

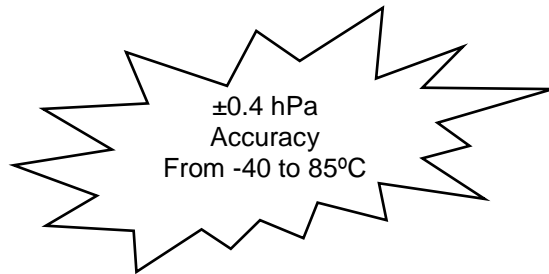
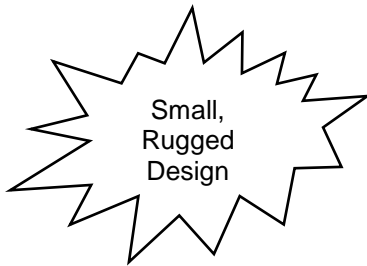
# Honeywell Precision Barometer HPB

**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
- ▶ **Multiple Interface Options**
- ▶ **Proven Honeywell Technology**
- ▶ **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.
- ▶ **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.
- ▶ **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>

**Accuracy:** (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:

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

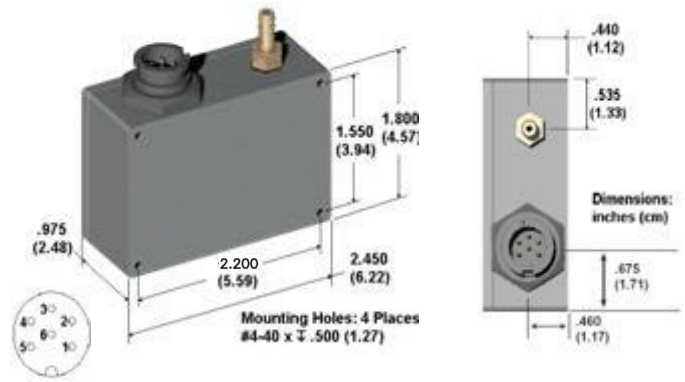
(1) Accuracy is the sum of worst case linearity, repeatability, hysteresis, thermal effects and calibration errors from -40 to 85°C. Calibration is traceable to NIST. (2) Mechanical Shock tested per MIL-STD-883D, M2002.3, Cond. B. Vibration tested per MIL-STD-883D, M2007.2, Cond. A. (3) User Configurable. (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.

## 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

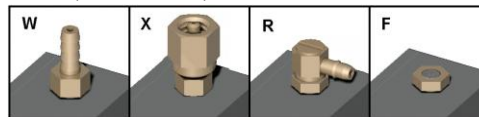
**HPB** Barometer Application, 500 to 1200 hPa (1 hPa = 1 mbar)

**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

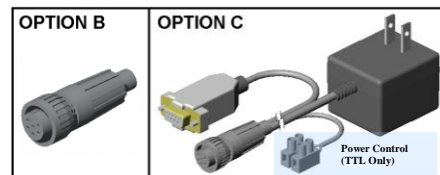
#### ELECTRICAL CONFIGURATION AND CONNECTION

- 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.honeywell.com/pressuresensing](http://www.honeywell.com/pressuresensing) or contact us at 800-323-8295 or 763-954-2474. Customer Service Email: [ps.customer.support@honeywell.com](mailto:ps.customer.support@honeywell.com).

Honeywell reserves the right to make changes to improve reliability, function or design. Honeywell does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights nor the rights of others. Covered by one or more of the following US Patents: 4,918,992 and 4,788,521.

Honeywell Aerospace  
 Honeywell International Inc.  
 12001 Highway 55  
 Plymouth, MN 55441  
[www.honeywell.com](http://www.honeywell.com)

ADS-14181  
 June 2009  
 ©2009 Honeywell International Inc.

# Honeywell