

## Silicon Pressure Sensors

Sursense™ Ultra Low Pressure Sensors

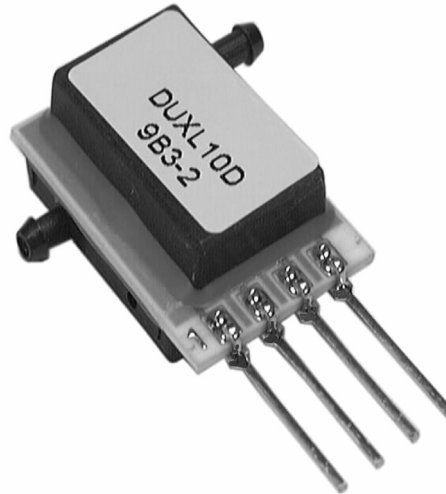
*DUXL Series*

### FEATURES

- Position Sensitivity to  $\pm 5$  mV/g, typical
- Operating Temperature Range -25 °C to 85 °C [-13 °F to 185 °F]
- Available in Gage and Differential Pressure Ranges

### TYPICAL APPLICATIONS

- Handheld Instrumentation
- Airflow Controllers
- Medical Monitors
- Smart Microvalves and Switches
- Level Indicators



### GENERAL DESCRIPTION

The SURSENSE™ line of ultra low pressure sensors is based upon a proprietary technology designed to reduce all output offset or common mode errors.

These sensors use a silicon, micromachined sensing element which features a unique stress concentration enhanced structure to provide a highly stable linear output that is proportional to applied pressure. Output offset errors due to changes in temperature, warm-up, long term stability and position sensitivity have all been significantly reduced when compared to conventional sensors.

The DUXL Series sensors provide a ratiometric millivolt output and are housed in a low profile miniature ported package. These sensors are intended for those applications where customized external signal conditioning is required or available from other sources. The low profile outline is ideal for portable applications where small size is critical.

Product is patented by US patent 6023978.

### **⚠ 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 a product installation guide.
- 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.**

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# DUXL Series

### DUXL ELECTRICAL SPECIFICATIONS at 4.5 Vdc Excitation 25 °C [77 °F]

	Min.	Typ.	Max.	Units
Excitation Voltage	3.0	4.5	8.0	Vdc
Span <sup>1</sup> except DUXL01D, DUXL05D	15	30	45	mV
Span <sup>1</sup> DUXL01D	4.0	6.0	8.0	mV
Span <sup>1</sup> DUXL05D	15	22.5	30	mV
Null	-10	0	10	mV
Offset Temperature Shift 0 °C to 50 °C [32 °F to 122 °F] <sup>2</sup>	--	100	--	µV
Span Temperature Shift 0 °C to 50 °C [32 °F to 122 °F] <sup>2</sup>	--	100	--	µV
Linearity, Hysteresis Error <sup>3</sup>	-0.5	0.1	0.5	% Span
Temperature Coefficient of Resistance	--	2600	--	% Span
Temperature Coefficient of Sensitivity	--	-2200	--	ppm/°C
Operating Temperature	-25 [-13]	--	85 [185]	°C [°F]
Storage Temperature	-40 [-40]	--	125 [257]	°C [°F]
Offset Warm-up Shift <sup>4</sup>		10		µV
Offset Position Sensitivity (±1 g) DUXL01D, DUXL05D		15		µV
Offset Position Sensitivity (±1 g) DUXL10D		10		µV
Offset Position Sensitivity (±1 g) DUXL20D, DUXL30D		5		µV
Offset Lon Term Stability (1 year)		±100		µV
Input Resistance	--	2.0	--	kΩ

Note 1: The voltage added to the offset voltage at full scale pressure. Nominally the output voltage range is 1.0 Vdc to 6.0 Vdc.

Note 2: Shift is relative to 25 °C [77 °F]

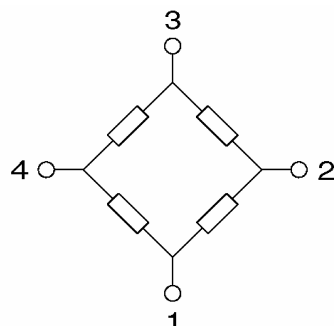
Note 3: Measured at ½ full scale rated pressure using BFSL

Note 4: Shift is within the first hour of excitation applied to the device.

### DUXL SERIES PRESSURE RATINGS - Inches H2O (By Catalog Listing)

DUXL	01D	05D	10D	20D	30D
Operating Pressure Range	1.0	5.0	10.0	20.0	30.0
Maximum Overpressure	100	100	150	200	300
Common Mode	50	50	50	50	50

#### Equivalent Circuit



#### Pinout

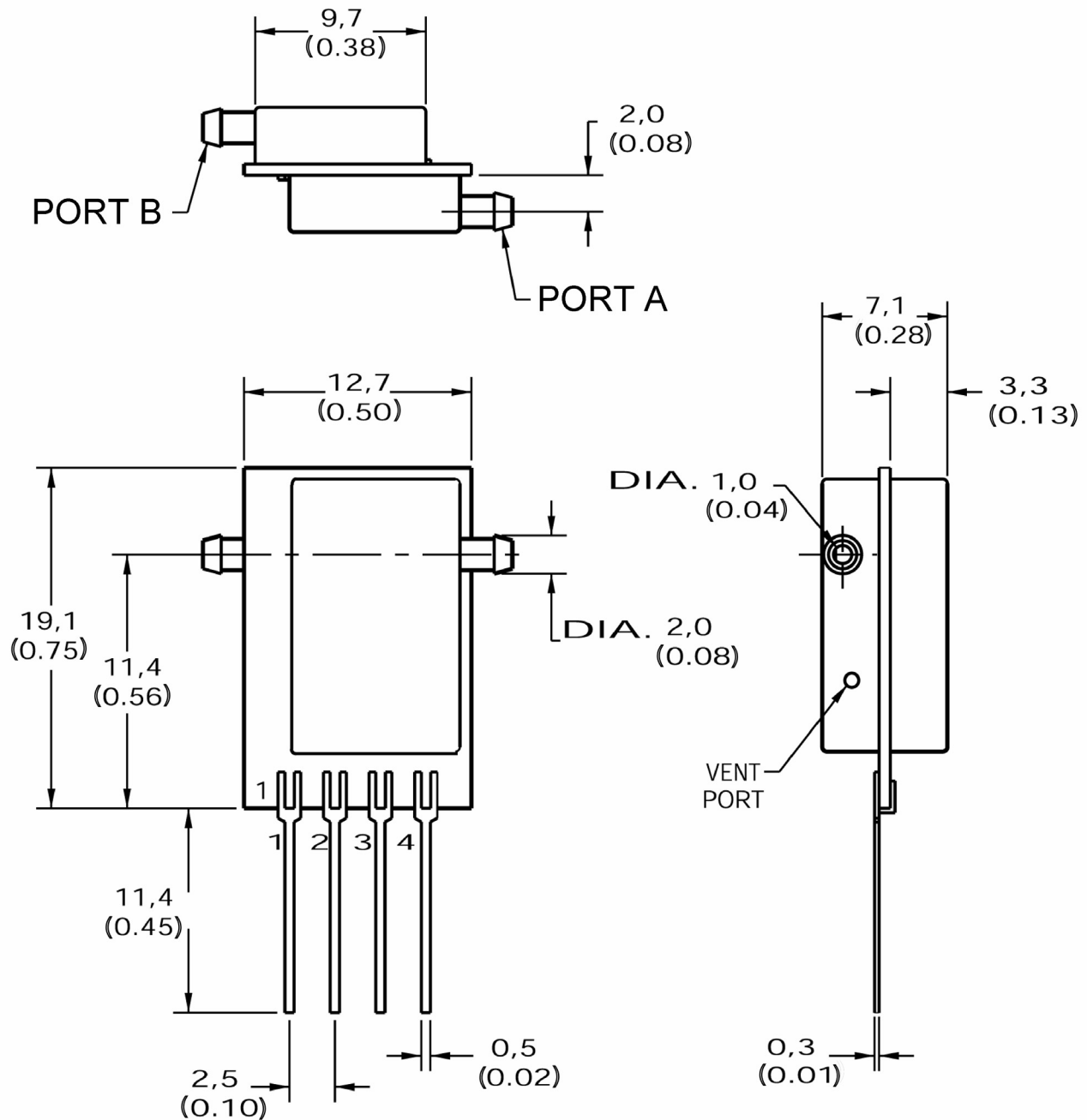
1. -Vdc Supply
2. +Vdc Output
3. +Vdc Supply
4. -Vdc Output

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# DUXL Series

PHYSICAL DIMENSIONS for reference only mm [In]



### APPLICATION INFORMATION

#### Media compatibility, wetted materials

Port A	Media must be compatible with nylon housing, epoxy adhesive and silicon.
Port B	Media must be compatible with nylon housing, epoxy adhesive and silicon.

### PRESSURE COMPATIBILITY

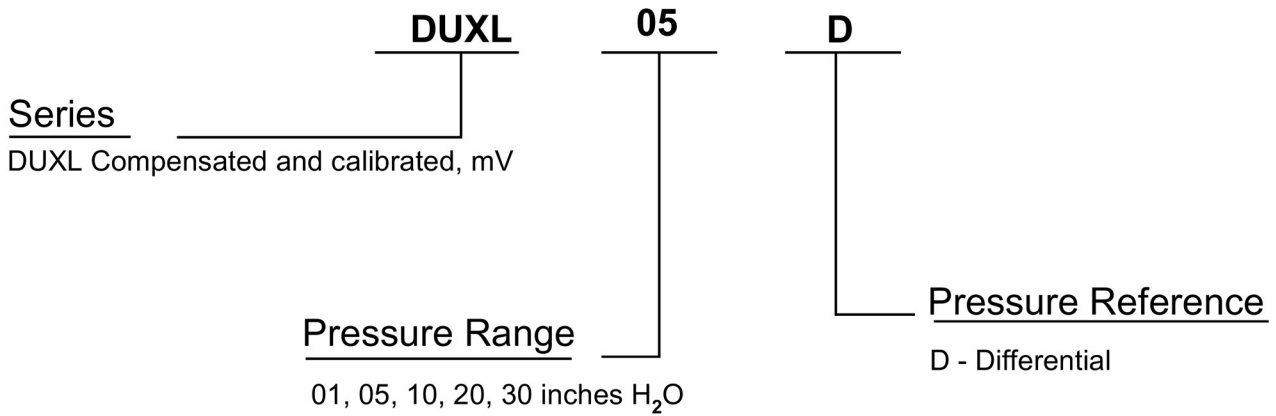
Measures differential or gage pressure and vacuum. Pressure may be applied to either port. For pressure to the low pressure port, the output polarity is reversed.

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# DUXL Series

### DUXL SERIES ORDER GUIDE



### 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/Canada

1-815-235-6847 International

### FAX

1-815-235-6545 USA

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