

DUXL Series

Sursense™ Ultra Low Silicon Pressure Sensors



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.

FEATURES

- Position sensitivity to ± 5 mV/g, typical
- Operating temperature range -25 °C to 85 °C [-13 °F to 185 °F]
- Available in gage and differential pressure ranges

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

POTENTIAL APPLICATIONS

- Hand held instrumentation
- Airflow controllers
- Medical monitors
- Smart microvalves and switches
- Level indicators

DUXL Series

ELECTRICAL SPECIFICATIONS (At 4.5 Vdc Excitation 25 °C [77 °F].)

Characteristic	Min.	Typ.	Max.	Unit
Excitation voltage	3.0	4.5	8.0	Vdc
Span ⁽¹⁾ except DUXL01D, DUXL05D	15	30	45	mV
Span ⁽¹⁾ DUXL01D	4.0	6.0	8.0	mV
Span ⁽¹⁾ DUXL05D	15	22.5	30	mV
Null	-10	0	10	mV
Offset temperature shift 0 °C to 50 °C [32 °F to 122 °F] ⁽²⁾	–	100	–	µV
Span temperature shift 0 °C to 50 °C [32 °F to 122 °F] ⁽²⁾	–	100	–	µV
Linearity, hysteresis error ⁽³⁾	-0.5	0.1	0.5	% span
Temperature coefficient of resistance	–	2600	–	ppm/°C
Temperature cCoefficient 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 ⁴	–	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 long term stability (1 year)	–	±100	–	µV
Input resistance	–	2.0	–	kΩ

Notes:

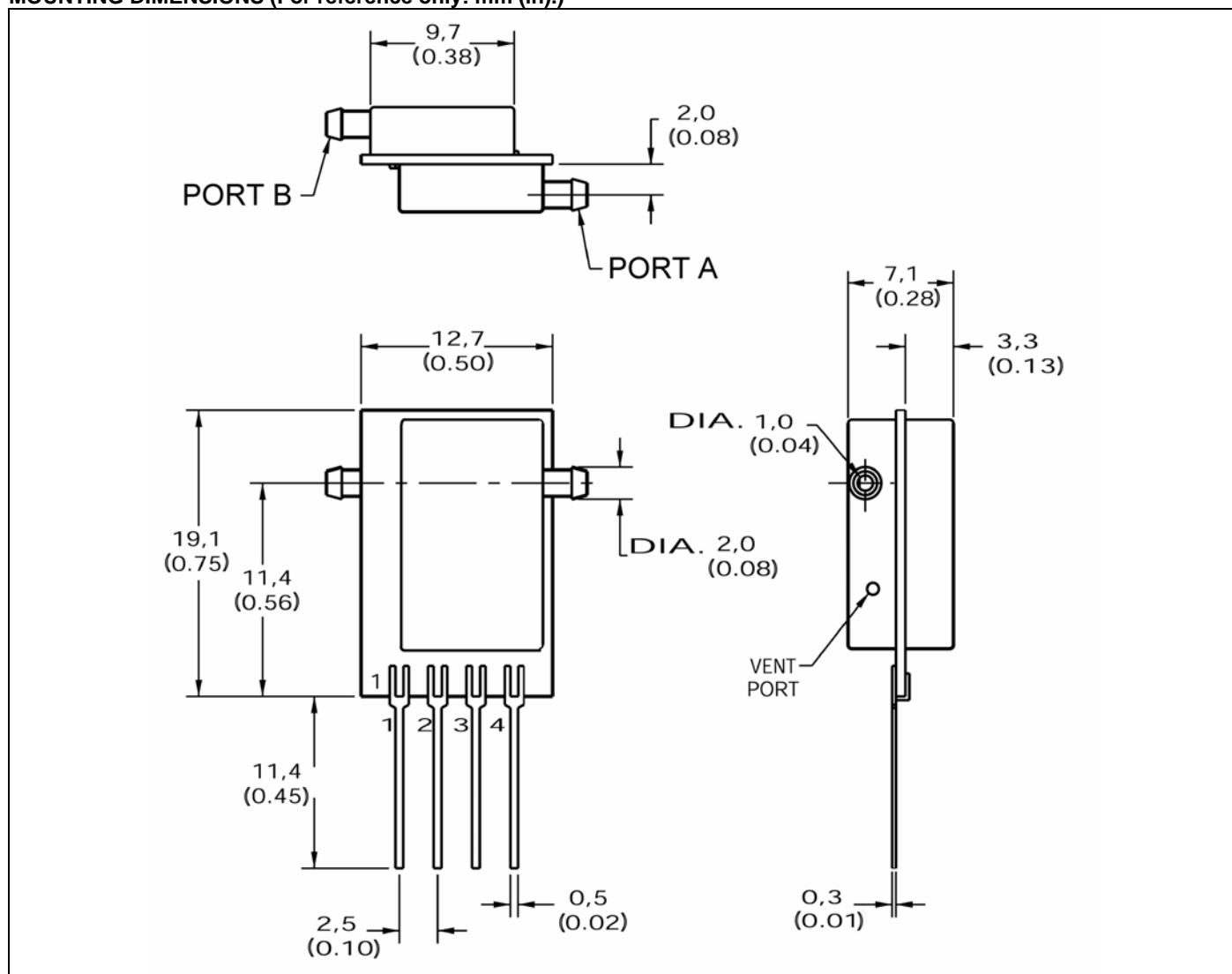
1. The voltage added to the offset voltage at full scale pressure. Nominally the output voltage range is 1.0 Vdc to 6.0 Vdc.
2. Shift is relative to 25 °C [77 °F]
3. Measured at ½ full scale operating pressure using BFSL
4. Shift is within the first hour of excitation applied to the device.

PRESSURE RATINGS (In H₂O by Catalog Listing)

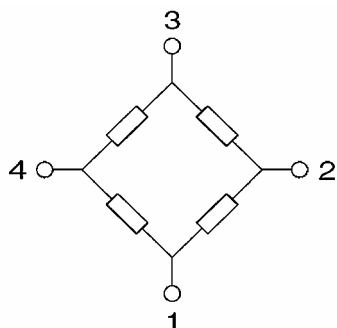
Characteristic	01D	05D	10D	20D	30D
Operating pressure range	1.0	5.0	10.0	20.0	30.0
Maximum overpressure	100	100	150	200	300
Common mode	50	50	50	50	50

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MOUNTING DIMENSIONS (For reference only: mm (in.))



EQUIVALENT CIRCUIT



Pinout

- 1. -Vdc supply
- 2. +Vdc output
- 3. +Vdc supply
- 4. -Vdc output

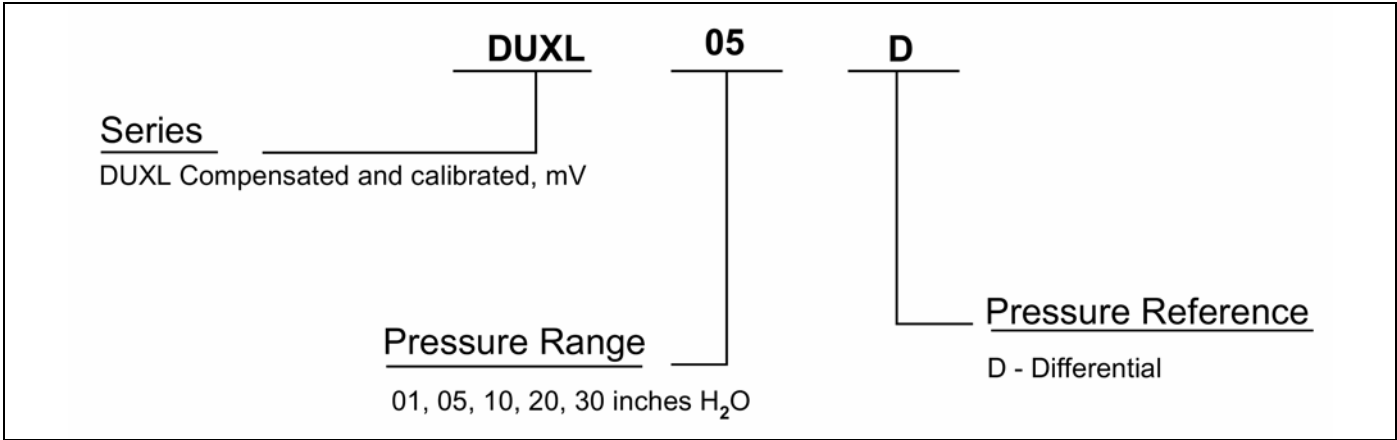
MEDIA COMPATIBILITY: Clean, dry gases only

- 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.

ORDER GUIDE



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.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, 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. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

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.

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.

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.

SALES AND SERVICE

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

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