

# MODEL FP2000

008835

Issue 7

## Differential Pressure Transducer

### DESCRIPTION

The FP2000 series is a configurable differential pressure transducer which allows the customer to select the configuration which best fits the needs of the application. Choose from multiple accuracies, outputs, pressure ports, electrical terminations, and pressure ranges.

The FP2000 is available with differential wet/wet and wet/dry configurations.

### DIFFERENTIATION

- Welded stainless steel construction
- Customized specifications available
- Configurable platform enables a sensor to be built to customer requirements
- Bi-directional functionality of pressure measurement
- Optional bi-directional calibration available
- Small package size

### VALUE TO CUSTOMERS

- Built on the Honeywell history of higher-quality pressure sensing technologies
- Configurable platform creates a wide range of standard configurations
- Broad compensated temperature ranges
- Multiple outputs to choose from to meet variety of application needs

### POTENTIAL APPLICATIONS

- Test stands (automotive, aerospace, and industrial)
- R&D test labs
- Hydraulic and pneumatic system monitoring
- Leak detection
- Pump and compressor control
- Tank level measurement
- Monitor pressure changes for preventive maintenance
- Flow rate measurement

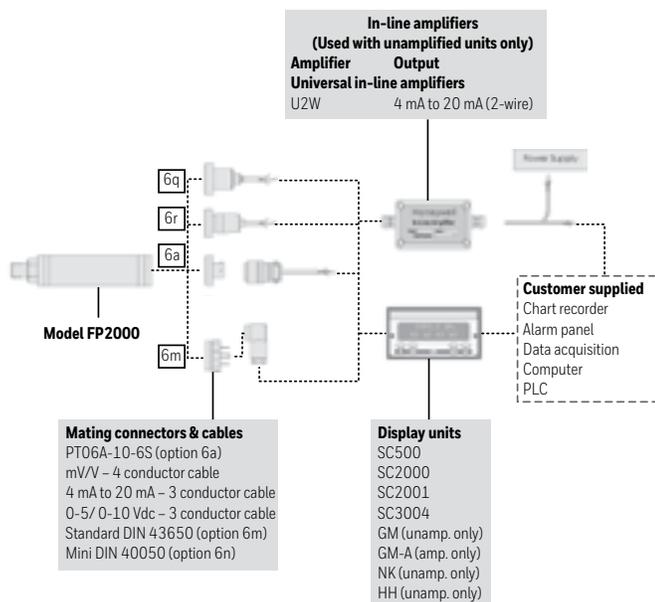


### FEATURES

- mV/V, 4 mA to 20 mA,  $\pm 5$  Vdc,  $\pm 10$  Vdc
- Differential (wet/wet, wet/dry)
- Multiple electrical connector and pressure port offerings
- Intrinsically safe option
- CE available

FP2000 pressure sensors are custom built from stocked components. Please see [sps.honeywell.com/ast](http://sps.honeywell.com/ast) for updated listings

FIGURE 1. TYPICAL SYSTEM DIAGRAM



### PORTFOLIO



From general process pressure transducers to hazardous location pressure products, Honeywell offers a comprehensive selection of gage, absolute, differential, vacuum, and barometric pressure transducers to meet market demands. Each of our transducers can be customized to meet your needs, whatever your application. To view the entire product portfolio, [click here](#).

**Honeywell**

# DIFFERENTIAL PRESSURE TRANSDUCER, MODEL FP2000

**TABLE 1. PERFORMANCE SPECIFICATIONS**

CHARACTERISTIC	MEASURE
Accuracy	see Note 1
Output (selectable)	mV/V, 4 mA to 20 mA (two wire), ±5 Vdc, ±10 Vdc
Resolution	Infinite

**TABLE 2. ELECTRICAL SPECIFICATIONS**

CHARACTERISTIC	MEASURE
Amplified (4 mA to 20 mA; ±5 Vdc)	9 Vdc to 28 Vdc
Amplified (±10 Vdc)	15 Vdc to 28 Vdc
Unamplified (mV/V)	10 Vdc

**TABLE 3. MECHANICAL SPECIFICATIONS**

CHARACTERISTIC	MEASURE
Media	Gas, liquid
Overload safe Positive (+) direction Model FDW and FDD	4X full scale or 3000 psi whichever is less
Overload safe Negative (-) direction Model FDW and FDD	4X full scale or 250 psi whichever is less
Overload burst Positive (+) direction Model FDW and FDD	3000 psi
Overload burst Negative (-) direction Model FDW and FDD	500 psi
Wetted material	Ha C276 & 316L Stainless Steel

**Note 1:** Unless otherwise specified on order, amplified units with 4 mA to 20 mA output will provide 4 mA at 0 psid and 20 mA at positive full scale and the unit will not operate in the negative direction. Consult Factory to specify 4 mA at negative full scale and 20 mA at positive full scale.

**Note 2:** All amps add 2 inches to sensor housing length.

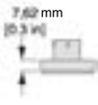
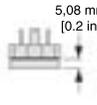
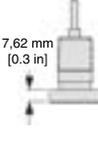
**TABLE 4. ENVIRONMENTAL SPECIFICATIONS**

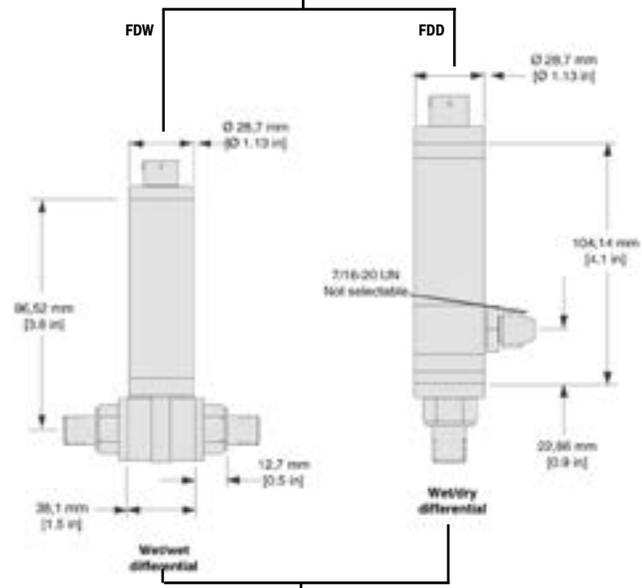
ORDER CODE	RANGE	TEMPERATURE, COMPENSATED	TEMPERATURE, OPERATING <i>Unamplified Output: Option 2U</i>	TEMPERATURE, OPERATING <i>Voltage Output: Option 2D,2E,2F,2G Current Output: Option 2P,2Y,2N</i>
FDD	less than 1 psi	10 °C to 45 °C [50 °F to 110 °F]	-40 °C to 116 °C [-40 °F to 240 °F]	-29 °C to 85 °C [-20 °F to 185 °F]
	1 psi and less than 5 psi	5 °C to 50 °C [40 °F to 120 °F]		
	5 psi and above	5 °C to 60 °C [40 °F to 140 °F]		
FDW	less than 1 psi	10 °C to 45 °C [50 °F to 110 °F]		
	1 psi and less than 5 psi	5 °C to 50 °C [40 °F to 120 °F]		
	5 psi and above	5 °C to 60 °C [40 °F to 140 °F]		
Temperature, error band	0.10 % accuracy	±0.5 % full scale	-	-
	0.25 % accuracy	±1.0 % full scale	-	-

# DIFFERENTIAL PRESSURE TRANSDUCER, MODEL FP2000

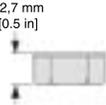
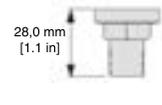
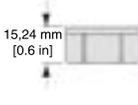
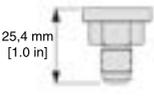
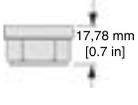
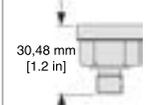
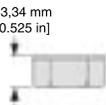
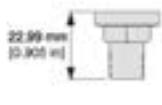
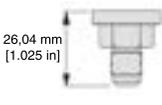
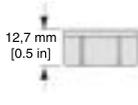
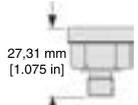
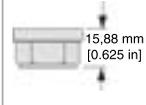
**FIGURE 2. MOUNTING DIMENSIONS**

**ELECTRICAL TERMINATION**

Code 6a: 6-pin, vented, Bendix style	Code 6m: 4-pin, vented, standard DIN (43650)	Code 6q: 4-conductor, vented, integral cable, 1,52 m [5 ft]	Code 6r: 4-conductor, vented, integral cable, conduit fitting 1,52 m [5 ft]
			



**PRESSURE PORTS**

	Code 5a 1/4-18 NPT female	Code 5b 1/4-18 NPT male	Code 5c 7/16-20 UNF female	Code 5d 7/16-20 UNF male	Code 5f G 1/4 B female	Code 5g G 1/4 B male
<b>Up to 1000 psi</b>						
<b>Up to 1000 psi</b>						

# DIFFERENTIAL PRESSURE TRANSDUCER, MODEL FP2000

## HOW TO ORDER

The **FP2000 Order Code** is an easy way for you to order exactly what you want the factory to build. Simply make one selection in each of the six required categories. Choose adders and accessories only if you require them. By visiting our Web site at [sps.honeywell.com/ast](http://sps.honeywell.com/ast) you can view complete technical specifications for the FP2000.

### Step 1

#### TRANSDUCER TYPE

- |   |           |
|---|-----------|
| <input type="checkbox"/> Differential - wet/wet | Type Code |
| <input type="checkbox"/> Differential - wet/dry | FDW       |
|   | FDD       |

#### Unit type

- |                               |  |
|-------------------------------|--|
| <input type="checkbox"/> psi  | <input type="checkbox"/> bar                 |
| <input type="checkbox"/> torr | <input type="checkbox"/> in Hg               |
| <input type="checkbox"/> mBar | <input type="checkbox"/> mm Hg               |
| <input type="checkbox"/> kPa  | <input type="checkbox"/> in H <sub>2</sub> O |

### Step 2

#### PRESSURE RANGE

- |                                  |            |                                   |            |
|----------------------------------|------------|-----------------------------------|------------|
| Differential                     |            |                                   |            |
|                                  | Range code |                                   | Range code |
| <input type="checkbox"/> 0.5 psi | AN         | <input type="checkbox"/> 100 psi  | BR         |
| <input type="checkbox"/> 1 psi   | AP         | <input type="checkbox"/> 150 psi  | CJ         |
| <input type="checkbox"/> 2 psi   | AR         | <input type="checkbox"/> 200 psi  | CL         |
| <input type="checkbox"/> 2.5 psi | AS         | <input type="checkbox"/> 250 psi  | CN         |
| <input type="checkbox"/> 5 psi   | AT         | <input type="checkbox"/> 300 psi  | CP         |
| <input type="checkbox"/> 10 psi  | AV         | <input type="checkbox"/> 400 psi  | CQ         |
| <input type="checkbox"/> 15 psi  | BJ         | <input type="checkbox"/> 500 psi  | CR         |
| <input type="checkbox"/> 25 psi  | BL         | <input type="checkbox"/> 600 psi  | CS         |
| <input type="checkbox"/> 30 psi  | BM         | <input type="checkbox"/> 750 psi  | CT         |
| <input type="checkbox"/> 50 psi  | BN         | <input type="checkbox"/> 1000 psi | CV         |
| <input type="checkbox"/> 75 psi  | BP         |                                   |            |

#### ACCURACY

- |                                 |               |
|---------------------------------|---------------|
|                                 | Accuracy code |
| <input type="checkbox"/> 0.10 % | 1             |
| <input type="checkbox"/> 0.25 % | 2             |

### Step 3

#### OUTPUT

- |   |                   |                             |
|---|-------------------|-----------------------------|
|   | Basic output code | If adding 1y, 3d, 9e or 14c |
| <input type="checkbox"/> mV/V               | 2u                | 2u                          |
| <input type="checkbox"/> 5 Vdc              | 2d                | 2e                          |
| <input type="checkbox"/> 10 Vdc             | 2g                | 2f                          |
| <input type="checkbox"/> 4 mA to 20 mA      | 2p                | 2y                          |
| <input type="checkbox"/> 4 mA to 20 mA (IS) | 2N                | 2y                          |

NOTE: If any ADDERS are required, the output code must be revised. See step 4.

#### PRESSURE PORT

- |   |           |
|---|-----------|
|   | Port code |
| <input type="checkbox"/> 1/4-18 NPT female      | 5a        |
| <input type="checkbox"/> 1/4-18 NPT male        | 5b        |
| <input type="checkbox"/> 7/16-20 UNF female     | 5c        |
| <input type="checkbox"/> 7/16-20 UNF male       | 5d        |
| <input type="checkbox"/> G 1/4 B female         | 5f        |
| <input type="checkbox"/> G 1/4 B male           | 5g        |
| <input type="checkbox"/> 1/8-27 NPT female      | 5h        |
| <input type="checkbox"/> 1/8-27 NPT male        | 5i        |
| <input type="checkbox"/> M12 x 1.5 male         | 5p        |
| <input type="checkbox"/> M12 x 1.5 female       | 5q        |
| <input type="checkbox"/> 9/16-18 UNF SAE male   | 5r        |
| <input type="checkbox"/> 9/16-18 UNF SAE female | 5s        |

#### ELECTRICAL CONNECTOR

- |   |                |
|---|----------------|
|   | Connector code |
| <input type="checkbox"/> Bendix PTIH-10-6P                    | 6a             |
| <input type="checkbox"/> DIN 43650                            | 6m             |
| <input type="checkbox"/> Mini DIN (40050)                     | 6n             |
| <input type="checkbox"/> Integral polyurethane 5-ft cable     | 6q             |
| <input type="checkbox"/> 1/2 x 14 NPT conduit 5-ft cable exit | 6r             |

### Step 4

#### ADDERS

- |   |            |
|---|------------|
|   | Adder code |
| <input type="checkbox"/> Enhanced thermals            | 1y         |
| <input type="checkbox"/> Differential: 0 °F to 180 °F |            |
| <input type="checkbox"/> Shunt cal                    | 3d         |
| <input type="checkbox"/> CE rating                    | 9e         |
| <input type="checkbox"/> Zero and span adjustments    | 14c        |
| <input type="checkbox"/> mV/V                         | 2u         |
| <input type="checkbox"/> 5 Vdc                        | 2e         |
| <input type="checkbox"/> 10 Vdc                       | 2f         |
| <input type="checkbox"/> 4 mA to 20 mA (CE only)      | 2y         |
| <input type="checkbox"/> 4 mA to 20 mA (IS and CE)    | 2n (2N)    |

NOTE: If you choose any adder output from step 4, you must revise your output code selection using this output code chart. IS outputs available only on ranges up to 5000 psi.

#### ACCESSORIES

Mating connectors only

- |                                   |           |
|-----------------------------------|-----------|
|                                   | Acc. code |
| <input type="checkbox"/> Mini DIN | AA161     |
| <input type="checkbox"/> Bendix   | AA111     |

Mating conn. with 15 ft. cable for Bendix connector (6A)

- |   |               |                 |
|---|---------------|-----------------|
|   | Without shunt | With shunt (3d) |
| <input type="checkbox"/> mV/V               | AA113         | AA513           |
| <input type="checkbox"/> 4 mA to 20 mA      | AA116         | AA516           |
| <input type="checkbox"/> 0 to 5/0 to 10 Vdc | AA117         | AA517           |

### Step 5

#### EXAMPLE ORDER CODE

FDW 1 CN 1Y 2Y 5B 6A

#### Selection

Transducer type  
Accuracy  
Pressure range  
Adders  
Output  
Pressure port  
Electrical output connections

#### Description

Differential wet/wet  
0.10 %  
250 psi  
Enhanced temperature range  
4 mA to 20 mA  
1/4-18 NPT male  
Bendix PTIH-10-6P

#### Code

FDW  
1  
CN  
1y  
2y  
5b  
6a

There must be a code in each of the six basic code boxes. If there are no adders or accessories chosen, leave the boxes blank.

DESCRIPTION	BASIC CODE					ADDER CODE (SEE STEP 4)				
	Type	Accuracy	Range	Output	Pressure	Elect. conn.	Extended	Shunt cal.	IS/CE rated	Pots
Order code										
Accessory code										

Zero and span adjustments are located on the side. See drawing for details. No zero and span adjustments are available on mV/V output option.