Honeywell

Honeywell Sensing and Control

176PC14HD2

Pressure Sensors: Measurement Type: Differential, Gage; Range: ± 14.0 in H_2O

Actual product appearance may vary.

Features

- Miniature package
- Low pressure measurement
- Calibrated null and span
- Temperature compensated for span over 0 °C to 50 °C [32 °F to 122 °F]

Potential Applications

Medical

- CPAP (Continuous Positive Airway Pressure) equipment
- Respirators and ventilators
- Blood glucose monitors
- Oxygen conservers
- Oxygen concentrators
- Nebulizers
- Blood cell separators

Environmental

- Filter monitoring equipment

Description

170PC Series pressure sensors provide a millivolt output that is proportional to the pressure applied. They operate from 0 inches to 7.0 inches of water to 0 inches to 27.68 inches of water using a single, positive supply voltage ranging from 10.0 Vdc to 16.0 Vdc. When pressure is applied, a differential output voltage, proportional to that pressure, is produced.

Product Specifications	
Measurement Type	Differential, Gage
Signal Conditioning	Unamplified
Pressure Range	± 14.0 in H_2O
Maximum Overpressure	140.0 in H_2O
Supply Voltage	10.0 Vdc typ., 16.0 Vdc max.
Compensated	Yes
Output Calibration	Yes
Response Time	1 ms max.
Termination	PCB
Port Style	Straight
Package Style	Honeywell - 100PC

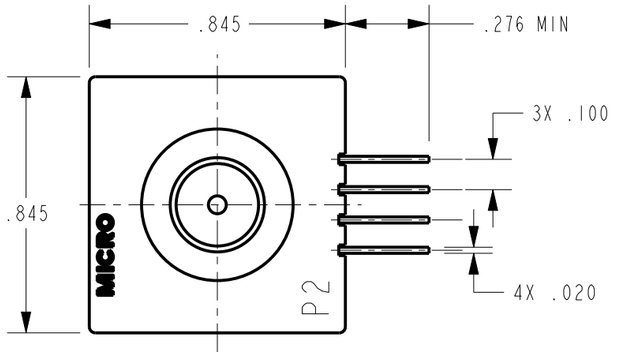
Linearity	± 3.0% span max. (P2 > P1), ± 1.5% span max. (P2 < P1)
Typical Sensitivity	2.5 mV/in H_2O
Full Scale Span	35 mVdc typ.
Null Offset	0 mV typ.
Null Shift over Temperature	± 3.0 %
Span Shift Over Temperature	± 3.5% at 10 vdc
Repeatability & Hysteresis Error	± 0.25 % span typ.
Input Resistance	6.3 kOhm
Shock	Qualification tested to 150 g
Vibration	MIL-STD-202 Method 204 (10 Hz to 2000 Hz at 10g)
Weight	57 g [2 oz]
Operating Temperature Range	-40 °C to 85 °C [-40 °F to 185 °F]
Compensated Temperature Range	0 °C to 50 °C [32 °F to 122 °F]
Storage Temperature Range	-55 °C to 125 °C [-67 °F to 257 °F]
Media Compatibility	Port 1: Dry gases only. Port 2: Wetted materials. Polyester housing, silicon and silicon-based adhesives.
UNSPSC Code	411121
UNSPSC Commodity	411121 Transducers
Availability	Global
Series Name	170PC

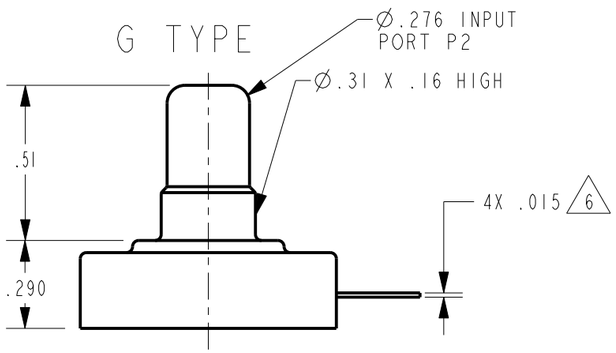
MICRO SWITCH
a Honeywell Division
FED. MFG. CODE 91929

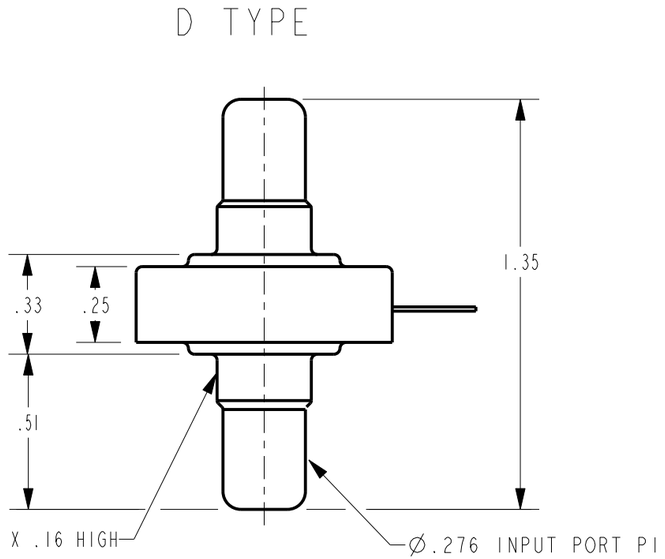
BRIDGE PRESSURE SENSOR

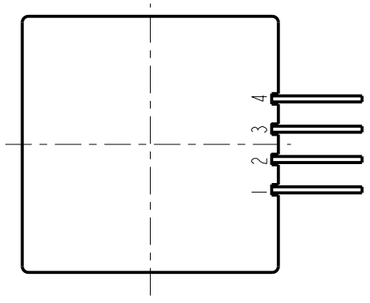
CATALOG LISTING
176PCH SERIES CHART 1

CATALOG LISTING Ⓒ
176PC07HD2
176PC14HG2
176PC14HD2
176PC28HG2
176PC28HD2







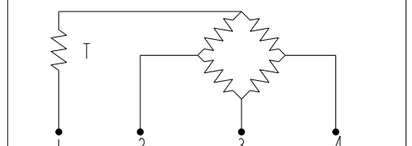


NOTES
1. SPAN IS THE ALGEBRAIC DIFFERANCE BETWEEN END POINTS (OUTPUT AT MINIMUM AND MAXIMUM PRESSURE)
2. TEMPERATURE ERROR IS CALCULATED WITH RESPECT TO 25°C AND EXPRESSES THE DEVIATION THAT COULD OCCUR AS TEMPERATURE IS RAISED OR LOWERED TO LIMITS INDICATED
3. INPUT MEDIA: P1 - DRY GASES ONLY: CONNECTION SIDE OF SENSOR
   P2 - LIMITED ONLY TO THOSE MEDIA THAT WILL NOT ATTACK POLYESTER, SILICON OR SILICONE BASED ADHESIVE
4. TERMINALS ARE PLATED FOR SOLDERING
5. LIMIT SOLDERING TO 315°C FOR 10 SECONDS MAX
6. LISTINGS ENDING WITH THE NUMBER 2 INDICATES STRAIGHT LEADS

GENERAL OPERATING CHARACTERISTICS
(ELECTRICAL PERFORMANCE AT 10.00±0.01 VDC EXCITATION, 25°C)

PARAMETERS	PRESSURE RANGES (H_2O)	MIN	TYP	MAX	UNITS
NULL OFFSET	ALL	-2	0	+2	mV
NULL SHIFT 2 0° ← 25° C → 50°	ALL		±3.0		mV
(P2 > P1) SPAN 1	0 TO 28 D&G	40	42	44	mV
	0 TO 14 D&G	33	35	37	mV
	0 TO 07 D&G	26	28	30	mV
(P2 > P1) SENSITIVITY PER IN. H_2O	0 TO 28 D&G		1.5		mV
	0 TO 14 D&G		2.5		mV
	0 TO 07 D&G		4.0		mV
SPAN SHIFT 2 0° ← 25° C → 50°	ALL				%SPAN
AT 10 VDC	ALL			±3.5	%SPAN
AT 2mA	ALL		NONE		%SPAN
LINEARITY (BFSL) (P2 > P1)	0 TO 28 D&G			±3.0	%SPAN
(P1 > P2)	0 TO 28 D			±1.5	%SPAN
(P2 > P1)	0 TO 14 D&G			±3.0	%SPAN
(P1 > P2)	0 TO 14 D			±1.5	%SPAN
(P2 > P1)	0 TO 07 D&G			±3.0	%SPAN
(P1 > P2)	0 TO 07 D			±1.5	%SPAN
REPEATABILITY & HYSTERESIS	ALL		±0.25		%SPAN
STABILITY OVER 1 YEAR	ALL		±1.5		%SPAN
EXCITATION VOLTAGE	ALL		10	16	VDC
INPUT RESISTANCE	ALL		6.3K		OHMS
(P2 > P1) (P1 > P2) OVERPRESSURE	0 TO 28 D&G			140	IN. H_2O
	0 TO 14 D&G			140	IN. H_2O
	0 TO 07 D&G			140	IN. H_2O
TEMPERATURE STORAGE	ALL	-55° TO +125°C (-67° TO +257°F)			
OPERATE	ALL	-40° TO +85°C (-40° TO +185°F)			
COMPENSATED	ALL	0°C TO +50°C (+32° TO +122°F)			

CIRCUIT DIAGRAM



OUTPUT "A" INCREASES AS P2 PRESSURE INCREASES
OUTPUT "B" DECREASES AS P2 PRESSURE INCREASES

THIRD ANGLE PROJECTION

SCALE 2 : 1

DO NOT SCALE PRINT

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE

ONE PLACE	(.0)	±.030
TWO PLACE	(.00)	±.015
THREE PLACE	(.000)	±.005
ANGLES		±

WEIGHT 2 OZ

ANSI Y14.5M-1982 APPLIES

CATALOG LISTING 176PCH SERIES CHART 1 | PAGE 1 OF 1 | ISSUE 7 | 27 AUG 07 | CMH | 15NOV00 | SAV | 15NOV00 | TSM | 15NOV00 | PTC/CAD 2D | DRAWN | CHECK | CHECK | RELEASE NO. CO-74682 | REPLACES

REVISIONS

A	201670	TSM 15NOV00
B	205984	DLT 15 JUL 02
C	0033081	DDN 27 AUG 07