Ultra Low Pressure Sensing

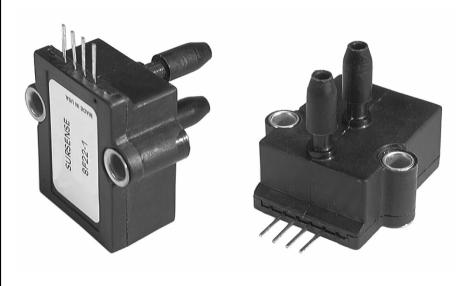
DC Series

FEATURES

- Ultra Low Pressure Sensing, down to 2.5 mBar
- ASIC Technology
- Available in Gage and Differential Pressure Ranges
- · Available in Ratiometric and Regulated
- Temperature Compensated over 0 °C to 50°C [32 °F to 122 °F]
- Combined Linearity and Hysteresis error < ±0.25 % Span

TYPICAL APPLICATIONS

- Medical Instrumentation
- **HVAC Environmental Controls**
- Portable Monitors



GENERAL DESCRIPTION

The DC Series pressure sensors combine SURSENSETM precision high sensitivity silicon sensing capabilities with the latest in Application Specific Integrated Circuitry ASIC technology to produce one of the most precise, reliable pressure sensors in the market. The SURSENSE technology provides Dynamic Self Compensation which substantially reduces offset errors due to changes in temperature, stability to warm up, long term instability and position sensitivity.

When operated with an unregulated 7.0 Vdc to 30.0 Vdc supply the DC sensors provides a ratiometric 0.50 to 4.50 Vdc output (4.0 Vdc span).

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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ELECTRICAL SPECIFICATIONS

| Ouput | Pressure Reference | Excitation (Vdc) | Offset ⁽¹⁾ Voltage (Vdc) | Output Span (Vdc) | Supply Current (max.) | Output Source Current (max.) | Output Sink Current @ null (max.) |
|----------------|-----------------------|------------------|--|----------------------|--------------------------|------------------------------------|---|
| C4 Ratiometric | Gage | 5 ±0.1 | 0.25 | 4 | 4 mA | 2.0 mA | 20 μΑ |
| | Differential | 5 ±0.1 | 2.25 | ±2 | 4 mA | 2.0 mA | 20 μΑ |
| R4 Regulated | Gage | 7 to 30 | 0.25 | 4 | 8 mA | 2.0 mA | 20 μΑ |
| | Differential | 7 to 30 | 2.25 | ±2 | 8 mA | 2.0 mA | 20 μΑ |
| R5 Regulated | Gage | 7 to 30 | 1.0 | 5 | 8 mA | 2.0 mA | 20 μΑ |
| | Differential | 7 to 30 | 3.5 | ±2.5 | 8 mA | 2.0 mA | 20 μΑ |

PERFORMANCE SPECIFICATIONS(2)

| Pressure Ranges | Overpressure | Offset Position Sensitivity | Total Error (Typical) | Total Error ⁽³⁾ (Max.) | Accuracy ⁽⁴⁾ |
|--------------------|--------------|-----------------------------------|--------------------------|-----------------------------------|-------------------------|
| ±0.5 in H2O | 100 in H2O | ±10 mV | ±2.0 % | ±3.0 % | ±0.25 % |
| 1 in H2O | 100 in H2O | ±10 mV | ±2.0 % | ±3.0 % | ±0.25 % |
| 2.5 mBar | 250 mBar | ±10 mV | ±2.0 % | ±3.0 % | ±0.25 % |
| 2 in H2O | 100 in H2O | ±10 mV | ±1.5 % | ±2.5 % | ±0.25 % |
| 5 mBar | 250 mBar | ±10 mV | ±1.5 % | ±2.5 % | ±0.25 % |
| 2.5 in H2O | 100 in H2O | ±10 mV | ±1.5 % | ±2.5 % | ±0.25 % |
| 5 in H2O | 150 in H2O | ±5 mV | ±1.0 % | ±2.0 % | ±0.25 % |
| 10 mBar | 375 mBar | ±5 mV | ±1.0 % | ±2.0 % | ±0.25 % |
| 10 in H2O | 150 in H2O | ±1 mV | ±1.0 % | ±2.0 % | ±0.25 % |
| 25 mBar | 375 mBar | ±1 mV | ±1.0 % | ±2.0 % | ±0.25 % |
| 20 in H2O | 300 in H2O | ±1 mV | ±1.0 % | ±2.0 % | ±0.25 % |
| 50 mBar | 750 mBar | ±1 mV | ±1.0 % | ±2.0 % | ±0.25 % |
| 30 in H2O | 450 in H2O | ±1 mV | ±1.0 % | ±2.0 % | ±0.25 % |
| 75 mBar | 1125 mBar | ±1 mV | ±1.0 % | ±2.0 % | ±0.25 % |
| 140 cm H2O | 1125 cm H2O | ±1 mV | ±1.0 % | ±2.0 % | ±0.25 % |

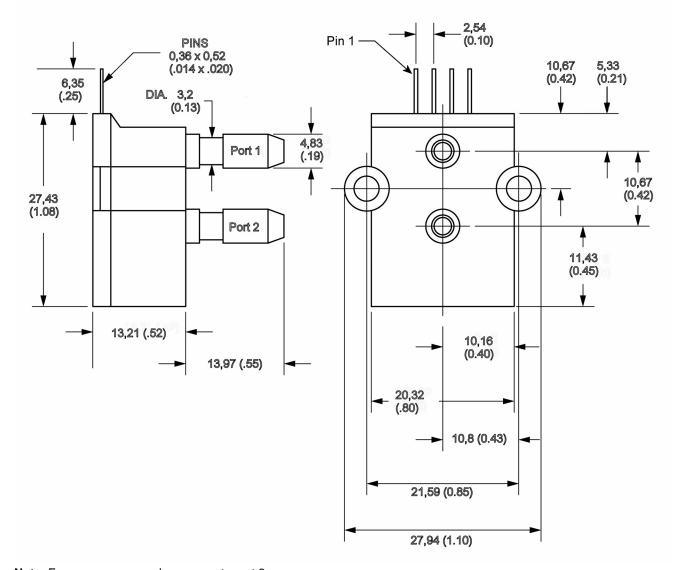
- Note 1: Offset voltage and output span are nominal
- Note 2: All specifications are relative to readings taken at 25 °C [77 °F] and at rated excitation unless otherwise specified.
- **Note 3:** Percentage of Full Scale Includes: zero calibration, span calibration, temperature effect on zero and span, non-linearity, hysteresis, repeatability and stability over the compensated temperature range.
- Note 4: Percentage of Best Fit Straight Line Includes: non-linearity, hysteresis, and repeatability.

| Material in Contact with Media | Silicon diaphragm, glass filled nylon, silicone, and alumina | | |
|--------------------------------|--|--|--|
| | ceramic. | | |
| Compensated Temperature Range | 0 °C to 50 °C [32 °F to 170 °F] | | |
| Operating Temperature Range | -25 °C to 85 °C [-13 °F to 185 °F] | | |
| Storage Temperature | -40 °C to 125 °C [-40 °F to 257 °F] | | |

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PHYSICAL DIMENSIONS for reference only mm [In]



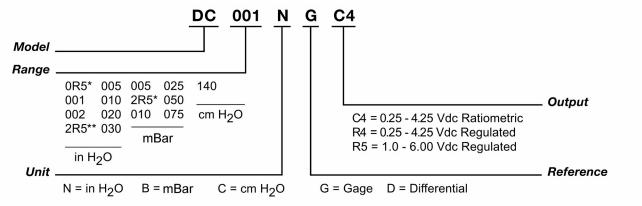
Note: For gage sensor apply pressure to port 2.

| DC Electrical Output Version | | | | | | | |
|------------------------------|------------------|----------------------|--------------------|--|--|--|--|
| Pin | C4 | R4 | R5 | | | | |
| Number | 0.25 Vdc to 4.25 | 0.25 Vdc to 4.25 Vdc | 1.0 Vdc to 6.0 Vdc | | | | |
| | Vdc Ratiometric | Regulated | Regulated | | | | |
| 1 | V Excitation | V Excitation | V Excitation | | | | |
| 2 | Common | Common | Common | | | | |
| 3 | V out | V out | V out | | | | |
| 4 | Not for | Not for | Not for | | | | |
| | Customer Use | Customer Use | Customer Use | | | | |

Ultra Low Pressure Sensing

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DC SERIES ORDER GUIDE



^{*} Note: Differential Only

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

INTERNET

www.honeywell.com/sensing info.sc@honeywell.com

Honeywell

Sensing and Control www.honeywell.com/sensing

Honeywell

11 West Spring Street

Freeport, Illinois 61032

^{**} Note: The character R replaces the decimal points in fractional pressure ranges. Minimum order quantities apply. Contact the factory for more details.