

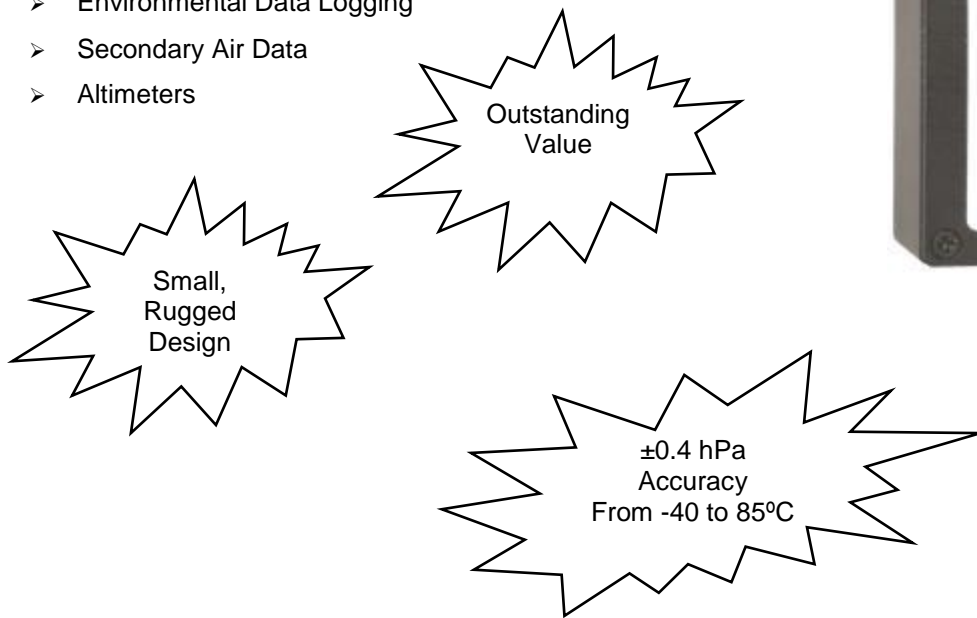
Honeywell Precision Barometer HPB

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⁽¹⁾

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⁽³⁾: 8.33ms to 51.2 min

Resolution:

0.0011% FS⁽⁴⁾

Response Delay:

(1000/update rate) +1ms, minimum 17ms

Long Term Stability⁽⁶⁾:

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⁽⁵⁾: atm, bar, cmwc, ftwc, hPa, inHg,

inwc, kg/cm², 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⁽³⁾: 1200, 2400, 4800, 9600,

14400, 19200, 28800

Bus Addressing⁽³⁾: Address up to 89 units.

Environmental Features⁽²⁾

Humidity Sensitivity: Negligible

Acceleration Sensitivity: Negligible

Mechanical Shock: 1500g, 0.5ms half sine

Temp Shock: 24 1-hour cycles, -40 to 85°C

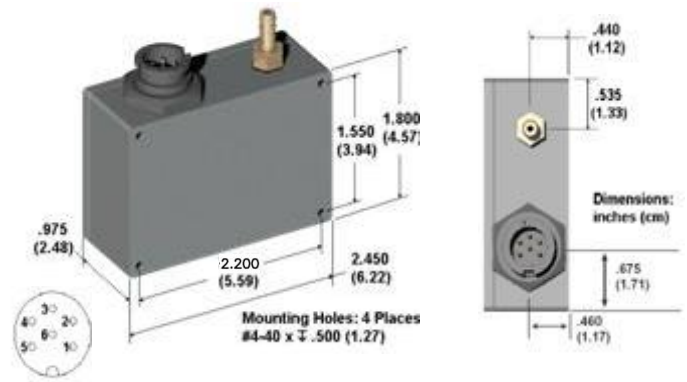
Vibration: 0.5in or 20G's, 20Hz – 2K Hz

(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

200

BAROMETER

±0.4 hPa max

ALTIMETER

±0.03% FS max

100

±0.8 hPa max

±0.06% FS max

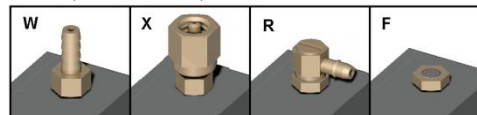
PRESSURE CONNECTION

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

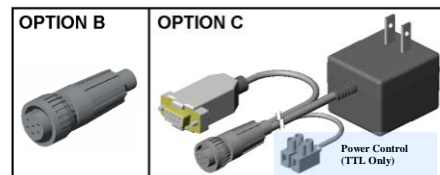
A Demonstration Kit⁽⁵⁾ (RS-232, TTL only)

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 or contact us at 1-800-601-3099 (International: 1-602-365-3099). Customer Service Email: D&Sorders@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.

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