



XCXL004DNC



Actual product appearance may vary.

Pressure Sensors: Measurement Type: Differential, Gage, Vacuum Gage; Signal Conditioning: Unamplified; Pressure Range: ± 4.0 inches of water; Port Style: Barbed: Commercial Grade

Features

- Pressure Ranges from 4 in H₂O, 10 in H₂O 1 psi through 150 psi
- Calibrated offset to \pm 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	± 4.0 in H ₂ O
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	10 mV/in H ₂ O
Full Scale Span	40 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 50 °C [32 °F to 122 °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	XCXL

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

SERIES
UNAMPLIFIED COMPENSATED AND CALIBRATED (mV)

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

PRESSURE RANGE Δ
004, 010 IN H₂O D
00.3, 01, 05, 15, 30, 60, 100, 150, 240 PSID

PACKAGE TYPE
N - PLASTIC

PRESSURE REFERENCE
D - DIFFERENTIAL

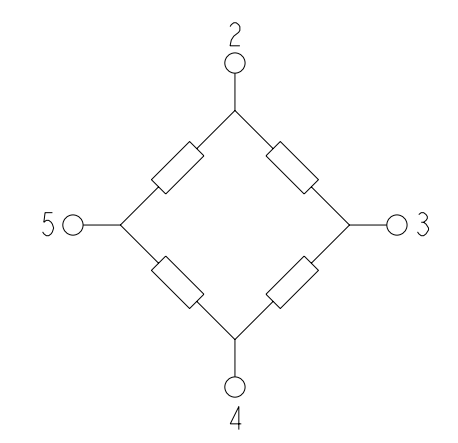
NOTES

Δ ALL PARAMETERS ARE MEASURED AT 12 VDC EXCITATION. APPLY POSITIVE PRESSURE TO PORT 2 FOR POSITIVE GOING OUTPUT SHIFT IS RELATIVE TO 25°C

Δ 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

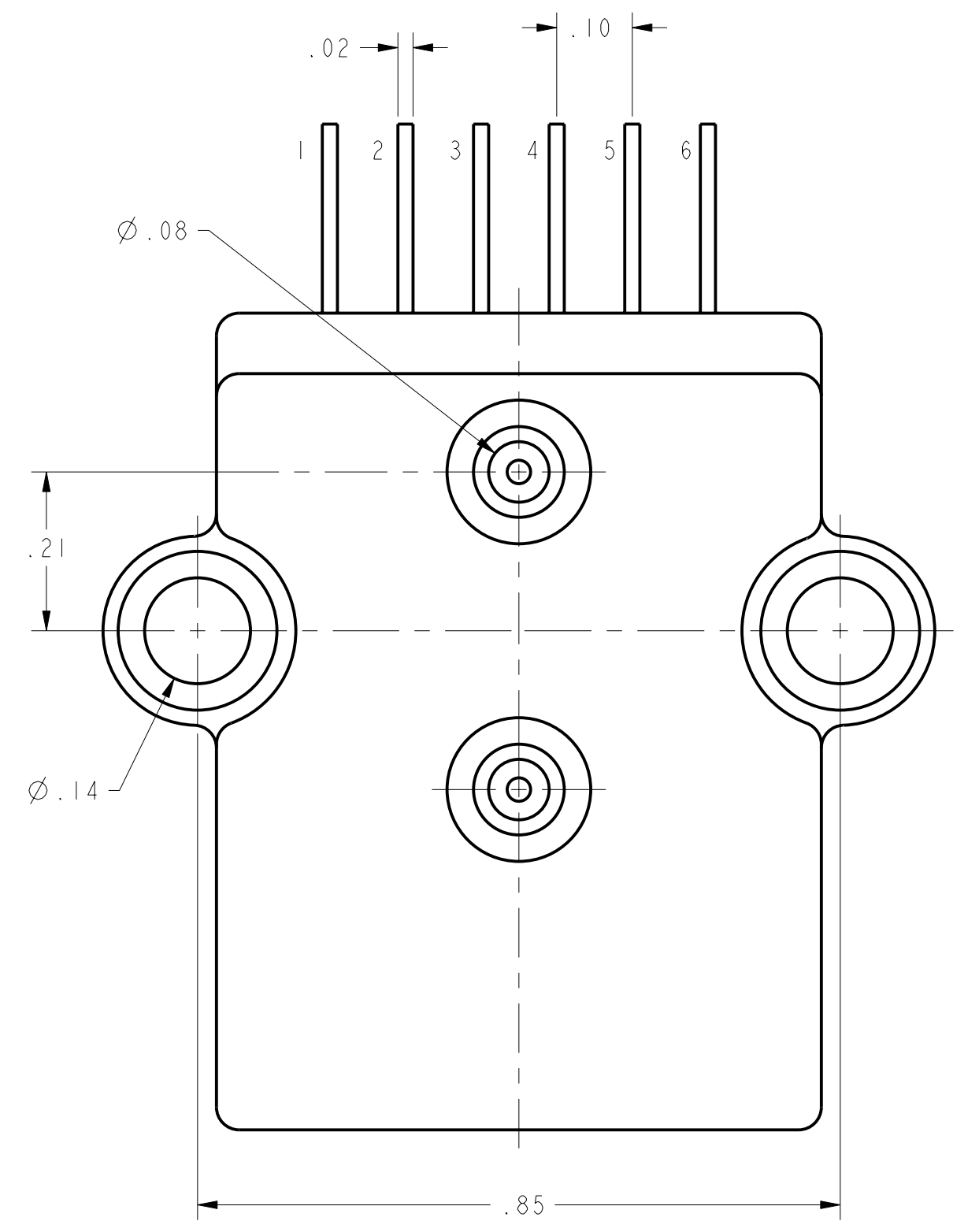
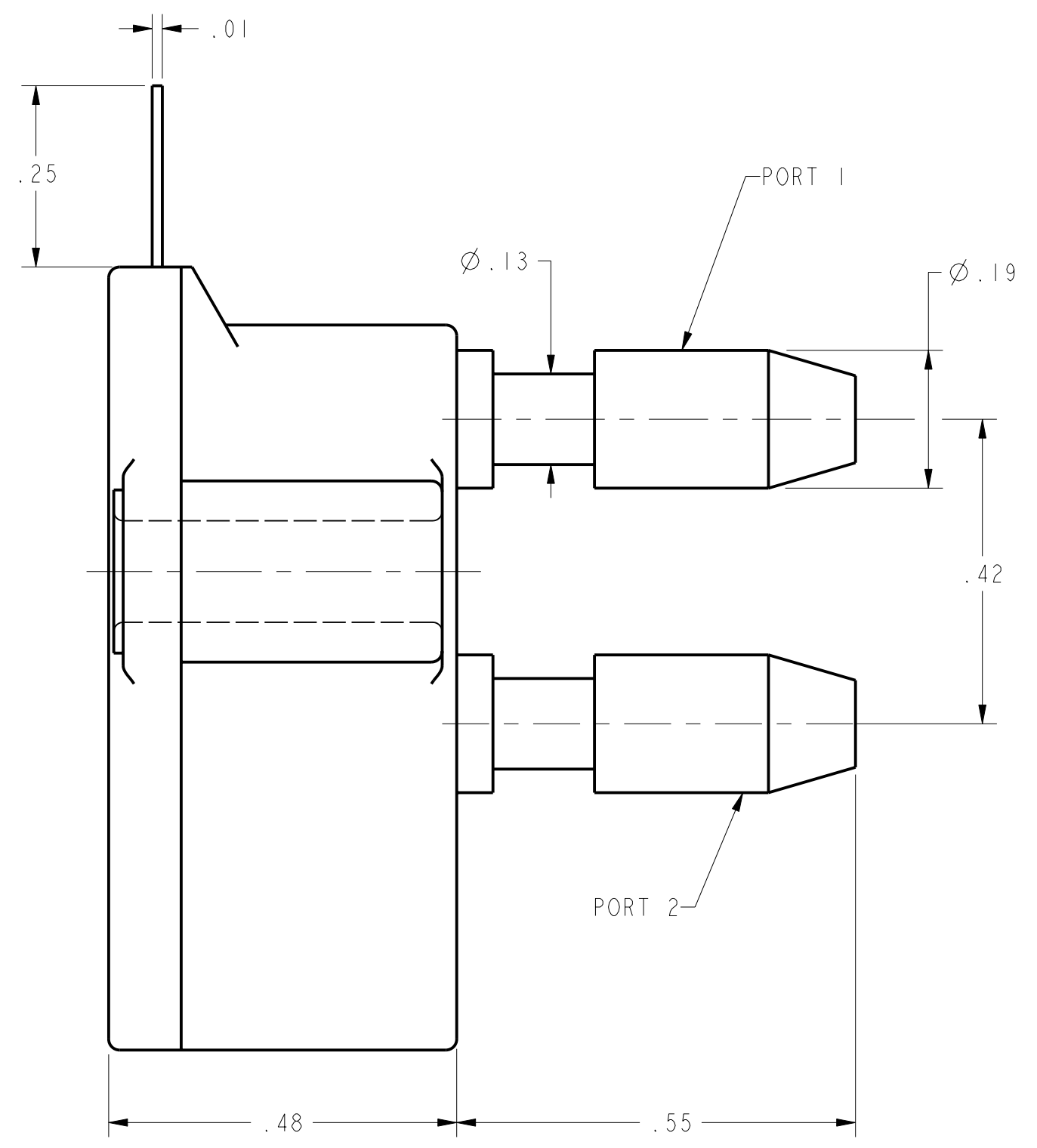
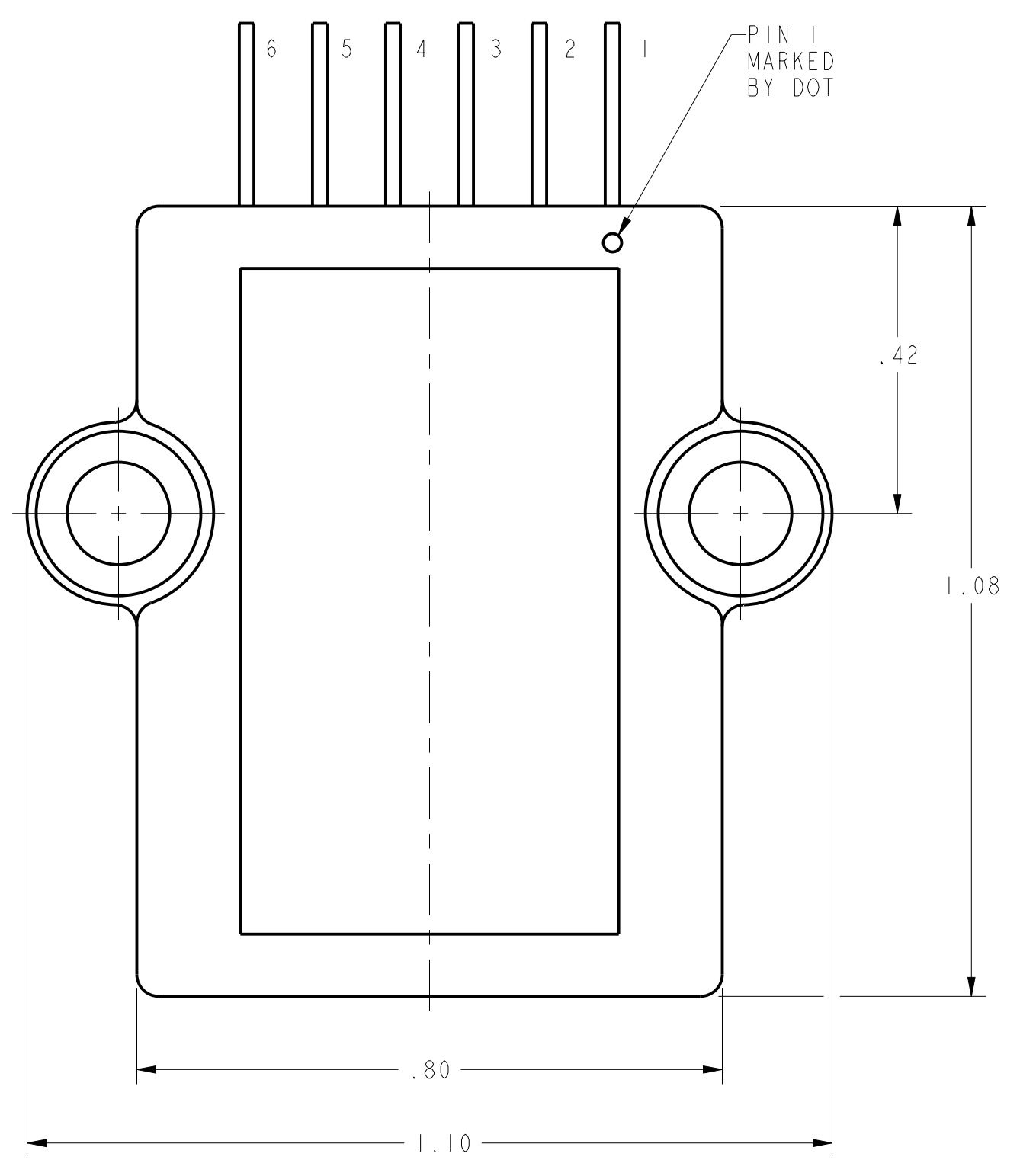
Δ PRESSURE RANGE DEPICTS THE FULL SCALE PRESSURE OF THE SENSOR



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 Δ	PRESSURE RANGE	C GRADE				H GRADE				PROOF PRESSURE
		MIN	NOM	MAX	UNITS	MIN	NOM	MAX	UNITS	
OFFSET VOLTAGE (0 IN H ₂ O DIFF)	ALL	-1.0	0.0	1.0	mV	-0.3	0.0	0.3	mV	5 PSID 5 PSID 5 PSID 5 PSID 15 PSID 45 PSID 90 PSID 180 PSID 200 PSID 300 PSID 300 PSID
SPAN (P2>P1)	4 IN H ₂ O	38.0	40.0	42.0	mV	19.8	20.0	20.2	mV	
	10 IN H ₂ O	19.0	20.0	21.0	mV	19.8	20.0	20.2	mV	
	0.3 PSID	19.0	20.0	21.0	mV	19.8	20.0	20.2	mV	
	1 PSID	17.0	18.0	19.0	mV	17.8	18.0	18.2	mV	
	5 PSID	57.0	60.0	63.0	mV	59.0	60.0	61.0	mV	
	15 PSID	85.0	90.0	95.0	mV	89.0	90.0	91.0	mV	
	30 PSID	85.0	90.0	95.0	mV	89.0	90.0	91.0	mV	
	60 PSID	85.0	90.0	95.0	mV	89.0	90.0	91.0	mV	
100 PSID	95.0	100.0	105.0	mV	99.0	100.0	101.0	mV		
150 PSID	85.0	90.0	95.0	mV	89.0	90.0	91.0	mV		
240 PSID	95.0	100.0	105.0	mV	99.0	100.0	101.0	mV		
COMBINED LINEARITY AND HYSTERESIS Δ	ALL	---	0.5	1.0	%SPAN	---	0.3	0.5	%SPAN	
INPUT RESISTANCE	ALL	---	15	---	K Ω	---	15	---	K Ω	
TEMPERATURE ERROR ON OFFSET (0° TO 50°C) Δ	4 IN H ₂ O	---	---	1.0	mV	---	---	0.5	mV	
TEMPERATURE ERROR ON OFFSET (0° TO 70°C) Δ	ALL EXCEPT 4 IN H ₂ O	---	---	1.0	mV	---	---	0.5	mV	
TEMPERATURE ERROR ON SPAN (0° TO 50°C) Δ	4 IN H ₂ O	---	---	2.0	%SPAN	---	---	1.0	%SPAN	
TEMPERATURE ERROR ON SPAN (0° TO 70°C) Δ	ALL EXCEPT 4 IN H ₂ O	---	---	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 HUMIDITY (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:	NO PLACE .X	ONE PLACE .XX	TWO PLACE .XXX	THREE PLACE .XXX	ANGLES	RAW MATERIAL - COMMERCIAL STANDARD	THIRD ANGLE PROJECTION	DRAWN TRF 22SEP00	CHECK SAV 22SEP00	Honeywell Sensing and Control PRESSURE SENSOR		
	±.040 ±.1	±.030 ±.04	±.015 ±.015	±.005 ±.01	±			THIS DRAWING COVERS A PROPRIETARY ITEM AND IS THE PROPERTY OF HONEYWELL SENSING AND CONTROL. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE PERMISSION OF HONEYWELL.		DIMENSIONS ARE TO BE MET BEFORE PROTECTIVE COATINGS ARE APPLIED.	TITLE: PRESSURE SENSOR SIZE: D DWG TYPE: M DRAWING NAME: XCX DIF SERIES CHART 1 REV: 2	
								PTC 3D	ASME Y14.5M-1994	SCALE: 5:1	WEIGHT	SHEET 1 OF 1