



**THE DATASHEET OF
DC002NDC4**



Silicon Pressure Sensors

Ultra Low Pressure Sensing

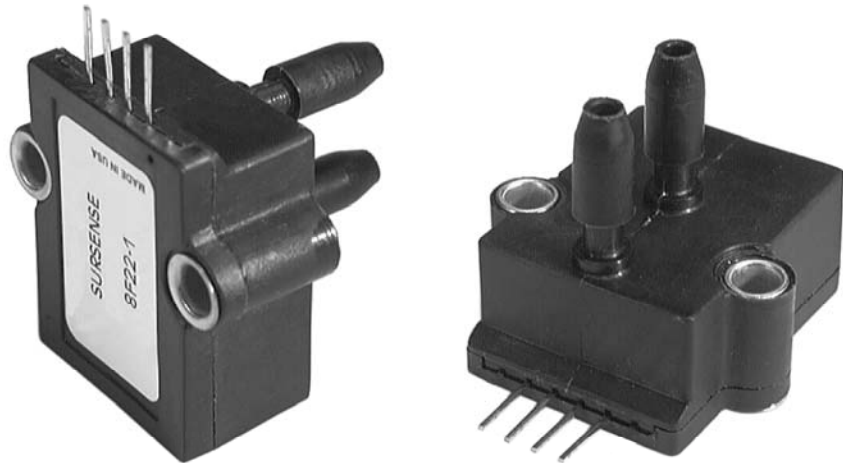
DC Series

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 < $\pm 0.25\%$ Span

TYPICAL APPLICATIONS

- Medical Instrumentation
- HVAC
- Environmental Controls
- Portable Monitors



GENERAL DESCRIPTION

The DC Series pressure sensors combine SURSENSE™ 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 16.0 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 µA |
| | Differential | 5 ±0.1 | 2.25 | ±2 | 4 mA | 2.0 mA | 20 µA |
| R4 Regulated | Gage | 7 to 16 | 0.25 | 4 | 8 mA | 2.0 mA | 20 µA |
| | Differential | 7 to 16 | 2.25 | ±2 | 8 mA | 2.0 mA | 20 µA |
| R5 Regulated | Gage | 7 to 16 | 0.25 | 5 | 8 mA | 2.0 mA | 20 µA |
| | Differential | 7 to 16 | 3.5 | ±2.5 | 8 mA | 2.0 mA | 20 µA |

PERFORMANCE SPECIFICATIONS⁽²⁾

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

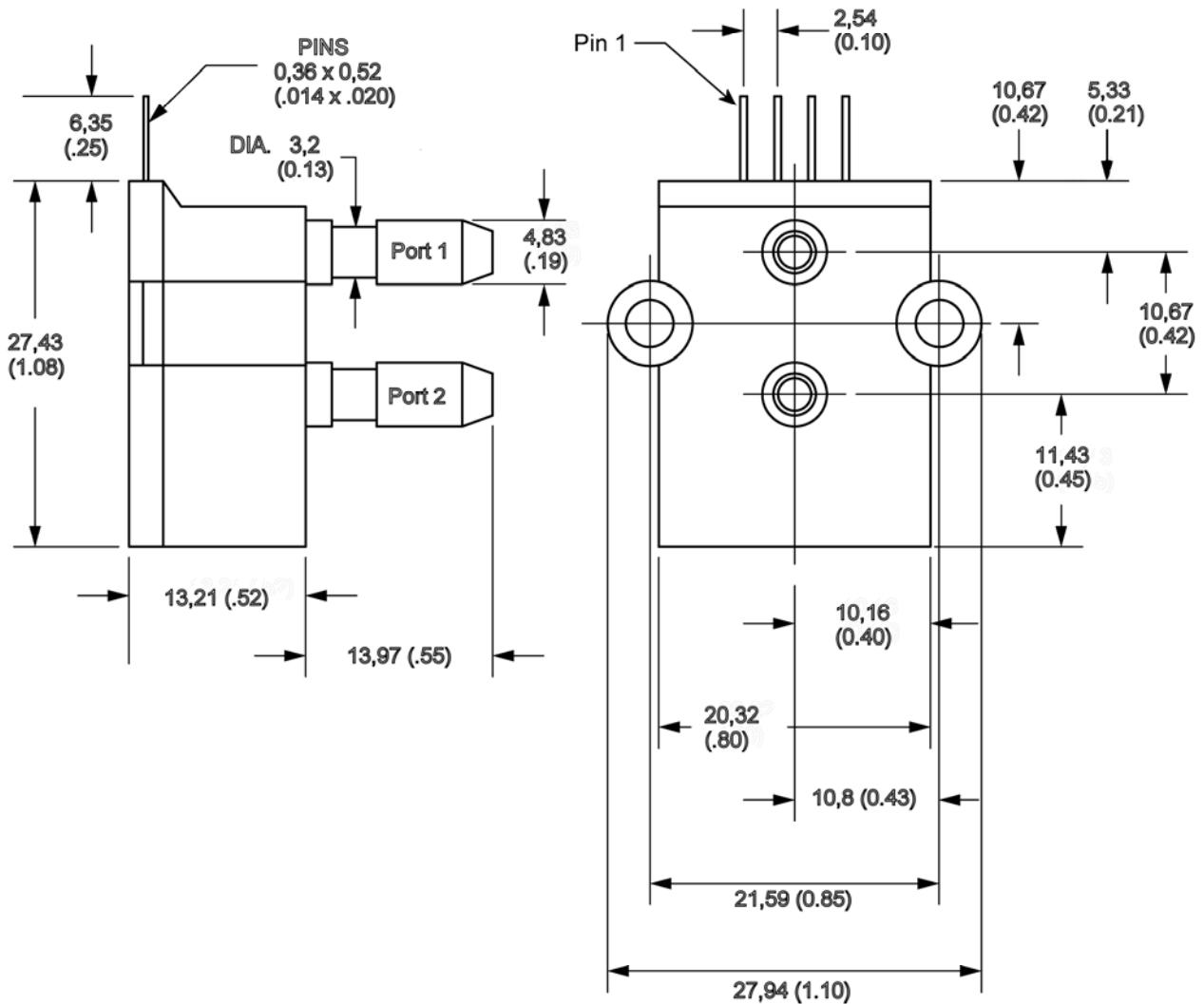
| | |
|--------------------------------|---|
| Material in Contact with Media | Silicon diaphragm, glass filled nylon, silicone, and alumina ceramic. |
| Compensated Temperature Range | 0 °C to 50 °C [32 °F to 170 °F] |
| Operating Temperature Range | -25 °C to 85 °C [-13 °F to 185 °F] |
| Storage Temperature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

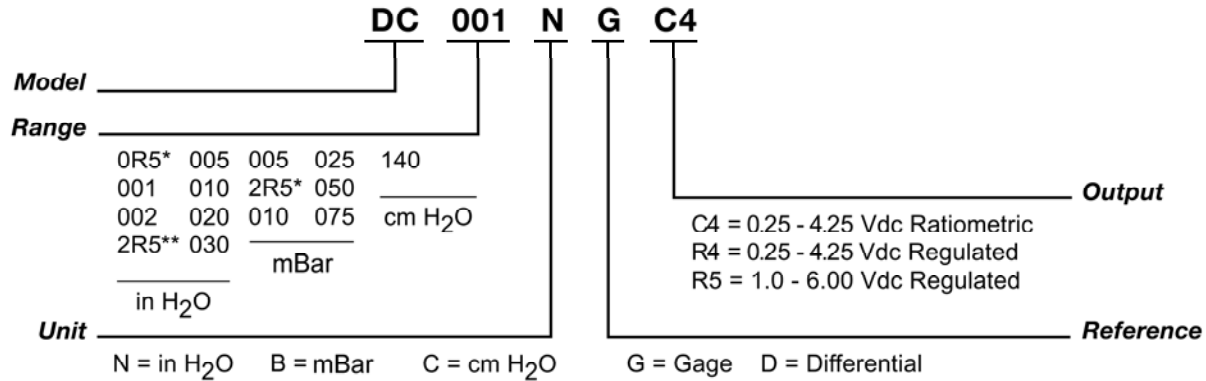
| Pin Number | C4 0.25 Vdc to 4.25 Vdc Ratiometric | R4 0.25 Vdc to 4.25 Vdc Regulated | R5 1.0 Vdc to 6.0 Vdc Regulated |
|------------|---|---|---------------------------------------|
| 1 | V Excitation | V Excitation | V Excitation |
| 2 | Common | Common | Common |
| 3 | V out | V out | V out |
|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

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DC SERIES ORDER GUIDE



* Note: Differential Only

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

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.**

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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

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1-815-235-6545 USA

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