Honeywell

Pressure Sensors
Fixed Output, Amplified
Calibrated with Ratiometric Output Voltage

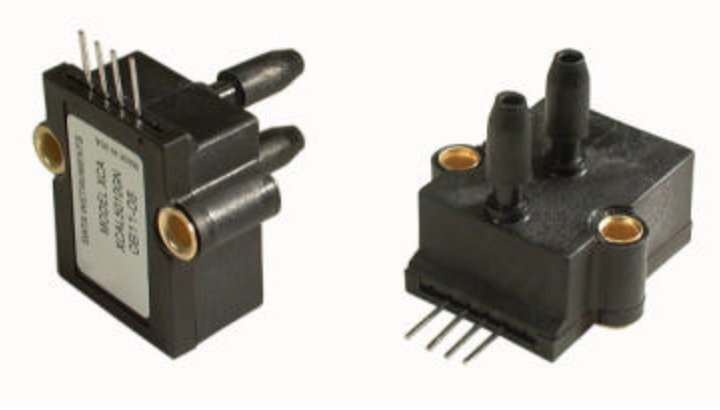
XCA Series

FEATURES

- Precise Temperature Compensation
- Low Cost
- High Performance
- Gage, Absolute and Differential Versions
- Constant Voltage Excitation
- Calibrated Output
- Ratiometric Output Voltage

TYPICAL APPLICATIONS

- Ventilators
- Continuous Positive Airway Pressure (CPAP) Systems
- Audiometers
- Air Compressors
- Chemical Analyzers
- Variable Air Volume (VAV) Controllers
- Airflow



The XCA Series of pressure sensors use state of the art silicon micromachined pressure sensors in conjunction with stress free packaging techniques to provide highly accurate, amplified, calibrated and temperature compensated pressure sensors for the most demanding applications.

When operated from a fixed 5.0 Vdc supply, the XCA gage and absolute sensors provide a 0.25 Vdc to 4.25 Vdc output (4.0 Vdc Span). The XCA5 Series offers an industry standard 1-6 Vdc output (5 Vdc Span) when operated from a fixed 8.0 Vdc supply.

All other features are the same for the entire family, incorporating stress isolation and factory calibration to achieve optimum accuracy in this industry standard package.

⚠WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

⚠WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as product installation information.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

XCA4 Electrical Specifications at 5 Vdc Excitation, XCA5 Electrical Specifications at 8 Vdc Excitation, 25 °C*

	Min.	Typ.	Max.	Units
Excitation Voltage	3.0	5.0	16	V
Null XCA4 (except Differential)	0.15	0.25	0.35	V
Null XCA4 Differential	2.20	2.25	2.30	V
Null XCA5	0.95	1.00	1.05	V
Null XCA5 Differential	2.45	3.50	3.55	V
Span XCA4 (except Differential)	3.90	4.00	4.10	V
Span XCA4 Differential, changes with ± pressure applied	±1.95	±2.00	±2.05	V
Span XCA5	4.90	5.00	5.10	V
Span XCA5 Differential, changes with ± pressure applied	±2.45	±2.50	±2.55	V
Linearity, Hysteresis Error***	--	±0.30	±0.50	%Span
Repeatability	--	±0.1	--	%Span
Temp. Change Span (0 °C to +50 °C [+32 °F to +122 °F])**	--	±0.6	±1.0	%Span
Temp. Change Offset (0 °C to +50 °C [+32 °F to +122 °F])**	--	±0.6	±1.0	%Span
Operating Temperature	-25	--	+85	°C
Storage Temperature	-40	--	+125	°C
Common Mode Pressure			50	psi
Proof pressure (times span pressure)****	--	3X	--	FS
Burst pressure (times span pressure)****	--	5X	--	FS

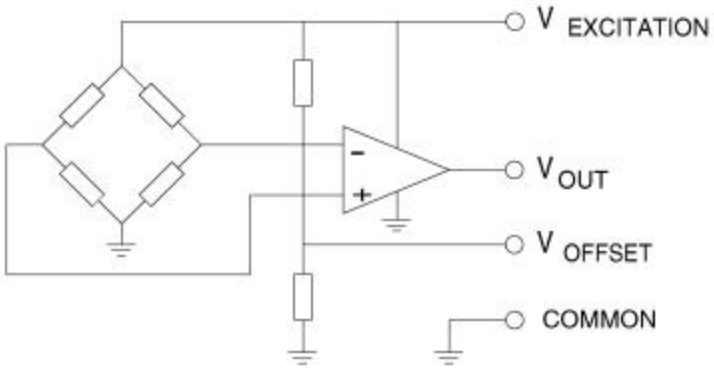
*Note 1: All parameters are measured at 5.0 volt excitation for XCA4 and at 8.0 volt excitation for XCA5, for the nominal full scale pressure and room temperature unless otherwise specified. Pressure measurements are with positive pressure applied to Port 2 or Vacuum to Port 1. For absolute devices, pressure is applied to Port 2.

**Note 2: Shift is relative to 25 °C

***Note 3: Measured at ½ full scale rated pressure using BFSL

****Note 4: Proof pressure should not exceed 200 psi and burst pressure should not exceed 300 psi

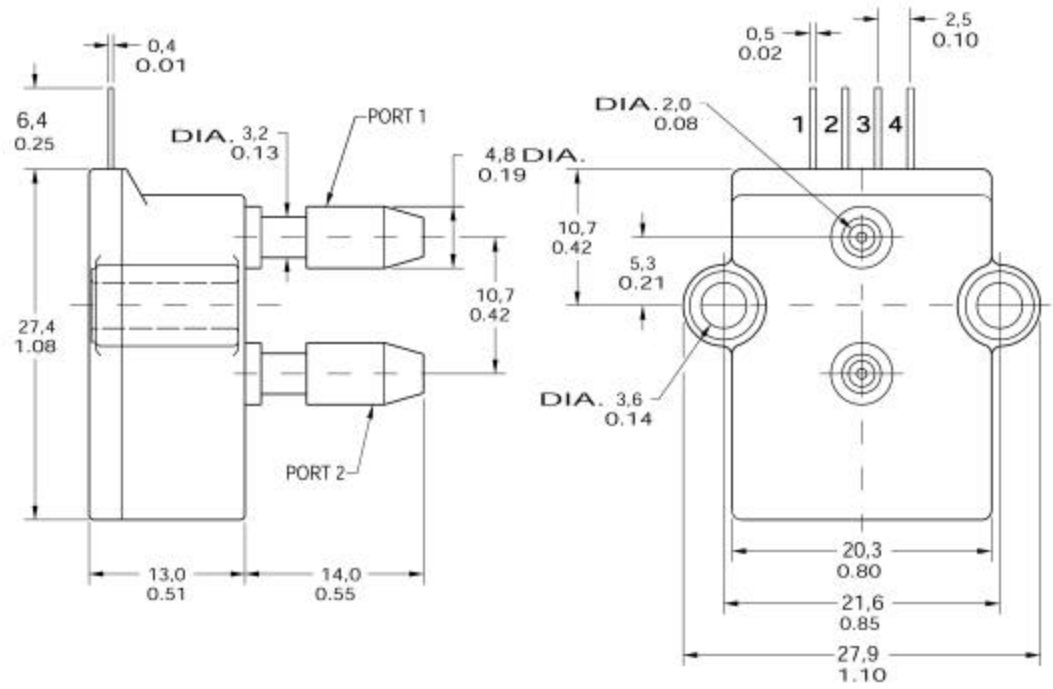
Equivalent Circuit



Pinout

1. V Excitation
2. Common
3. V Output
4. V Offset

MOUNTING DIMENSIONS (for reference only) mm/in
XCA SERIES, **XCA MOLDED PACKAGE**



APPLICATION INFORMATION

MEDIA COMPATIBILITY, WETTED MATERIALS
(Apply clean air dry only)

Port 2	**P2 Port:** Media must be compatible with nylon housing, epoxy adhesive and silicon. **Port not used for absolute devices.**
Port 1	**P1 Port: Dry Gases Only**. Media must be compatible with epoxy based adhesive. Dead volume of 0.0102 cubic inches.

PRESSURE COMPATIBILITY

XCA4 Gage and Absolute: Measures gage pressure only with positive pressure to port 2. There will be a small output voltage between the actual offset voltage and ground proportional to vacuum if applied to port 2.

XCA4 Differential: Measures differential pressure with positive pressure to port 2 and negative pressure, vacuum, to port 1. The offset is set to 2.25 volts at 0 psid. It will change slightly with changes in common mode (line) pressure. The maximum common mode or line pressure is 50 psi except for 5 psi and less where the maximum is 190 psi.

XCA5 Gage and Absolute: Measures gage pressure only with positive pressure to port 2. There will be a small output voltage between the actual offset voltage and ground proportional to vacuum if applied to port 2.

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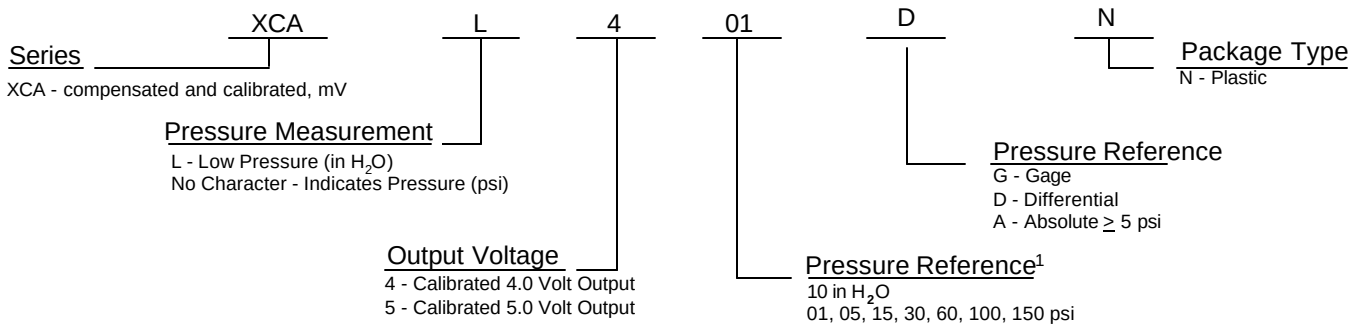
XCA SERIES ORDER GUIDE

(Not all product combinations are released.)



NOTE 1: The 10 in H_2O and 1 psi range exhibit a slight sensitivity to change in position (gravity sensitivity).

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and is **in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

For application assistance, current specifications, or name of the nearest Authorized Distributor, contact a nearby sales office. Or call:

1-800-537-6945 USA

1-800-737-3360 Canada

1-815-235-6847 International

FAX

1-815-235-6545 USA

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