Honeywell

Honeywell Sensing and Control

XPC05DTH

Actual product appearance may vary.

Pressure Sensors: Measurement Type: Differential, Gage, Vaccum Gage; Signal Conditioning: Unamplified; Pressure Range: ± 5.0 psi; Port Style: Barbed

Features

- Low Cost, Small Size
- Temperature Compensated
- Zero and Span Calibrated
- MilliVolt Output
- Gage, Differential, and Absolute Pressure
- Constant Voltage Excitation
- High Impedance - Low Current

Potential Applications

- Medical Applications
- Applications Requiring Small Size
- Applications Requiring Vacuum, Positive Pressure or Both

Description

The XPXL/XPX and XPCL/XPC Series sensors integrate silicon micromachined sensing technology, temperature compensation, and calibration in a complete family of low cost packages. This series offers the most cost-effective solution for design requirements. These piezoresistive pressure sensors use micromachined silicon chips mounted on a ceramic and protected with a plastic cap. Several tube arrangements with nylon housings are available for various pressure applications. On devices of 5 psi and above, the topside of the chip is protected against humidity by a Silgel coating. While the sensors are designed for use with noncorrosive, nonionic pressure media, they accommodate many gases that are used in medical applications.

Product Specifications	
Measurement Type	Differential, Vacuum Gage, Gage
Signal Conditioning	Unamplified
Pressure Range	± 5.0 psi
Maximum Overpressure	15.0 psi
Supply Voltage	3.0 Vdc min., 12.0 Vdc typ., 16.0 Vdc max.
Compensated	Yes
Output Calibration	Yes
Termination	PCB
Port Style	Barbed
Package Style	Honeywell DI-XPC
Typical Sensitivity	12 mV/psi
Full Scale Span	60 mV typ.

Null Offset	0 mV typ.
Null Shift over Temperature	± 0.5 mV
Span Shift Over Temperature	± 1.0% span
Linearity, Hysteresis Error	0.25 % Typical 0.5 % Maximum Span
Input Resistance	5.0 kOhm min.
Output Resistance	3.0 kOhm typ.
Operating Temperature Range	-25 °C to 85 °C [-13 °F to 185 °F]
Storage Temperature Range	-40 °C to 125 °C [-40 °F to 257 °F]
Media Compatibility	Port 1: Dry gases only. Media must be compatible with epoxy-based adhesive. Port 2: Wetted materials. Media must be compatible with nylon housing, epoxy adhesive and silicon.
UNSPSC Code	411121
UNSPSC Commodity	411121 Transducers
Availability	Global
Series Name	XPC

FO-52847-F

REV	DOCUMENT	CHANGED BY	CHECK
8	0033839	PRS 13SEP07	CMH

XPC ____ **D** ____ ____

SERIES
MOTOROLA HOUSING
COMPENSATED AND
CALIBRATED (mV)

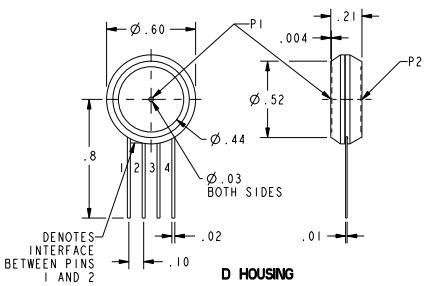
PRESSURE RANGE
0.3, 01, 05, 15, 30,
60, 100 PSI

ACCURACY GRADE
C - COMMERCIAL GRADE
H - HIGH GRADE

PORT OPTION
F - AXIAL
T - RADIAL

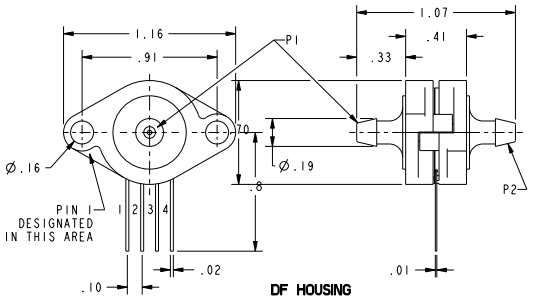
PRESSURE REFERENCE
D - DIFFERENTIAL

CATALOG LISTINGS	
⑧	⑧
⑦	XPC15DH
XPC0.3DH	XPC15DTC
XPC0.3DTC	XPC15DTH
XPC0.3DTH	XPC30DC
⑦	⑦
⑦	XPC30DTH
XPC01DH	⑦
XPC01DTC	XPC60DTH
XPC01DTH	XPC100DC
XPC05DFH	⑦
XPC05DC	XPC100DTC
XPC05DH	⑦
XPC05DTC	⑦
XPC05DTH	
XPC15DC	



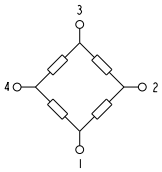
D HOUSING

D STYLE (DIFFERENTIAL)	PERFORMANCE AT 25°C AND 12±0.01 Vdc (UNLESS OTHERWISE STATED)									
	C-GRADE			H-GRADE			UNITS	FULL SCALE PRESSURE PSI	PROOF PRESSURE PSI	BURST PRESSURE PSI
	MIN	NOM	MAX	MIN	NOM	MAX				
OFFSET (0 PSI)	-1	0	1	-0.5	0	0.5	mV			
0.3 SPAN PSI (P1>VENT)	19	20	21	19.5	20	20.5	mV	0.3	3	5
1 PSI SPAN (P1>P2)	17	18	19	17.5	18	18.5	mV	1	3	5
5 PSI SPAN (P1>P2)	57	60	63	59	60	61	mV	5	15	25
15 PSI SPAN (P1>P2)	85	90	95	89	90	91	mV	15	45	75
30 PSI SPAN (P1>P2)	85	90	95	89	90	91	mV	30	90	150
60 PSI SPAN (P1>P2)	85	90	95	89	90	91	mV	60	180	300
100 PSI SPAN (P1>P2)	95	100	105	99	100	101	mV	100	250	400
NULL SHIFT OVER TEMPERATURE (0-25, 25-70 °C) ⚠2	---	---	±1	---	---	±.5	mV			
SPAN SHIFT OVER TEMPERATURE (0-25, 25-70 °C) ⚠2	---	---	±2	---	---	±1	%SPAN			
COMBINED LINEARITY AND HYSTERESIS ⚠3	---	0.25	1	---	0.25	0.5	%SPAN			



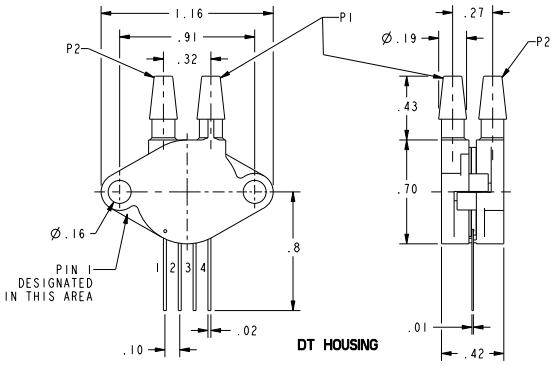
DF HOUSING

GENERAL OPERATING CHARACTERISTICS	ALL PRESSURES AND GRADES			
	MIN	NOM	MAX	UNITS
EXCITATION VOLTAGE	3	12	16	Vdc
SUPPLY CURRENT	---	---	3.5	mA
INPUT RESISTANCE	5	---	---	K-OHMS
OUTPUT RESISTANCE	---	3	---	K-OHMS
OPERATING TEMPERATURE	-25	---	85	°C
STORAGE TEMPERATURE	-40	---	125	°C



EQUIVALENT CIRCUIT

PIN OUT	
1	-V EXCITATION
2	+ OUTPUT SIGNAL
3	+ V EXCITATION
4	- OUTPUT SIGNAL



DT HOUSING

NOTES
1 - SPAN IS THE ALGEBRAIC DIFFERENCE BETWEEN THE OUPUT AT FULL SCALE PRESSURE AND THE OFFSET OUTPUT
⚠2 TEMPERATURE ERROR IS CALCULATED WITH RESPECT TO 25°C
⚠3 LINEARITY IS MEASURED AT 1/2 FULL SCALE PRESSURE USING BEST STRAIGHT LINE FIT
4 - THE OUTPUT OF THE SENSOR IS PROPORTIONAL, RATIOMETRIC, TO THE EXCITATION VOLTAGE. ALL SPECIFICATIONS WILL NOMINALLY BE CHANGED BY THE RATIO OF $V_{EXCITATION}/12.0$ Vdc
5 - LIMIT SOLDERING TO 315°C FOR LESS THAN 10 SECONDS
6 - INPUT MEDIA FOR P1 IS RESTRICTED TO DRY GASES ONLY

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE: (X) USCS (INCH) CUSTOMARY ( ) SI (mm) METRIC		
NO PLACE	X	±.040 ±1
ONE PLACE	.X	±.030 ±0.4
TWO PLACE	.XX	±.015 ±0.15
THREE PLACE	.XXX	±.005 ±
ANGLES		± ±
RAW MATERIAL-COMMERCIAL STANDARD		
THIRD ANGLE PROJECTION		

DRAWN	TRF	18APR01
CHECK	AK	18APR01

DIMENSIONS ARE TO BE MET BEFORE PROTECTIVE COATINGS ARE APPLIED

3D PTC | ASME Y14.5M-1994

Honeywell

TITLE: **PRESSURE SENSOR**

SIZE	DWG TYPE	DRAWING NAME	REV
C	1	XPC DIF SERIES CHART 1	8

SCALE 2:1 | WEIGHT | SHEET 1 OF 1