INTEGRATED PRESSURE TRANSDUCER

Honeywell's Integrated Pressure Transducer (IPT) provides high accuracy pressure data in an industry-standard SPI digital format. The core of the IPT is a proven Honeywell silicon piezoresistive pressure sensor with both pressure and temperature-sensitive elements. The IPT is small and lightweight and can be easily integrated by the user into a wide variety of applications that require high performance in a small package. Applying the coefficients stored in the on-board EEPROM to the normalized IPT pressure and temperature output yields highly accurate and stable pressure readings over the -40 to 85°C compensated temperature range.

FEATURES AND BENEFITS

HIGH ACCURACY OVER A WIDE TEMPERATURE RANGE

• ±0.04% FS Total Error Band (absolute pressure units) ±0.10% FS Total Error Band (gauge/differential pressure) from -40 to +85°C. (1)

DIGITAL SPI OUTPUT - INDUSTRY STANDARD INTERFACE

 Ready communication between µController/µProcessor and the IPT.

STORED CORRECTION COEFFICIENTS IN EEPROM

- Ready to use: No additional pressure and temperature calibration necessary.
- No additional signal compensation needed to achieve a highly accurate pressure reading.

SMALL AND VERSATILE

- Volume $\sim 1 \text{ in}^3 (16 \text{ cm}^3)$
- Lightweight Less than 10 grams
- Media Interface Handles most dry gas media

APPLICATIONS

- Air Data Computers
- Altimeters
- Cabin Air Pressure
- Engine Test Systems
- Flight Test Systems

- Meteorology
- Flow and Pressure Calibrators
- Instrumentation and Analytical Equipment
- Research and Developments



SPECIFICATIONS					
PERFORMANCE (1)					
Total Error	(from -40 to 85°C); ±0.04%FS absolute; ±0.10%FS gauge, differential; ±0.20%FS 1 psi gauge				
Temperature Range	Operating -40 to 85°C (-40 to 185°F); Storage: -55 to 125°C (-67 to 257°F)				
Long Term Stability	0.025% FS max per year typical				
MECHANICAL					
Pressure Ranges & Type	See Ordering Information				
Pressure Units	PSI ⁽²⁾				
Media Compatibility	Suitable for non-condensing, non-corrosive, and non-combustible gases				
Weight ⁽³⁾	≈ 8.0 grams (absolute); ≈ 9.7 grams (gauge, differential)				
ELECTRICAL					
Output	24-bit pressure value; 16-bit temperature value; 256 x 8 EEPROM configuration				
Power Requirements	Supply Voltage: 4 to 12 VDC				
Current Consumption	6 mA typical, 7.5 mA max				
Interface	3.3V SPI (mode 1,1) SCLK ≤5 Mhz				
Sample Rate	166 samples/second				
ENVIRONMENTAL (3)					
Overpressure	3x FS				
Burst Pressure	3x FS				
Mechanical Shock	DO-160E Section 7.0, Category A, Figure 7.2, Operational Standard				
Thermal Shock	Storage Temperature Cycling per JESD22-104, Section 5.0: -55°C to +125°C				
Vibration	DO-160E Section 8, Category H, Aircraft Type 2, Aircraft Zones 1 & 2				
RoHS	Compliant				

⁽¹⁾ Total Error is the sum of worst-case linearity, repeatability, hysteresis, thermal effects, and calibration errors over the operating temperature range. Accuracy is only achieved after applying the correction coefficients and algorithm as shown in section 3.2. of User's Manual (FS = Full Scale). For total error calculations of differential units, "Full Scale" is the pressure difference between the minimum and maximum pressures. For example, full scale for a 1 psid IPT is 2 psi (-1 to +1 psi). Pressure range 1psi gauge has total error of ±0.20% FS.

(2) After applying the correction coefficients stored in EEPROM, the resultant pressure reading is expressed in PSI (pounds per square inch).

(3) Not including mounting hardware.

ORDERING INFORMATION

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FULL SCALE PRESSURE RANGE				
	Absolute	Gauge	Differential	
0001	N/A	1 PSI ⁽¹⁾	±1 PSI	
0002	N/A	N/A	±2 PSI	
0005	N/A	5 PSI	N/A	
0020	20 PSI	20 PSI	N/A	
0050	50 PSI	N/A	N/A	

TYPE		P1 PRESSURE	P2 PRESSURE
Α	Absolute	0 (vacuum) to FS	n/A
G	Gauge	Reference to FS	Reference
D	Differential	+FS to -FS rel. to P2	+FS to -FS rel. to P1

DIGITAL INTERFACE VOLTAGE

33 3.3 Volts

3.3 Volts

POWER SUPPLY

R Regulated, 4-12Vdc

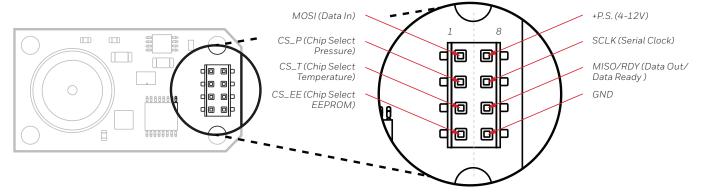
OPTIONS

A Demonstration Kit⁽⁴⁾

E Certificate of Conformance

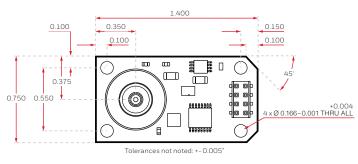
(4) Demonstration kit includes RS-232 Cable, Demo Board, AC adapter, MS Windows Software, and User's Manual.

CONNECTOR DIMENSIONS

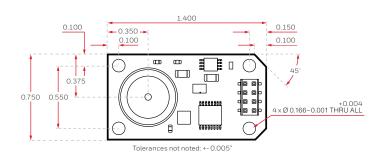


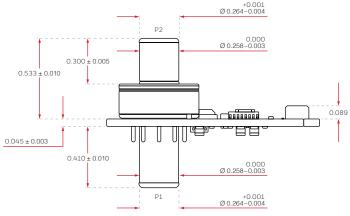
IPT DIMENSIONS

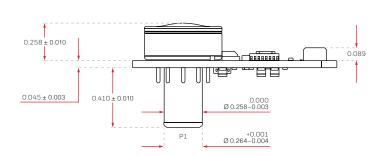
IPT0001D33R-E



IPT0020A33R-E







ESD (electrostatic discharge) sensitive device

Damage may occur when subjected to high energy ESD. Proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

EOS (electrical overstress) sensitive device

Damage may occur when subjected to EOS. Do not exceed specified ratings to avoid performance degradation or loss of functionality.

For more information

aerospace.honeywell.com/en/learn/products/sensors/precision-pressure

THE FUTURE IS WHAT WE MAKE IT

Honeywell Aerospace

1944 East Sky Harbor Circle Phoenix, AZ 85034 aerospace.honeywell.com

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单击下面可查看定价,库存,交付和生命周期等信息

>>Honeywell(霍尼韦尔)