

## Industrial Pressure Sensors, Intrinsically Safe

Model IP IS

32309483

Issue 1

Datasheet



### DESCRIPTION

Honeywell's Industrial Pressure Sensors, Intrinsically Safe<sup>1</sup>, Model IP IS, are a new platform of sensors designed to offer repeatable, reliable and accurate pressure measurements over time. These rugged, stainless steel, all-welded pressure sensors are pre-configured with the most commonly requested options. They may be used in many demanding, harsh environments and with a variety of media. Configurations for current measurements are fully temperature compensated and calibrated.

### VALUE TO CUSTOMERS

- **Configurable:** Simplifies flexibility of sensor use in the application
- **Durable and accurate:** Wide standard compensated temperature range; standard accuracy and enhanced accuracy option; shock and vibration tested

### DIFFERENTIATION

- Standard compensated temperature range -10 °C to 85 °C [14 °F to 185 °F]
- Standard accuracy of  $\pm 0.25$  % BFSL and optional enhanced accuracy option of  $\pm 0.15$  % BFSL

### FEATURES

- All welded, 300 series stainless steel and Hastelloy®
- 7 bar to 350 bar [100 psi to 5000 psi] pressure range
- Accuracy options:
  - Standard accuracy: IPG2 provides  $\pm 0.25$  % BFSL<sup>2</sup>
  - Optional enhanced accuracy: IPG1 provides  $\pm 0.15$  % BFSL<sup>2</sup>
- 4 mA to 20 mA current output
- $\pm 2$  %FS Total Error Band<sup>3</sup> (see Figure 1)
- IP65 rated protection
- <2 ms response time provides accurate, high-speed measurement
- CE and RoHS compliant<sup>1</sup>

### POTENTIAL APPLICATIONS

#### Industrial

- Oil and gas industrial process control (gas head control panels)
- Factory automation/industrial equipment
- Pump/compressor control
- Power generation (wind, propulsion)

#### Transportation

- Construction equipment

### PORTFOLIO

The Model IP Intrinsically Safe Series joins the [Model IP Platform](#) of Industrial Pressure Sensors.

<sup>1</sup> NEPSI approved for China sales only

<sup>2</sup> Best Fit Straight Line; includes pressure non-linearity (BFSL), pressure hysteresis and non-repeatability; thermal errors are not included

<sup>3</sup> Includes zero error, span error, thermal effect on zero, thermal effect on span, thermal hysteresis, pressure-non-linearity, pressure hysteresis and non-repeatability

# Industrial Pressure Sensors, Intrinsically Safe, Model IP IS

**Table 1. Pressure Range Specifications at 25 °C [77 °F]**

psi (gage)											
Pressure	100	150	200	250	500	750	1000	1500	2000	3000	5000
Proof pressure	400	450	600	750	1500	2000	2000	3000	4000	6000	7500
Burst pressure	1000	1500	2000	2500	5000	7500	10000	15000	15000	30000	30000

  

bar (gage)											
Pressure	7	10	16	25	40	60	100	160	250	350	
Proof pressure	28	30	48	75	80	120	200	320	500	700	
Burst pressure	100	100	160	250	400	600	1000	1600	2068	2068	

**Table 2. Physical and Environmental Specifications**

Characteristic	Parameter
Material in contact with media	Port: 300 Series stainless steel, Hastelloy®
Housing material	300 Series stainless steel
Weight	158 g [5.6 oz] (1/4 BSP port with DIN 43650)
Shock	100 g peak [11 ms]
Vibration	MIL-STD-810C, Figure 514.2-5, Curve AK, Table 514.2-V, Random Vibration Test [overall g rms = 20.7 min]
Compensated temperature range	-10 °C to 85 °C [14 °F to 185 °F]
Operating temperature range	-40 °C to 85 °C [-40 °F to 185 °F]
Intrinsic safety approval	NEPSI Ex ia IIC T4 Ga (Ta≤85°C) (refer to installation instructions 008-0692-00 for information regarding installation and intrinsic safety approvals)
Approvals	CE, RoHS

**Table 3. Performance Specifications at 25 °C [77 °F] and a rated excitation, unless otherwise noted**

Characteristic	Parameter
Response time	<2 ms
Accuracy	±0.15 % BFSL (see note 1); ±0.25 % BFSL (see note 1)
Total error band	±2 %FS (across compensated temperature range) (see Note 2 and Figure 1)

<sup>1</sup> Includes pressure non-linearity (BFSL), pressure hysteresis and non-repeatability. Thermal errors are not included.

<sup>2</sup> Includes zero error, span error, thermal effect on zero, thermal effect on span, thermal hysteresis, pressure-non-linearity, pressure hysteresis and pressure non-repeatability.

**Figure 1. Total Error Band**

Total Error Band (TEB) is a single specification that includes all possible sources of error. TEB should not be confused with Accuracy, which is actually a component of TEB. TEB is the worst error that the sensor could experience. The TEB specification on a datasheet may be confusing. Honeywell uses the TEB specification in its datasheet because it is the most comprehensive measurement of a sensor's true Accuracy. Honeywell also provides the Accuracy specification in order to provide a common comparison with competitors' literature that does not use the TEB specification. Many competitors do not use TEB—they simply specify the Accuracy of their device. Their Accuracy specification, however, may exclude certain parameters. On their datasheet, the errors are listed individually. When combined, the total error (or what would be TEB) can be significant.

