 70 °F to 250 °F ¹¹ 1g. 70 °F to 325 °F ¹¹ 1h. 70 °F to 400 °F ¹¹ 1i. -65 °F to 250 °F ¹¹	
Internal amplifiers¹⁰	2a. 0 Vdc to 5 Vdc (four wire) output ¹⁵ 2c. 0-5 Vdc output ¹⁵ 2j. 4 mA to 20 mA (three wire) output 2k. 4 mA to 20 mA (two wire) output ^{6, 17}	2n. 4 mA to 20 mA (two wire) intrinsically safe ^{6, 17} 2t. 0 Vdc to 10 Vdc output 2u. Unamp., mV/V output	
Internal amplifier enhancements	3a. Input/output isolation ¹⁵ 3d. Remote buffered shunt calibration		
Pressure ports⁹	5a. 1/4-18 NPT female (3000 psig to 10000 psig) 5b. 1/4-18 NPT male (15 psig/a to 10000 psig/a) 5c. 7/16-20 UNF female (per MS33649-4)	5d. 7/16-20 UNF male 5g. G 1/4 male	
Electrical termination	6a. Bendix PTIH-10-6P (or equiv), 6 pin (max 250 °F) 6b. MS type connector to mate with MS3106-14S 6S (max 160 °F) ¹³ 6e. Integral cable: Teflon (0 °F to 180 °F) 6f. Integral cable: PVC (-20 °F to 160 °F)	6g. Integral cable: Neoprene (0 °F to 180 °F) 6h. Integral cable: Silicone (-65 °F to 300 °F) 6i. Integral underwater cable (max 180 °F) 6j. 1/2-14 conduit fitting with 5 ft of 4 conductor PVC cable	6m. DIN 43650 6q. Molded integral cable: Polyurethane (max 180 °F) 6t. Integral cable with Heyco spring strain relief (5 ft)
Shunt calibration	8a. Precision internal resistor ¹¹		
Special calibration⁹	9a. 10 point (5 up/5 down) 20 % increments @ 70 °F (gage) 9b. 20 point (10 up/10 down) 10 % increments @ 70 °F (gage)		
Wetted diaphragm⁹	10a. 316 stainless steel ⁹ 10b. Crucible A-286	10c. Hastelloy-C 10d. Monel K-500	
Bridge resistance⁹	12a. 1000 ohm (foil) (max 400 °F) 12b. 5000 ohm (foil) (max 400 °F)		
Zero and span adjustment	14a. No access to pots 14b. Top access to pots		
Shock and vibration	44a. Shock and vibration resistance		
Interfaces	53e. Signature calibration ¹¹ 53t. TEDS IEEE1451.4 module ¹⁶		

Internal amplifiers

Amplifier specifications	mV/V output standard	Voltage output: Option 2a ⁴	Vehicle voltage output: Option 2c ⁴	Vehicle voltage output: Option 2t ⁴	Current three-wire: Option 2j ⁴	Current two-wire: Option 2k ⁴	Intrinsically safe amp: Option 2N (2n)
Output signal	3 mV/V ²	0 Vdc to 5 Vdc	0-5 Vdc or ±5 Vdc @ 5 mA	0-10 Vdc or ±10 Vdc @ 5 mA	4 mA to 20 mA	4 mA to 20 mA	4 mA to 20 mA
Input power (voltage)	10 Vdc regulated	±15 Vdc or 26-32 Vdc	11 Vdc to 28 Vdc	15 Vdc to 28 Vdc	22 Vdc to 32 Vdc ³	9 Vdc to 32 Vdc ³	9 Vdc to 28 Vdc ³
Input power (current)	28.5 mA @ 10 Vdc	45 mA	40 mA	40 mA	65 mA	4 mA to 28 mA	4 mA to 24 mA
Freq. resp (amp)	Natural frequency	2000 Hz	3000 Hz	3000 Hz	2500 Hz	2500 Hz	2000 Hz
Power supply rej.	NA	60 db	60 db	60 db	60 db	60 db	60 db
Operating temp.	-73 °C to 121 °C [-100 °F to 250 °F]	-28 °C to 85 °C [-20 °F to 185 °F]	-40 °C to 93 °C [-40 °F to 200 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-28 °C to 85 °C [-20 °F to 185 °F]
Reverse volt. prot.	NA	Yes	Yes	Yes	Yes	Yes	Yes
Short cir. protection	NA	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring code: connector (std)⁵	A (+) Excitation B (+) Excitation C (-) Excitation D (-) Excitation E (-) Output F (+) Output	A (+) Supply B Output com. C Supply ret. D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B Output com. ** C Supply ret. ** D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B Output com. ** C Supply ret. ** D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B Output com. ** C Supply ret. ** D (+) Output E Shunt Cal 1 F Shunt Cal 2	A (+) Supply B No conn. C No conn. D (+) Output E Case ground F No conn.	A (+) Supply B No conn. C No conn. D (+) Output E Case ground F No conn.
Wiring code: cable^{5, 6, 7}	R (+) Excitation BI (-) Excitation G (-) Output W (+) Output	R (+) Supply BI Output com. G Supply ret. W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI Output com.* G Supply ret.* W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI Output com.* G Supply ret.* W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI Output com.* G Supply ret.* W (+) Output B Shunt Cal 1 Br Shunt Cal 2	R (+) Supply BI (+) Output W Case ground	R (+) Supply BI (+) Output W Case ground
For current information		Reference application sheet #008-0356-00	Reference application sheet #008-0357-00	Reference application sheet #008-0360-00	Reference application sheet #008-0361-00	Reference application sheet #008-0361-60	See Honeywell Web site for info on intrinsically safe approvals. #008-0547-00

* Black and green wires are internally connected. ** Pins B and C are internally connected.

Specifications subject to change.

Specifications

Performance

Accuracy ¹	±0.10 % full scale
Linearity	±0.10 % full scale
Hysteresis	±0.05 % full scale
Media	All gases/liquids compatible with wetted parts
Resolution	Infinite
Calibration	5-point calibration: 0 %, 50 %, and 100 % of full scale

Environmental

Temperature compensated	15 °C to 71 °C [60 °F to 160 °F]
Temperature effect, zero	0.0025 % full scale/°F
Temperature effect, span	0.0025 % reading/°F
Sealing	Hermetically sealed IP68/NEMA 6P

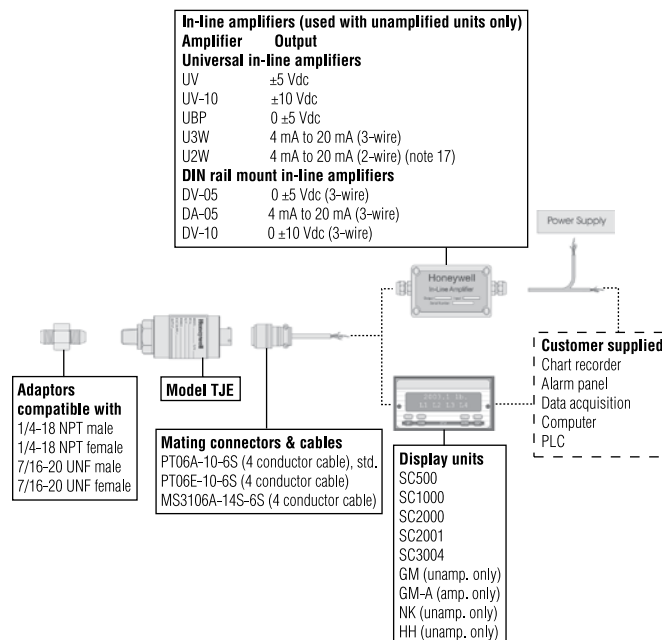
Electrical

Strain gage type	Bonded foil
Insulation resistance	5000 mOhm @ 50 Vdc
Bridge resistance	350 ohm
Shunt calibration data	Included
Electrical termination (std)	PTIH-10-6P or equiv. (hermetic stainless)
Mating connector (not incl)	PT06A-10-6S or equiv. (AA111)

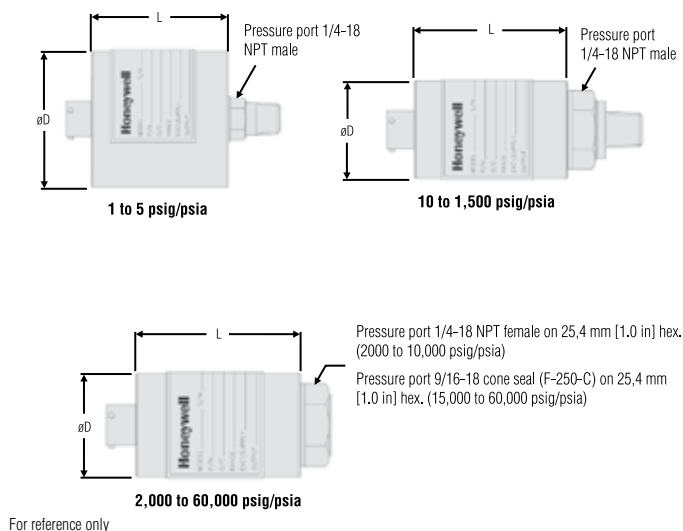
Mechanical

Wetted parts material	17-4 PH stainless steel
< 2000 psig/a	15-5 PH stainless steel
≥ 2000 psig/a	10 oz
Weight	304 stainless steel
Case material	Permanent metal name plate MIL-STD130F
Marking	4.3; Individual sequential serial number per sensor; Country of origin and date of manufacture

Typical system diagram



Mounting diagram and characteristics



Special requirements (consult factory)

Have a special requirement? New case pressure, different cable lengths, electrical connectors, or materials? Consult our factory by calling +1 614-850-5000 (800-848-6564). Customization is key to our test and measurement business. Special outputs, wiring codes, and calibrations are all standard to us.