Honeywell

Honeywell Sensing and Control

CPC15AFH

Actual product appearance may vary.

Pressure Sensors: Measurement Type: Absolute; Signal Conditioning: Unamplified; Pressure Range: 2.0 psia to 15.0 psia; Port Style: Barbed: High Grade

Features

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

Potential Applications

- Medical Applications
- Applications Requiring Small Size
- Applications Requiring Vacuum Reference

Description

The CPC and CPX 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. The CPC Series is designed for the lowest cost and smallest profile. The standard packages have only a plastic cap for OEM applications. The CPC...F accommodates pressure measurements in tube applications.

Product Specifications	
Measurement Type	Absolute
Signal Conditioning	Unamplified
Pressure Range	2.0 psia to 15.0 psia
Maximum Overpressure	45.0 psia
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-CPC
Typical Sensitivity	6 mV/psi
Full Scale Span	90 mV typ.
Null Offset	0 mV typ.
Null Shift over Temperature	± 0.5 mV typ.
Span Shift Over Temperature	± 1.0% span
Linearity, Hysteresis Error	± 0.25 % typ. ± 0.5 % max. 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]
Compensated Temperature Range	0 °C to 70 °C [32 °F to 158 °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	CPC

FO-52847-F

REV	DOCUMENT	CHANGED BY	CHECK
3	0033382	AB 30AUG07	CMH

CPC ___ ___ ___ A ___ ___

SERIES

DESIGNATES PRESSURE
- NO DESIGNATION (PSI)

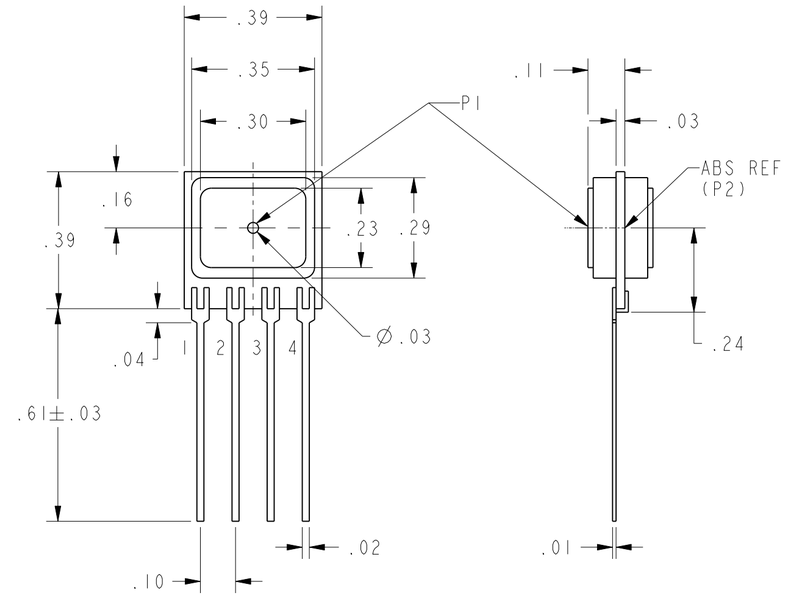
PRESSURE RANGE
05, 15, 30,
60, 100, 150 PSIA

ACCURACY GRADE
C - COMMERCIAL GRADE
H - HIGH GRADE

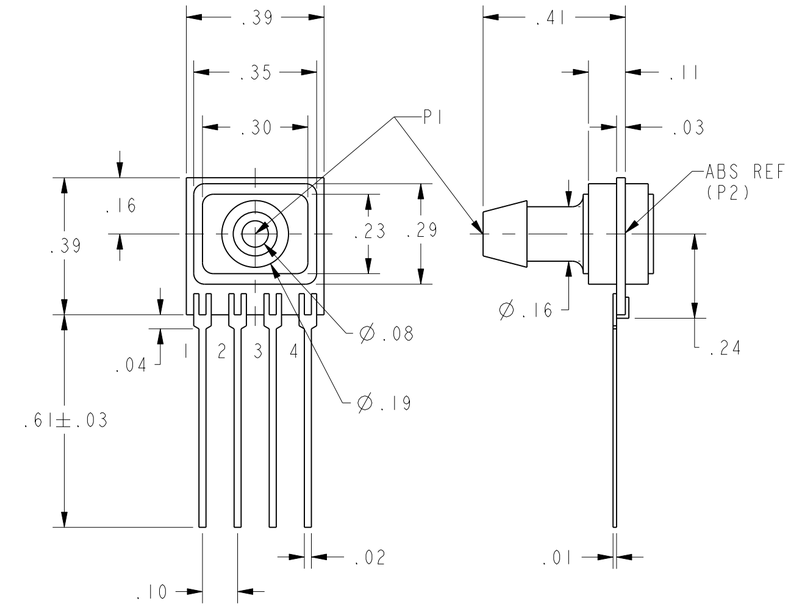
PORT OPTION
F - AXIAL
- NO PORT/O-RING SEAL

PRESSURE REFERENCE
A - ABSOLUTE

CATALOG LISTINGS
CPC15AC
CPC15AFH
CPC15AFC
CPC15AH
CPC30AFH
③
CPC60AH
CPC100AFC
CPC100AFH
②
CPC150AFH



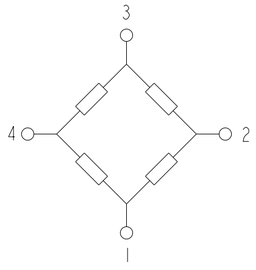
A HOUSING



AF HOUSING

A - STYLE (ABSOLUTE)	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				
NULL OFFSET (0 PSIA), ALL LISTINGS	-1	0	1	-0.5	0	0.5	mVdc			
5 PSIA SPAN (P1>P2)	57	60	63	59	60	61	mVdc	5	15	25
15 PSIA SPAN (P1>P2)	85	90	95	89	90	91	mVdc	15	45	75
30 PSIA SPAN (P1>P2)	85	90	95	89	90	91	mVdc	30	90	150
60 PSIA SPAN (P1>P2)	85	90	95	89	90	91	mVdc	60	180	300
100 PSIA SPAN (P1>P2)	95	100	105	99	100	101	mVdc	100	250	400
150 PSIA SPAN (P1>P2)	85	90	95	89	90	91	mVdc	150	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			

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

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. THE EXCITATION MAY VARY BETWEEN 3 TO 16 Vdc. 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 - PIN 1 IS IDENTIFIED BY THE DOT ON THE HOUSING AS SHOWN ON THE VARIOUS DRAWINGS
7 - APPLY PRESSURE TO PORT INDICATED ON THE DRAWINGS SHOWN
8 - SENSORS ARE OPERATIONAL OVER VACUUM PRESSURE RANGE
9 - INPUT MEDIA RESTRICTED TO DRY GASES ONLY

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE: [X] US(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	02APR01
CHECK	SAV	02APR01

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	CPC ABS SERIES CHART 1	3

SCALE 3:1 | WEIGHT | SHEET 1 OF 1