

## Model Z

---

### Low Range Wet/Wet Differential Pressure Transducer



#### DESCRIPTION

The Model Z low range wet/wet differential pressure transducer offers a stainless steel assembly. The Model Z line pressure zero shift specification can be reduced to less than 0.5 % FS/1000 psi by the use of an internal line pressure sensor and analog correction circuit. Line pressures are available up to 5000 psig with safe overload of either side up to the maximum line rating. The natural resonant frequency is increased with the Model Z because of a stiffer pressure sensing element.

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

#### FEATURES

- 0.25 % FS accuracy
- 0.5 psid to 30 psid
- mV/V (standard), 4 mA to 20 mA, 0 Vdc to 5 Vdc, or 0 Vdc to 10 Vdc output
- Intrinsically safe available (option 2N only)<sup>10</sup>
- CE approved<sup>11</sup>

# Model Z

## PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Pressure ranges	±0.5, 1, 2, 5, 10, 15, 25, 30 psid**
Accuracy	±0.25 % full scale
Linearity	±0.15 % full scale (typical)
Hysteresis	±0.10 % full scale (typical)
Non-repeatability	±0.05 % full scale (typical)
Output (standard) 0.5 psid	1.0 mV/V (nominal)
Output (standard) 1 psid to 4 psid	1.5 mV/V (nominal)
Output (standard) 5 psid to 30 psid	2.0 mV/V (nominal)
Line pressure	1500 psi
Resolution	Infinite

## ENVIRONMENTAL SPECIFICATIONS

Characteristic	Measure
Temperature, operating	-1 °C to 88 °C [30 °F to 190 °F]
Temperature, compensated	-1 °C to 54 °C [30 °F to 130 °F]
Temperature, effect, zero	±0.5 % full scale/100 °F
Temperature, effect, pan	±0.5 % 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	5000 mOhm @ 50 Vdc max.
Bridge resistance	350 ohm (nominal)
Shunt calibration data	Included
Elec. termination (std)	Bendix PTIH-10-6P or equivalent
Mating connector (not incl.)	Bendix PT06A-10-6S or equiv. (AA111)

## MECHANICAL SPECIFICATIONS

Characteristic	Measure
Media	All fluid and gases compatible with 316 stainless steel
Overload-safe	1500 psi
Pressure port	1/8-27 NPT female (2)
Dead volume	0.4 cu. in
Wetted parts material	316 stainless steel
Weight	3.6 kg [8 lb]
Case material	Stainless steel

## 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>	0.5, 1, 2, 5, 10, 15, 25, 30	
<b>Temperature compensation</b>	1b. 30 °F to 130 °F 1a. 60 °F to 160 °F 1c. 0 °F to 185 °F	1d. -20 °F to 130 °F 1j. 0 °C to 50 °C
<b>Internal amplifiers</b>	2b. 4 wire ±5 Vdc 2c. 0 Vdc to 5 Vdc 2j. 4 mA to 20 mA (three-wire) output 2k. 4 mA to 20 mA (two-wire) output <sup>12</sup>	2n. (2N) 4 mA to 20 mA (two-wire) intrinsically safe <sup>12</sup> 2t. 0 Vdc to 10 Vdc 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>	5h. 1/8-27 NPT female (2) 5a. 1/4-18 NPT female 5c. 7/16-20 UNF female	
<b>Electrical termination</b>	6a. Bendix PTIH-10-6P (or equiv.) 6 pin (max. 120 °C) 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) <sup>1</sup> 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 6m. DIN 43650 6q. Molded integral cable: Polyurethane <sup>1</sup> 6t. Integral cable with heyco spring strain relief (1.6 m [5.2 ft])
<b>Shunt calibration</b>	8a. Precision internal resistor <sup>6</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>	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 and span adjustment</b>	14b. Top access to pots <sup>7</sup> 14a. No access to pots	
<b>Increased line pressure</b>	25a. 2000 psi line pressure 25b. 3000 psi line pressure 25c. 5000 psi line pressure <sup>1</sup>	
<b>Interfaces</b>	53e. Signature calibration <sup>6</sup> 53t. TEDS IEEE 1451.4 module <sup>9</sup>	

# Low Range Wet/Wet Differential Pressure Transducer

## INTERNAL AMPLIFIERS

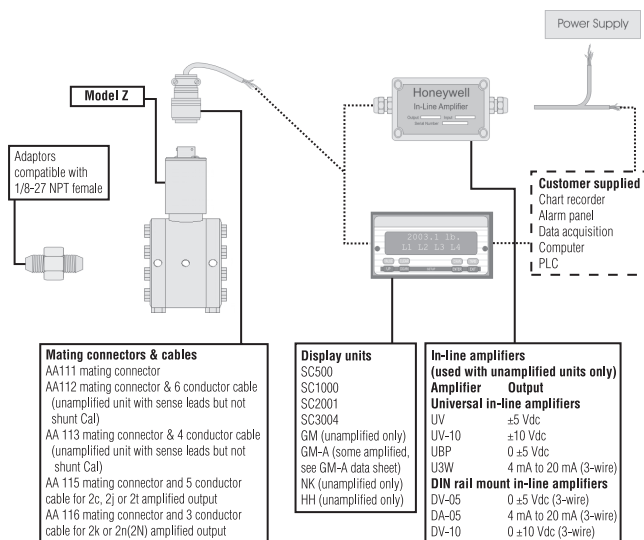
Amplifier specifications	Voltage output: Option 2b	Voltage output: Option 2c	Voltage output: Option 2t	Current three-wire: Option 2j	Current two-wire: Option 2k	Intrinsically safe amp: Option 2n (2N)**
Output signal	±5 V	0 V to 5 V or ±5 V @ 5 mA	0 V to 10 V or ±10 V @ 5 mA	4 mA to 20 mA	4 mA to 20 mA	4 mA to 20 mA
Input power (voltage)	±15 V or 26 Vdc to 32 Vdc	11 Vdc to 28 dc	15 Vdc to 28 Vdc	22 Vdc to 32 Vdc	9 Vdc to 32 Vdc	9 Vdc to 28 Vd
Input power (current)	45 mA	40 mA	40 mA	65 mA	4 mA to 28 mA	4 mA to 24 mA
Freq. response (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 volt. protection	Yes	Yes	Yes	Yes	Yes	Yes
Short circuit 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.

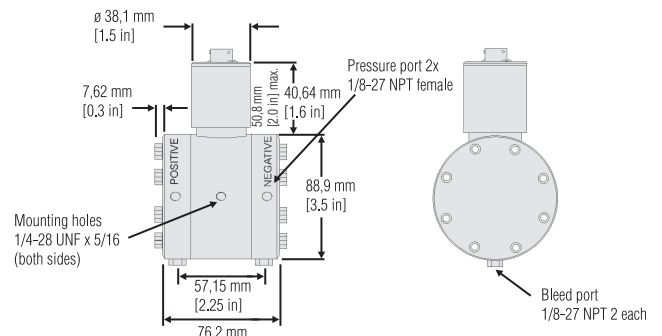
\*\* Pins B and C are internally connected.

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

## TYPICAL SYSTEM DIAGRAM



## MOUNTING DIMENSIONS AND CHARACTERISTICS



# Model Z

# Low Range Wet/Wet Differential Pressure Transducer

## RANGE CODES

Range Code	Available ranges
AN	±0.5 psid
AP	±1 psid
AR	±2 psid
AT	±5 psid
AV	±10 psid
BJ	±15 psid
BL	±25 psid
BM	±30 psid

## NOTES

1. Availability varies according to range.
2. 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.)
3. 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.
4. No mating connector necessary for cable option.
5. Some pressure port options may require axial orientation.
6. Only available with unamplified option 2u.
7. Only available with amplified options.
8. Only available with Vdc output options 2b, 2c.
9. Consult factory for TEDS availability with amplified models.
10. Range dependent; consult factory. Termination dependent; consult factory.
11. Internal amp and termination dependent; consult factory.
12. 5000 ohm bridge required.

\*\* Option: also available, equivalent inches of water column, inches of HG column, mBar or kPa for pressure ranges

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 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.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

For more information about Sensing and Control products, visit [www.honeywell.com/sensing](http://www.honeywell.com/sensing) or call +1-815-235-6847  
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.**

Sensing and Control  
Automation and Control Solutions  
Honeywell  
1985 Douglas Drive North  
Golden Valley, MN 55422 USA  
+1-815-235-6847  
[www.honeywell.com/sensing](http://www.honeywell.com/sensing)

008720-1-EN IL50 GLO  
May 2008  
Copyright © 2008 Honeywell International Inc. All rights reserved.

# Honeywell