Honeywell

Honeywell Sensing and Control

XCX01DNC

Actual product appearance may vary.

Pressure Sensors: Measurement Type: Differential, Gage, Vaccum Gage; Signal Conditioning: Unamplified; Pressure Range: ± 1.0 psi; Port Style: Barbed: Commercial Grade

Features

- Pressure Ranges from 4 in H_2O, 10 in H_2O 1 psi through 150 psi
- Calibrated offset to ±/mV
- Calibrated Full Scale Span to ±1.0 % FS over Compensated Temperature Range
- Temperature Compensated over 0 •C to +70 •C
- Gage, Differential, and Absolute Pressure
- Burst Pressure 3X Rated
- Ratiometric mV Output

Potential Applications

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

Description

The XCXL, XCX Series integrates silicon micromachined sensing technology, temperature compensation, and calibration in an improved performance industry standard package. A unique stress isolating design protects against torque induced errors typically found in competitive products. Additional stability and long term accuracy improvements are gained through simplified compensation techniques, which eliminate temperature dependent thermal compensation. This series is available in a commercial (XCX-DNC) performance level. This performance level provides the calibration accuracy of offset thermal compensation, and linearity providing added flexibility to meet critical performance budgets. The XCA and XCR Series provide amplified output as well as integrated compensation.

Product Specifications	
Measurement Type	Differential, Vacuum Gage, Gage
Signal Conditioning	Unamplified
Pressure Range	± 1.0 psi
Maximum Overpressure	5.0 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-XCX

Typical Sensitivity	18 mV/psi
Full Scale Span	18 mV typ.
Null Offset	0 mV typ.
Null Shift over Temperature	± 1 mV
Span Shift Over Temperature	± 2% span
Linearity, Hysteresis Error	± 0.5 % Span Typ.; ± 1 % Span Max.
Repeatability	0.1% span typ.
Input Resistance	15.0 kOhm
Shock	10 g
Weight	7.6 g [0.27 oz]
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	XCX

FO-52181-F

REV	DOCUMENT	CHANGED BY	CHECK
1	201373	TRF 22SEP00	SAV
2	203123	GJW 01JUN01	SAV

XCX ___ D N —

SERIES
UNAMPLIFIED COMPENSATED AND CALIBRATED (mV)

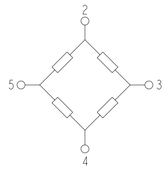
PRESSURE RANGE (5)
004, 010 IN H_2O D
00.3, 01, 05, 15, 30, 60, 100, 150, 240 PSID

ACCURACY GRADE
C - COMMERCIAL (1.0%)
H - HIGH GRADE (0.50%)

PACKAGE TYPE
N - PLASTIC

PRESSURE REFERENCE
D - DIFFERENTIAL

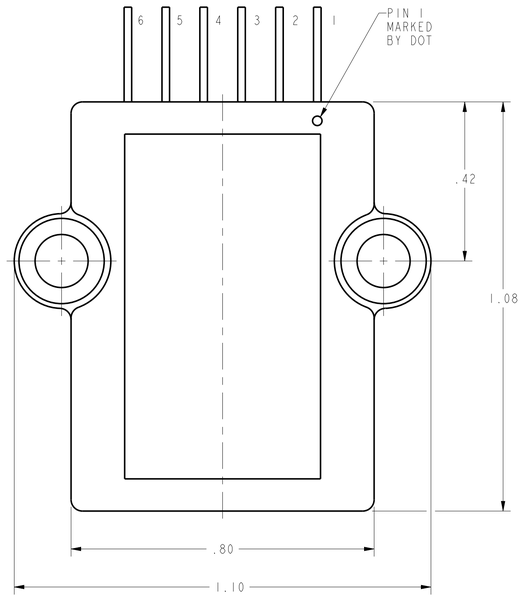
NOTES
(1) ALL PARAMETERS ARE MEASURED AT 12 VDC EXCITATION. APPLY POSITIVE PRESSURE TO PORT 2 FOR POSITIVE GOING OUTPUT
(2) SHIFT IS RELATIVE TO 25°C
(3) LINEARITY IS DETERMINED USING BEST STRAIGHT LINE FIT THROUGH ZERO, 1/2 FULL SCALE, AND FULL SCALE; HYSTERESIS IS MECHANICAL ONLY
4 - SPAN IS THE ALGEBRAIC DIFFERENCE BETWEEN OFFSET VOLTAGE AND THE VOLTAGE AT FULL SCALE PRESSURE
(5) PRESSURE RANGE DEPICTS THE FULL SCALE PRESSURE OF THE SENSOR

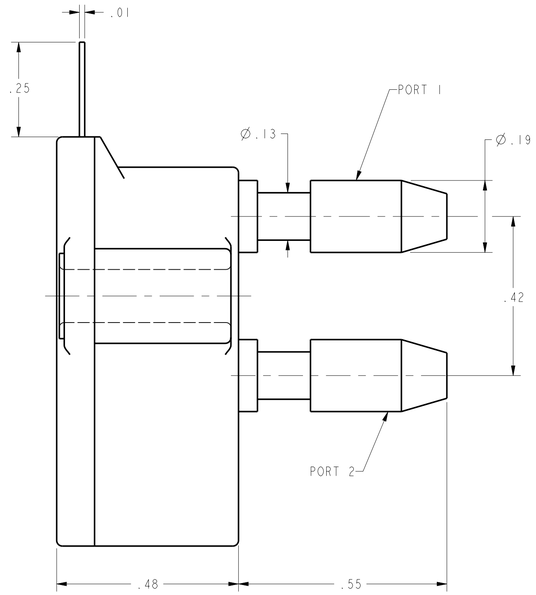


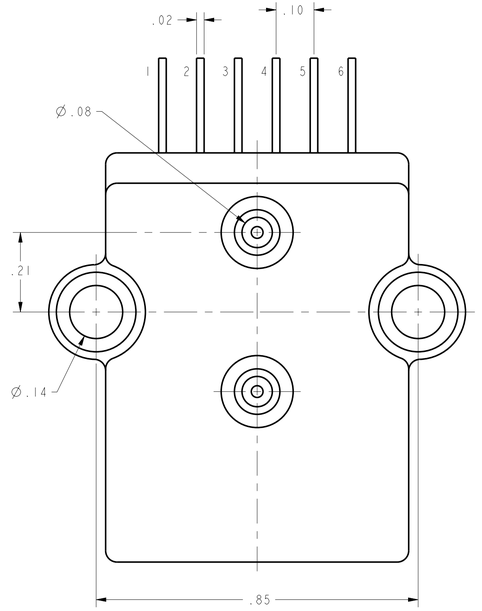
EQUIVALENT CIRCUIT

PIN OUT	
1	N/C
2	+V EXCITATION
3	+ OUTPUT SIGNAL
4	-V EXCITATION
5	- OUTPUT SIGNAL
6	N/C

C - GRADE LISTINGS
XCXL004DNC
XCXL010DNC
XCX00.3DNC
XCX01DNC
XCX05DNC
XCX15DNC
XCX30DNC
XCX60DNC
XCX100DNC
XCX150DNC
XCX240DNC
H - GRADE LISTINGS
XCXL004DNH
XCXL010DNH
XCX00.3DNH
XCX01DNH
XCX05DNH
XCX15DNH
XCX30DNH
XCX60DNH
XCX100DNH
XCX150DNH
XCX240DNH







PARAMETERS (1)	PRESSURE RANGE	C GRADE MIN	C GRADE NOM	C GRADE MAX	C GRADE UNITS	H GRADE MIN	H GRADE NOM	H GRADE MAX	H GRADE UNITS	PROOF PRESSURE
OFFSET VOLTAGE (0 IN H_2O DIFF)	ALL	-1.0	0.0	1.0	mV	-0.3	0.0	0.3	mV	
SPAN (P2>P1)	4 IN H_2O	38.0	40.0	42.0	mV				mV	5 PSID
	10 IN H_2O	19.0	20.0	21.0	mV	19.8	20.0	20.2	mV	5 PSID
	0.3 PSID	19.0	20.0	21.0	mV	19.8	20.0	20.2	mV	5 PSID
	1 PSID	17.0	18.0	19.0	mV	17.8	18.0	18.2	mV	5 PSID
	5 PSID	57.0	60.0	63.0	mV	59.0	60.0	61.0	mV	15 PSID
	15 PSID	85.0	90.0	95.0	mV	89.0	90.0	91.0	mV	45 PSID
	30 PSID	85.0	90.0	95.0	mV	89.0	90.0	91.0	mV	90 PSID
	60 PSID	85.0	90.0	95.0	mV	89.0	90.0	91.0	mV	180 PSID
	100 PSID	95.0	100.0	105.0	mV	99.0	100.0	101.0	mV	200 PSID
	150 PSID	85.0	90.0	95.0	mV	89.0	90.0	91.0	mV	300 PSID
	240 PSID	95.0	100.0	105.0	mV	99.0	100.0	101.0	mV	300 PSID
COMBINED LINEARITY AND HYSTERESIS (3)	ALL	---	0.5	1.0	%SPAN	---	0.3	0.5	%SPAN	
INPUT RESISTANCE	ALL	---	15	---	KΩ	---	15	---	KΩ	
TEMPERATURE ERROR ON OFFSET (0° TO 50°C) (2)	4 IN H_2O	---	---	1.0	mV	---	---	0.5	mV	
TEMPERATURE ERROR ON OFFSET (0° TO 70°C) (2)	ALL EXCEPT 4 IN H_2O	---	---	1.0	mV	---	---	0.5	mV	
TEMPERATURE ERROR ON SPAN (0° TO 50°C) (2)	4 IN H_2O	---	---	2.0	%SPAN	---	---	1.0	%SPAN	
TEMPERATURE ERROR ON SPAN (0° TO 70°C) (2)	ALL EXCEPT 4 IN H_2O	---	---	2.0	%SPAN	---	---	1.0	%SPAN	
REPEATABILITY	ALL	---	0.1	---	%SPAN	---	0.1	---	%SPAN	

EXCITATION VOLTAGE	ALL	3	12	16	VDC
COMPENSATED TEMPERATURE RANGE	ALL	0	25	70	°C
STORAGE TEMPERATURE RANGE	ALL	-40	---	125	°C
RELATIVE HUMDITY (NON-CONDENSING)	ALL	0	---	95	%RH
SHOCK (DURATION 11 msec ANY AXIS)	ALL	---	---	10	g
COMMON MODE PRESSURE	ALL	---	---	50	PSIG

MEDIA CAPABILITY, WETTED MATERIALS
(APPLY CLEAN DRY AIR ONLY)

PRESSURE PORT 2	SILICON DIAPHRAGM, GLASS FILLED NYLON, AND ALUMINA CERAMIC. PORT NOT USED FOR ABSOLUTE DEVICES
PRESSURE PORT 1	FRONTSIDE OF SILICON DIAPHRAGM, SILICONE GEL PASSIVATION, GLASS FILLED NYLON, ALUMINA.

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE: [X] INCH(ES) 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	22SEP00
CHECK	SAV	22SEP00

DIMENSIONS ARE TO BE MET BEFORE PROTECTIVE COATINGS ARE APPLIED

PTC 3D | ASME Y14.5M-1994

Honeywell
Sensing and Control

TITLE: PRESSURE SENSOR

SIZE	DWG TYPE	DRAWING NAME	REV
D	M	XCX DIF SERIES CHART 1	2

SCALE 5:1 | WEIGHT | SHEET 1 OF 1