

# Falcon Low Voltage Powered Digital Pressure Gauges

## DPG1000AD, DPG1000ADB with backlit display

- **±0.25% Test Gauge Accuracy**
- **316 Stainless Steel Wetted Parts**
- **Powered by 8-24 VAC or 9-32 VDC**
- **Rugged Extruded Aluminum Case**

### ELECTRICAL SPECIFICATIONS

#### Ranges and Resolution

-30.0 inHg/15.0 psig*	50.0 oz/in <sup>2</sup>	±1.000 kg/cm <sup>2</sup>	7.00 MPa
-30.0 inHg/100.0 psig*	80.0 oz/in <sup>2</sup>	1.000 kg/cm <sup>2</sup> abs	19.99 MPa
<b>3.00 psig</b>	240 oz/in <sup>2</sup>	1.000 kg/cm <sup>2</sup>	35.0 Mpa
<b>5.00 psig</b>	85.0 inH <sub>2</sub> O	1.999 kg/cm <sup>2</sup>	199.9 mbar
15.00 psi abs	140.0 inH <sub>2</sub> O	7.00 kg/cm <sup>2</sup> abs	350 mbar
<b>15.00 psig vac</b>	400 inH <sub>2</sub> O abs	7.00 kg/cm <sup>2</sup>	1000 mbar abs
±15.00 psig	400 inH <sub>2</sub> O vac	15.00 kg/cm <sup>2</sup>	±1000 mbar
<b>15.00 psig</b>	±400 inH <sub>2</sub> O	19.99 kg/cm <sup>2</sup>	1000 mbar
<b>30.0 psig</b>	400 inH <sub>2</sub> O	35.0 kg/cm <sup>2</sup>	1999 mbar
100.0 psi abs	850 inH <sub>2</sub> O	70.0 kg/cm <sup>2</sup>	1.000 bar abs
<b>100.0 psig</b>	7.00 ftH <sub>2</sub> O	199.9 kg/cm <sup>2</sup>	1.000 bar
<b>199.9 psig</b>	12.00 ftH <sub>2</sub> O	350 kg/cm <sup>2</sup>	1.999 bar
<b>300 psig</b>	35.0 ftH <sub>2</sub> O	1000 g/cm <sup>2</sup> abs	7.00 bar abs
<b>500 psig</b>	70.0 ftH <sub>2</sub> O	1000 g/cm <sup>2</sup>	7.00 bar
<b>1000 psig</b>	250 ftH <sub>2</sub> O	1999 g/cm <sup>2</sup>	15.00 bar
3000 psig	500 ftH <sub>2</sub> O	19.99 kPa	19.99 bar
5000 psig	150.0 mmHg	35.0 kPa	35.0 bar
<b>6.00 inHg</b>	250 mmHg	100.0 kPa abs	70.0 bar
<b>10.00 inHg</b>	760 mmHg abs	100.0 kPa	199.9 bar
<b>30.0 inHg vac</b>	760 mmHg vac	199.9 kPa	350 bar
<b>30.0 inHg</b>	760 mmHg	700 kPa abs	199.9 cmH <sub>2</sub> O
<b>60.0 inHg</b>	1500 mmHg	700 kPa	350 cmH <sub>2</sub> O
199.9 inHg abs	760 torr abs	1500 kPa	1000 cmH <sub>2</sub> O
<b>199.9 inHg</b>	1999 mmH <sub>2</sub> O	1999 kPa	1999 cmH <sub>2</sub> O

**Bold** indicates standard ranges, price adder for all others  
 "abs" indicates absolute reference, gauge will read atmospheric pressure with no connection and zero under full vacuum.  
 "vac" indicates vacuum gauge, minus sign not used unless specified  
 Resolution is fixed as indicated in table below  
 ADBL (display backlighting) not available in 3000 and 5000 psi ranges  
 Contact factory for engineering units not listed

**Accuracy** (linearity, hysteresis, repeatability)  
 ±0.25% of full scale ±1 least significant digit typical

**Temperature Stability** (relative to 25°C)  
 ±1% FS for offset and span, 0 to 70°C typical  
 ±2% FS for offset and span, 0 to 70°C typical for 3 and 5 psi ranges

**Display** (update rate, type, size)  
 3 readings per second nominal display update rate  
 AD ranges up to 1999: 3½ digit LCD, ½" digit height  
 AD in 3000 and 5000 psi ranges: 4 digit LCD, 0.4" digit height  
 ADBL ranges up to 1999: 3½ digit LCD, ½" digit height, red LED backlighting

**Controls & Location**  
 AD ranges up to 1999: Front pushbutton turns gauge on or off  
 Front-accessible potentiometers, non-interactive zero and span, ±10% range  
 ADBL ranges up to 1999: Front pushbutton turns gauge on or off and activates backlighting  
 Front-accessible potentiometers, non-interactive zero and span, ±10% range  
 AD in 3000 and 5000 psi ranges: On whenever power is applied  
 Top-accessible potentiometers, non-interactive zero and span, ±10% range

**Power**  
 Any AC source of 8 to 24 VAC 50/60 Hz or any DC source of 9 to 32 VDC  
 AD: Approx 5 mA  
 ADBL: approx 80 mA  
 Order optional **WMPSK** 12 VDC wall mount power supply kit to operate on 115 VAC.  
 All models are designed for continuous operation

DPG1000AD with  
1000 psig range



DPG1000AD with  
5000 psig range

### MECHANICAL SPECIFICATIONS

**Size**  
 3.38"W x 2.88"H x 1.65"D (not including pressure fitting)  
 Add approximately 0.75" to height for pressure fitting.

**Weight** (approximate)  
 Gauge: 9 ounces, Shipping weight: 1 pound

**Material**  
 Extruded aluminum case, epoxy powder coated  
 Polycarbonate cover, front and rear gaskets

**Color**  
 Light gray body, light gray/blue front

**Pressure/Vacuum Connection and Material**  
 ¼" NPT male, 316 stainless steel

**Media Compatibility**  
 All wetted parts are 316 SS  
 Compatible with most liquids and gases

**Overpressure**  
 5000 psig for 3000 psig range or equivalent  
 7500 psig for 5000 psig range or equivalent  
 All others 2x rated pressure minimum

**Burst Pressure**  
 4x rated pressure minimum or 10,000 psi, whichever is less

### ENVIRONMENTAL SPECIFICATIONS

**Storage temperature** ..... -40 to +95°C  
**Operating temperature** ..... -20 to +85°C  
**Compensated temperature** ..... 0 to +70°C

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## Description

The DPG1000 series is a versatile family of industrial pressure/vacuum gauges featuring a rugged, splashproof extruded aluminum case. A 1/4" NPT 316 stainless steel fitting is standard for the pressure connection. Media compatibility includes any liquids or gases compatible with 316 stainless steel.

The DPG1000 features a wide operating temperature range of -20 to +85°C. Many different standard pressure/vacuum ranges (in a choice of engineering units) with both gauge and absolute references are available.

**DPG1000AD** and **DPG1000ADBL** models with ranges up to 1999 feature a 3 1/2 digit display with 1/2" high digits. The **DPG1000AD** with 3000 and 5000 psi ranges use a 4 digit display with 0.4" high digits.

The **DPG1000AD** and **DPG1000ADBL** are designed for applications where a continuous use display of pressure (or vacuum) is required.

## Installation

When installing gauge, tighten using wrench on hex fitting only. Do not attempt to tighten by turning housing or any other part of the gauge. Use fittings appropriate for the pressure range of the gauge. Do not apply vacuum to gauges not designed for vacuum operation.

The **DPG1000AD** and **DPG1000ADBL** can be powered by any AC source of 8 to 24 VAC 50/60 Hz, or any DC source of 9 to 32 VDC. The type and magnitude of the supply voltage have negligible effects on the gauge calibration as long as it is within the voltage ranges stated above. No recalibration is needed, and no jumpers need to be moved to use either AC or DC power within the specified range. No polarity needs to be observed when connecting a DC supply. Therefore, they can be used with inexpensive unregulated low voltage AC or DC power sources in applications requiring a continuous pressure display.

**NEVER connect the gauge wires directly to 115 VAC or permanent damage not covered by warranty will result.**

After the gauge is installed, route the wires away from heat sources and moving equipment and connect the AC adapter's plug to the gauge cable connector. Lastly, plug the AC adapter into a 115 VAC outlet.

The only important consideration is to ensure that the gauge supply voltage does not fall below 8 VAC RMS if AC power is used, or 9 VDC if DC power is used. Operation with less than these values may cause erratic or erroneous readings.

If your application requires operation of multiple gauges from the same power supply, consult the factory for wiring recommendations.

## Operation

**DPG1000AD and DPG1000ADBL with ranges 1999 and below:** When a supply voltage is applied, the gauge will be ready to use. If the gauge display is off, press the center button to turn the gauge on. If the gauge is in the power-on state and the power is disconnected, the gauge will turn on when power is reapplied. The gauge can be left on continuously or turned off when not in use.

**DPG1000AD with 3000 and 5000 psi ranges:** When a supply voltage is applied, the gauge will power up and be ready to use. The gauge can be left on continuously.

Cecomp Electronics maintains a constant effort to upgrade and improve its products, therefore specifications are subject to change.

## Calibration

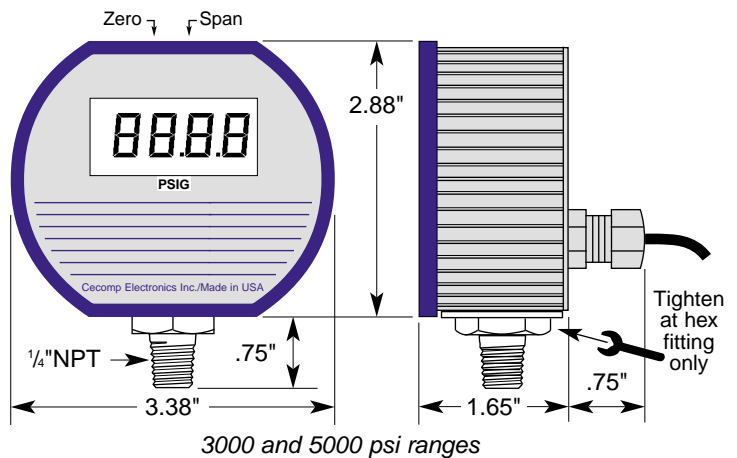
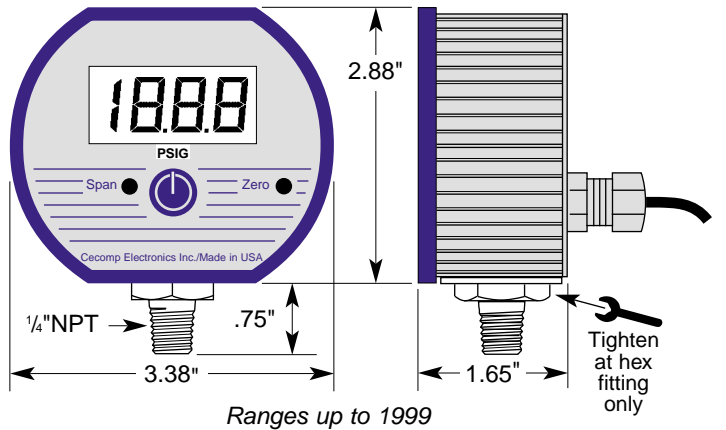
Remove the calibration potentiometer covers on the front of the unit to access the zero and span controls.

**GAUGE** reference units may be re-zeroed without affecting the span calibration. The gauge port must be open to the ambient with no pressure or vacuum applied. Adjust the Zero control until the gauge reads zero with the minus (-) sign occasionally flashing.

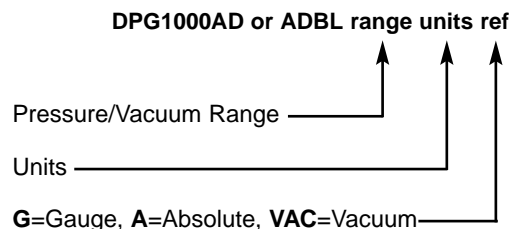
Span calibration should only be attempted if the user has access to a pressure reference of known accuracy. The quality of the calibration is only as good as the accuracy of the calibration equipment and ideally should be at least four times the gauge accuracy. Zero calibration must be done before span calibration. Record readings at three to five points over the range of gauge and adjust span control to minimize error and meet specifications.

**ABSOLUTE** reference gauges require vacuum generation and atmospheric pressure measurement equipment for accurate calibration and thus are more difficult to calibrate in the field.

Gauges may be returned to Cecomp Electronics for factory certified recalibration. N.I.S.T. traceability is available.



## MODEL DESIGNATION SYSTEM



**Example:** **DPG1000AD30INHGVAC** = DPG1000, AC/DC powered, 30.0 inches Hg vacuum