

## Model TJE

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### Ultra Precision Wet/Wet Differential Pressure Transducer



#### DESCRIPTION

Model TJE Ultra Wet/Wet Differential is a bonded foil strain gage transducers designed to accept fluid in both ports and measure differential pressure ranges from 50 psid to 750 psid. Standard features such as overload stops and stainless steel construction provide unit durability in rugged industrial environments. Each is bi-directional and achieves accuracies of 0.1 % full scale.

A variety of standard options are available with the Model TJE Ultra including the traditional removable pressure adaptors for cleaning purposes, extended temperature ranges, alternative pressure ports, internal amplifiers options, and electrical terminations.

#### FEATURES

- 0.1% accuracy
- 50 psid to 750 psid
- mV/V (standard), 4 mA to 20 mA, 0 Vdc to 5 Vdc, or 0 Vdc to 10 Vdc output
- Intrinsically safe available (2N option only)<sup>10</sup>
- CE approved<sup>11</sup>

# Model TJE

## PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Pressure ranges	50, 75, 100, 150, 200, 300, 500, 750 psid
Accuracy	±0.1 % full scale
Output (standard)	2 mV/V (nominal)
Line pressure	1500 psi
Resolution	Infinite

## ENVIRONMENTAL SPECIFICATIONS

Characteristic	Measure
Temperature, operating	-54 °C to 121 °C [-65 °F to 250 °F]
Temperature, compensated	15 °C to 71 °C [60 °F to 160 °F]
Temperature, effect, zero	±0.25 % full scale/100 °F
Temperature, effect, span	±0.25 % reading/100 °F

## ELECTRICAL SPECIFICATIONS

Characteristic	Measure
Strain gage type	Bonded foil
Excitation (calibration)	10 Vdc
Excitation (acceptable)	Up to 10 Vdc or ac
Insulation resistance	10000 mOhm @ 50 Vdc
Bridge resistance	350 ohm
Shunt calibration data	Included
Elec. termination (std)	PTIH-10-6P or equivalent (hermetic stainless)
Mating connector (not incl.)	PT06A-10-6S or equiv. (AA111)

## MECHANICAL SPECIFICATIONS

Characteristic	Measure
Media	Gas, liquid
Overload-safe	1500 psi
Pressure port	1/8-27 NPT female (2)
Dead volume	0.25 cu. in
Wetted parts material	17-4 PH stainless steel
Case material	Stainless steel

## RANGE CODES

Range Code	Available ranges
BN	±50 psid
BP	±75 psid
BR	±100 psid
CJ	±150 psid
CL	±200 psid
CP	±300 psid
CR	±500 psid
CT	±750 psid

## OPTION CODES

	<b>Many range/option combinations are available in our quick-ship and fast-track manufacture programs. Please see <a href="http://sensing.honeywell.com/TMsensor-ship">http://sensing.honeywell.com/TMsensor-ship</a> for updated listings.</b>	
<b>Pressure ranges (psid)</b>	50, 75, 100, 150, 200, 300, 500, 750	
<b>Temperature compensation</b>	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	1g. 70 °F to 325 °F <sup>6</sup> 1h. 70 °F to 400 °F <sup>6</sup> 1i. -65 °F to 250 °F <sup>6</sup> 1j. 0 °C to 50 °C 1m. -25 °C to 110 °C
<b>Internal amplifiers</b>	2b. 4 wire ±5 Vdc 2c. 0 Vdc to 5 Vdc 2t. 0 Vdc to 10 Vdc 2j. 4 mA to 20 mA (3 wire) output 2k. 4 mA to 20 mA (2 wire) output <sup>12</sup>	2n. (2N) 4 mA to 20 mA (2 wire) intrinsically safe <sup>12</sup> 2u. Unamplified, mV/V output
<b>Internal amp enhancements</b>	3a. Input/output isolation <sup>8</sup> 3d. Remote buffered shunt calibration	
<b>Pressure ports<sup>5</sup></b>	5c. 7/16-20 UNF female 5h. 1/8-27 NPT female (2)	
<b>Electrical termination</b>	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) <sup>1</sup> 6e. Integral cable: Teflon (-54 °C to 245 °C) 6f. Integral cable: PVC (-30 °C to 70 °C)	6g. Integral cable: Neoprene (-20 °C to 80 °C) 6h. Integral cable: Silicone (-54 °C to 150 °C) 6i. Integral underwater cable (8m [26 ft]) (max. 80°C) <sup>1</sup> 6j. 1/2-14 conduit fitting with 1,5 m [5 ft] of 4 conductor PVC cable
<b>Shunt calibration</b>	8a. Precision internal resistor <sup>7</sup>	
<b>Special calibration</b>	9a. 10 point (5 up/5 down) 20% increments @ 20 °C 9b. 20 point (10 up/10 down) 10% increments @ 20 °C	
<b>Wetted diaphragm</b>	17-4 PH stainless steel 10a. 316 stainless steel	
<b>Bridge type</b>	11a. Square bridge <sup>6</sup> 11b. Symmetrical bridge <sup>6</sup> 11c. Square & symmetrical bridge <sup>6</sup>	
<b>Zero &amp; span adjustment</b>	14a. No access 14b. Top access <sup>6</sup>	
<b>O ring seals</b>	26a. Metal 26b. Vi-Ton 26c. Teflon	
<b>Interfaces</b>	53e. Signature calibration <sup>6</sup> 53t. TEDS IEEE 1451.4 module <sup>9</sup>	

# Ultra Precision Wet/Wet Differential Pressure Transducer

## INTERNAL AMPLIFIERS

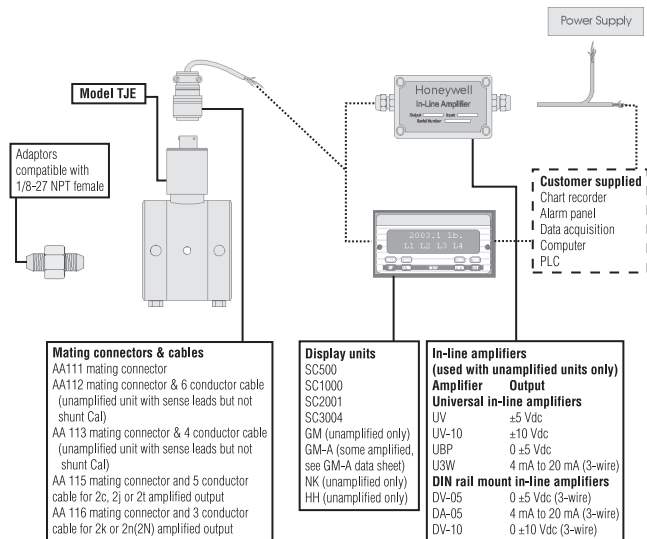
Amplifier specifications	Voltage output: Option 2b	Voltage output: Option 2c	Voltage output: Option 2t	Current three-wire: Option 2j	Current two-wire: Option 2k	Intrinsically safe amp: Option 2n (2N)***
Output signal	±5 V	0 V to 5 V or ±5 V @ 5 mA	0 V to 10 V or ±10 V @ 5 mA	4 mA to 20 mA	4 mA to 20 mA	4 mA to 20 mA
Input power (voltage)	±15 V or 26 Vdc to 32 Vdc	11 Vdc to 28 Vdc	15 Vdc to 28 Vdc	22 Vdc to 32 Vdc	9 Vdc to 32 Vdc	9 Vdc to 28 Vdc
Input power (current)	45 mA	40 mA	40 mA	65 mA	4 mA to 28 mA	4 mA to 24 mA
Freq. resp (amp)	3000 Hz	3000 Hz	3000 Hz	2500 Hz	300 Hz	2000 Hz
Power supply rej.	60 db	60 db	60 db	60 db	60 db	60 db
Operating temp.	-20 °F to 185 °F	-20 °F to 185 °F	-20 °F to 185 °F	0 °F to 185 °F	0 °F to 185 °F	-20 °F to 185 °F
Reverse voltage protection	Yes	Yes	Yes	Yes	Yes	Yes
Short cir. protection	Momentary	Momentary	Momentary	Yes	Yes	Yes
Wiring code: connector (std) <sup>2</sup>	A (+) Supply B Output common C Supply return D (+) Output E Shunt cal 1 F Shunt cal 2	A (+) Supply B Output common** C Supply return ** D (+) Output E Shunt cal 1 F Shunt cal 2	A (+) Supply B Output common** C Supply return** D (+) Output E Shunt cal 1 F Shunt cal 2	A (+) Supply B Output common** C Supply return** D (+) Output E Shunt cal 1 F Shunt cal 2	A (+) Supply B No connection C No connection D (+) Output E Case ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case ground F No connection
Wiring code: cable <sup>2,3,4</sup>	R (+) Supply BI Output common G Supply return W (+) Output B Shunt cal 1 Br Shunt cal 2	R (+) Supply BI Output common* G Supply return* W (+) Output B Shunt cal 1 Br Shunt cal 2	R (+) Supply BI Output common* G Supply return* W (+) Output B Shunt cal 1 Br Shunt cal 2	R (+) Supply BI Output common* G Supply return* W (+) Output B Shunt cal 1 Br Shunt cal 2	R (+) Supply BI (+) Output W Case ground	R (+) Supply BI (+) Output W Case ground

\* Black and green wires are internally connected.

\*\* Pins B and C are internally connected.

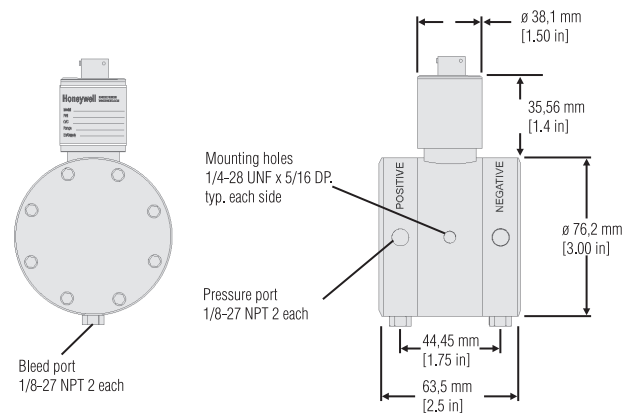
\*\*\* See Honeywell's Web site for the most up-to-date information regarding Intrinsically safe approvals, ref #008-0547-00.

## TYPICAL SYSTEM DIAGRAM



NOTE: For long cable runs or electronically noisy environments, an amplified sensor or locally mounted amplifier is often preferred.

## MOUNTING DIMENSIONS AND CHARACTERISTICS



## WIRING CODES

Connector	Unamplified
A, B	(+) excitation
C, D	(-) excitation
E	(-) output
F	(+) output

## NOTES

- Availability varies according to range.
- Interconnecting shunt cal. 1 terminal with shunt cal. 2 terminal provides 50% (unamplified units), 75% (4 mA to 20 mA 3-wire units) or 80% (voltage amplified units of full scale output for quick calibration. Shunt calibration comes standard with internal amplifier options 2b, 2c, 2t and 2j.)
- O=Orange, Y=Yellow, B=Blue, Bl=Black, R=Red, Br=Brown, W=White, G=Green. Color specifying cable and number or letter specifying connector.
- No mating connector necessary for cable option.
- Some pressure port options may require axial orientation.
- Only available with unamplified option 2u.
- Only available with amplified options.
- Only available with Vdc output options 2b, 2c.
- Consult factory for TEDS availability with amplified models.
- Range dependent; consult factory. Termination dependent; consult factory.
- Internal amp and termination dependent; consult factory.
- 5000 ohm bridge required

Note: Unless otherwise specified on order, amplified units with 4 mA to 20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. An available alternative is to specify 4 mA at negative full scale and 20 mA at positive full scale. All amps add 2 in to housing.

**Warranty.** Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

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Email inquiries to [info.sc@honeywell.com](mailto:info.sc@honeywell.com)

### **WARNING** **PERSONAL INJURY**

- DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

### **WARNING** **MISUSE OF DOCUMENTATION**

- The information presented in this catalogue is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**