

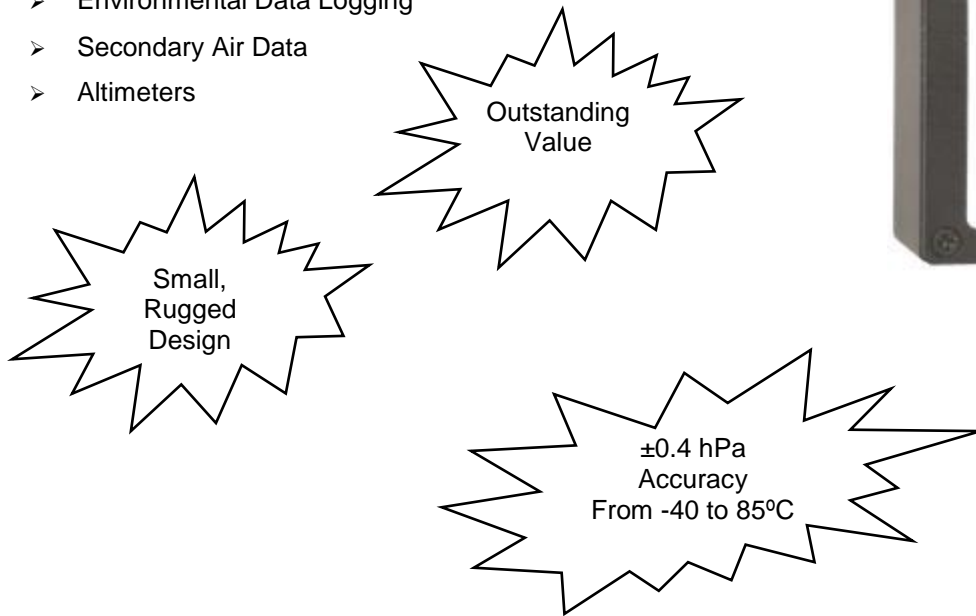
# Honeywell Precision Barometer HPB

**Honeywell**

The Honeywell Precision Barometer (HPB) offers outstanding value to instrument builders requiring accurate and stable barometric measurements in real-world conditions. The HPB uses proven silicon sensor technology with microprocessor-based signal compensation, eliminating the need to insulate or temperature-regulate the barometer. The HPB has a pressure range of 500 to 1200 hPa. The HPA, intended for altimeter applications, provides a pressure range of 0 to 17.6 psia.

## APPLICATIONS:

- AWOS Weather Systems
- Remote Meteorological Stations
- Ocean Data Buoys
- Environmental Data Logging
- Secondary Air Data
- Altimeters



## FEATURES AND BENEFITS

ISO-9001  
ISO-14001

- ▶ **High Accuracy**  
±0.4 hPa max from -40 to 85°C  
±0.03% FS max from -40 to 85°C
- ▶ **Two-tiered accuracy including temperature errors over -40 to 85°C**  
– HPB, ±0.4 hPa or ±0.8 hPa; HPA, ±0.03% or ±0.06% FS Max.  
**Simplifies System Design** – there is no need to insulate, temperature-regulate or provide additional signal compensation.
- ▶ **Multiple Interface Options**
- ▶ **Easy Interface, Plug-and-Play for your system requirements.**  
**TTL** – for lowest power consumption (33 milliwatts)  
**RS-232** – receives commands and sends data to a single serial port of a computer.  
**RS-485** – up to 89 units can be connected to a two-wire multidrop bus.
- ▶ **Proven Honeywell Technology**
- ▶ **Stable and Reliable** – Honeywell has been building the world's highest performance silicon pressure sensors for over thirty years.

## SPECIFICATIONS

### Performance Specifications<sup>(1)</sup>

**Total Error Band** : (from -40 to 85°C)  
 HPB200: ±0.4 hPa maximum  
 HPB100: ±0.8 hPa maximum  
 HPA200: ±0.03% FS maximum  
 HPA100: ±0.06% FS maximum  
 Temperature: ±1°C (at sensing element)  
**Temperature Range:**  
 Operating -40 to 85°C (-40 to 185°F)  
 Storage: -55 to 90°C (-67 to 194°F)  
**Sample Rate**<sup>(3)</sup>: 8.33ms to 51.2 min  
**Resolution:**  
 0.0011% FS<sup>(4)</sup>  
**Response Delay:**  
 (1000/update rate) +1ms, minimum 17ms  
**Long Term Stability**<sup>(6)</sup>:  
 HPB: 0.25 hPa max per year  
 HPA: 0.02% FS max per year

### Mechanical Specifications

**Pressure Ranges:**  
 HPB: 500 to 1200 hPa (1 hPa = 1 mbar)  
 HPA: 0 to 17.6 psia  
**Pressure Units**<sup>(5)</sup>: atm, bar, cmwc, ftwc, hPa, inHg, inwc, kg/cm<sup>2</sup>, KPa, mBar, mmHg, MPa, mwc, psi, user, lcom, pfs  
**Media Compatibility:** Suitable for non-condensing, non-corrosive, and non-combustible gases.  
**Weight:** 5 oz. (142 gm) without fittings

### Electrical Specifications

**Output:** TTL, RS-232, RS-485  
**Power Requirements:**  
 TTL Supply Voltage: 6 to 26 VDC  
 RS-232, RS-485 Supply Voltage: 5.5 to 30 VDC  
**Operating Current:**  
 RS-232/RS-485: 17-30mA; TTL: 6-9 mA  
**Baud Rate**<sup>(3)</sup>: 1200, 2400, 4800, 9600, 14400, 19200, 28800  
**Bus Addressing**<sup>(3)</sup>: Address up to 89 units.

### Environmental Features<sup>(2)</sup>

**Humidity Sensitivity:** Negligible  
**Acceleration Sensitivity:** Negligible  
**Mechanical Shock:** 1500g, 0.5ms half sine  
**Temp Shock:** 24 1-hour cycles, -40 to 85°C  
**Vibration:** 0.5in or 20G's, 20Hz – 2K Hz

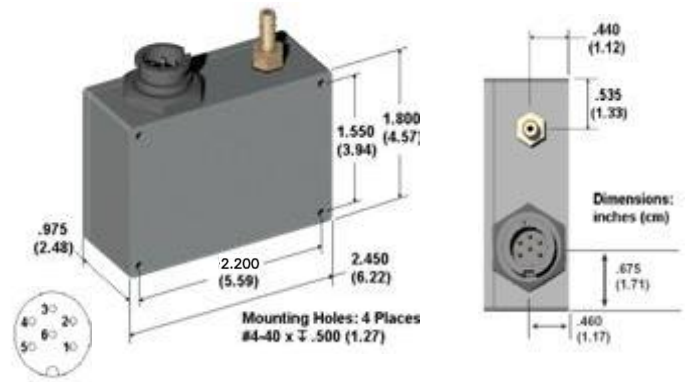
(1) Accuracy is the sum of worst case linearity, repeatability, hysteresis, thermal effects and calibration errors from -40 to 85°C. Calibration is traceable to NIST. (2) Mechanical Shock tested per MIL-STD-883D, M2002.3, Cond. B. Vibration tested per MIL-STD-883D, M2007.2, Cond. A. (3) User Configurable. (4) Best resolution obtained with PFS (percent full scale) pressure units. (5) Demonstration kit includes unit, power supply/data cable (120V), demonstration software, TTL-to-RS-232 converter (TTL only), and user manual. (6) Beyond max. total error band when continuously powered at 25±10°C, <90%RH and 28 to 32 inHg atmospheric pressure.

## CASE OUTLINE

Pin#	Signal Name
1	RS-232(TD)/RS-485(B)
2	RS-232(TD)/RS-485(A)
3	Case Ground
4	Common Ground(GND)
5	DC Power In(+)
6	N/C

Pin #	Signal Name
1	TTL XMIT
2	TTL RCV
3	Case Ground
4	Common Ground(GND)
5	DC Power In(+)
6	Power Control



## ORDERING INFORMATION

### Honeywell Precision Barometer

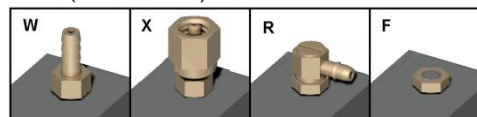
#### APPLICATION TYPE

**HPB** Barometer Application, 500 to 1200 hPa (1 hPa = 1 mbar)  
**HPA** Altimeter Application, 0 to 17.6 psia

ACCURACY	BAROMETER	ALTIMETER
<b>200</b>	±0.4 hPa max	±0.03% FS max
<b>100</b>	±0.8 hPa max	±0.06% FS max

#### PRESSURE CONNECTION

**W** Brass barbed (1/8 inch ID tubing)  
**X** Brass Swagelok™ (1/8 inch female)  
**R** Brass barbed, right angle (1/8 inch ID tubing)  
**F** Filter (blocks debris)



#### OUTPUTS

**2D** RS-232  
**5D** RS-485  
**TT** TTL

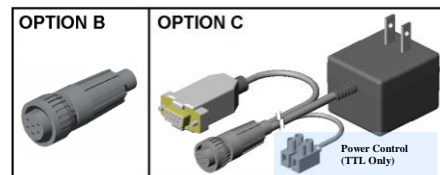
#### ELECTRICAL CONFIGURATION AND CONNECTION

**A** 6-pin plastic connector

#### OPTIONS

**A** Demonstration Kit<sup>(5)</sup> (RS-232, TTL only)  
**B** Mating Connector (See Below)  
**C** Power Supply/Data Cable (RS-232, TTL with Option G only, See Below)  
**G** TTL to RS-232 Converter (TTL only)

HPB 200 W 2D A -B



## Find out more

For more information on Honeywell's Precision Pressure Transducers visit us online at [www.pressuresensing.com](http://www.pressuresensing.com) or contact us at 1-800-601-3099 (International: 1-602-365-3099). Customer Service Email: [D&Sorders@honeywell.com](mailto:D&Sorders@honeywell.com).

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