

## Precision Pressure Transducer PPT

Honeywell's precision pressure transducer (PPT) offers extraordinary value with high accuracy over a wide temperature range. The PPT combines proven silicon sensor technology with microprocessor-based signal conditioning to provide an extremely smart pressure transducer. Available in a compact, rugged design, the PPT has many software features that support a wide range of applications.

### APPLICATIONS:

- Secondary Air Data
- Altimeters
- Engine Testing
- Flight Testing
- Meteorology
- Flow and Pressure Calibrators
- Instrumentation and Analytical Equipment
- Process Control
- Research and Development

±0.05%  
Accuracy from  
-40 to 85°C

Many  
Software  
Features

Digital and  
Analog



CE Qualified

ISO-9001  
ISO-14001

### FEATURES AND BENEFITS

- ▶ **High Accuracy**  
±0.05% FS typical accuracy  
from -40 to 85°C
- ▶ **Smart, Digital Sensing and Control**
- ▶ **Versatile and Configurable**
- ▶ **User Selectable Software Features**
- ▶ **Simplifies System Design** - No additional signal compensation needed to gain the benefits of a very accurate sensor.
- ▶ **Efficient Data Acquisition** - Connect up to 89 units on a multidrop bus using built-in RS-485 capability.  
**Easy Interface** - Directly connects to PC via communication ports.  
**Closes the Loop** - Smart PPT makes control decisions.
- ▶ **Works with existing and new systems.** - All units have 0-5V analog and either RS-232 or RS-485 digital outputs.  
**Handles most dry gas media.**  
**Optimizes Output** - User-configurable pressure units, sampling, update rate.  
**Flags Problems** - Internal diagnostics set flags, provide alarms.
- ▶ Baud Rate, Parity Setting, Continuous Broadcast, ASCII or Binary Output, Sensor Temperature Output (°C or °F), Deadband, Sensitivity, Tare Value, Configurable Analog Output

## SPECIFICATIONS

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

**Total Error Band:** (from -40 to 85°C)

Digital:  $\pm 0.05\%$  FS Typ.,  $\pm 0.10\%$  FS Max.<sup>(2)</sup>

Analog:  $\pm 0.06\%$  FS Typ.,  $\pm 0.12\%$  FS Max.<sup>(2)</sup>

Temperature:  $\pm 1^\circ\text{C}$  (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>(5)</sup>:** 8.33ms to 51.2 min

**Resolution:**

Digital: Up to 0.0011% FS

Analog: 1.22mV steps (12 bits)

**Response Delay:**

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

**Long Term Stability<sup>(7)</sup>:** 0.025%FS max per year

## Mechanical Specifications

**Pressure Ranges and Type:**

See Ordering Information

**Pressure Units<sup>(6)</sup>:** atm, bar, cmwc, ftwc, hPa, inHg, inwc, kg/cm<sup>2</sup>, KPa, mBar, mmHg, MPa, mwc, psi, user, lcom, pfs

**Static Pressure (Differential Only) :**

$\leq 150\text{psi}$ : no effect on accuracy of PPT

$> 150\text{psi}$ : out of spec, returns spec  $\leq 150\text{psi}$

**Media Compatibility:** Suitable for non-condensing, non-corrosive, and non-combustible gases.

*PPT available for other gases and fluids.*

**Weight:** 5 oz. (142 gm) without fittings

## Electrical Specifications

**Output:**

RS-232 Digital w/0-5V Analog<sup>(5)</sup>

RS-485 Digital w/0-5V Analog<sup>(5)</sup>

**Power Requirements:**

Supply Voltage: 5.5 to 30 VDC

Operating Current: Standard: 17-30mA; CE: 13-25mA

**Baud Rate<sup>(6)</sup>:** 1200, 2400, 4800, 9600,

14400, 19200, 28800

**Bus Addressing<sup>(6)</sup>:** Address up to 89 units

Environmental Features<sup>(3)</sup>

**Overpressure:** 3x FS, maximum 600psi

**Burst Pressure:** 3x FS, maximum 700psi

**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. Typical is the average of absolute value of errors at all pressures and temperatures. Full scale for differential ranges is the sum of + and - ranges. Pressure range 1psi gauge has digital accuracy of  $\pm 0.10\%$  FS typical,  $\pm 0.20\%$  FS maximum; analog accuracy of  $\pm 0.12\%$  FS typical,  $\pm 0.24\%$  FS maximum. Calibration is traceable to NIST. (2) Tighter accuracy available on some models. Consult factory. (3) Exposure to overpressure will not permanently affect calibration or accuracy of unit. Burst pressure is the sum of the measured pressure plus the static pressure and exceeding it may result in media escape. Mechanical Shock tested per MIL-STD-883D, M2002.3, Cond. B. Vibration tested per MIL-STD-883D, M2007.2, Cond. A. (4) CE Mark version recommended for installations with EMI. CE Mark version tested to show compliance with European EMC Directive per IEC 61326. See [www.pressuresensing.com](http://www.pressuresensing.com) for information on test levels and results (5) User configurable. (6) Demonstration kit includes unit, power supply/data cable (120V), demonstration software, and user manual. (7) Beyond max. total error band when continuously powered at  $25\pm 10^\circ\text{C}$ ,  $<90\%RH$  and 28 to 32 inHg atmospheric pressure.

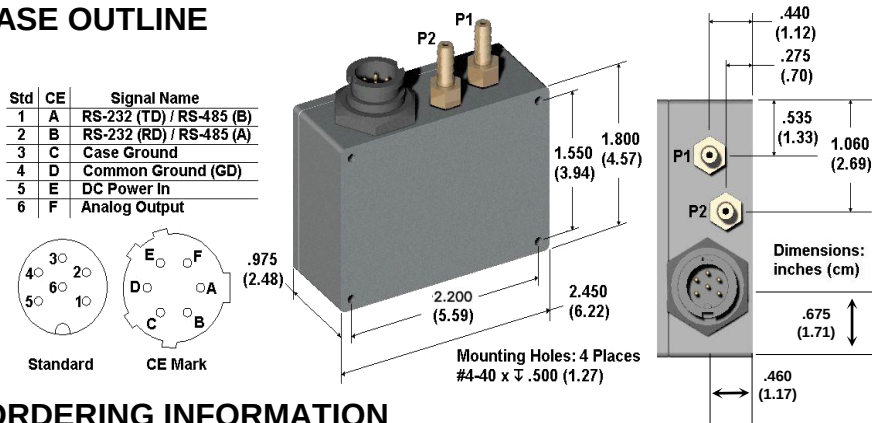
## Find out more

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).

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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## CASE OUTLINE



## ORDERING INFORMATION

## PPT Precision Pressure Transducer

## FULL SCALE PRESSURE RANGE

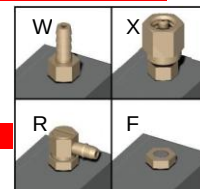
|      | Absolute | Gauge                | Differential  |
|------|----------|----------------------|---------------|
| 0001 | n/a      | 1 PSI <sup>(1)</sup> | $\pm 1$ PSI   |
| 0002 | n/a      | 2 PSI                | $\pm 2$ PSI   |
| 0005 | n/a      | 5 PSI                | $\pm 5$ PSI   |
| 0010 | n/a      | 10 PSI               | $\pm 10$ PSI  |
| 0015 | 15 PSI   | n/a                  | n/a           |
| 0020 | 20 PSI   | 20 PSI               | $\pm 20$ PSI  |
| 0050 | 50 PSI   | 50 PSI               | $\pm 50$ PSI  |
| 0100 | 100 PSI  | 100 PSI              | $\pm 100$ PSI |
| 0300 | 300 PSI  | 300 PSI              | $\pm 300$ PSI |
| 0500 | 500 PSI  | 500 PSI              | $\pm 500$ PSI |

| TYPE           | P1 Pressure           | P2 Pressure           |
|----------------|-----------------------|-----------------------|
| A 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 |

## P1 PRESSURE CONNECTION

*Absolute, Gauge, Differential*

- 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)



## P2 PRESSURE CONNECTION

*Gauge, Differential*

- 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)

*Absolute*

N Not Applicable

## OUTPUTS

- 2V RS-232 digital, 0-5V analog
- 5V RS-485 digital, 0-5V analog

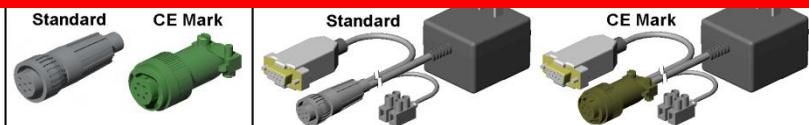
## ELECTRICAL CONFIGURATION AND CONNECTION (4)

- A Standard, 6-pin plastic connector
- B CE Mark, 6-pin metal connector

## OPTIONS

- A Demonstration Kit<sup>(6)</sup> (RS-232 only)
- B Mating Connector (See Below)
- C Power Supply/Data Cable (RS-232 only, See Below)

PPT 0100 A W N 2V A -A



# Honeywell