

® **OMEGA ENGINEERING, INC.**

Digital Pressure Gauges

DPG1100AD Series, NEMA 4X, Low Voltage AC/DC Powered
DPG1100ADBL Series, NEMA 4X, Low Voltage AC/DC
Powered with Backlit Display



INSTRUCTION SHEET

M3763/1101

Description

The **DPG1100AD** and **DPG1100ADBL** are designed for industrial applications where a continuous display of pressure (or vacuum) is required. The temperature compensated piezoresistive transducer features 316 stainless steel wetted parts.

Installation Precautions

Tighten/remove with wrench on hex fitting only. Do not attempt to rotate gauge by turning housing. Use fittings appropriate for the pressure range of the gauge. Do not apply vacuum to gauges not designed for vacuum operation. **NEVER** insert objects into the gauge port or blow out with compressed air. Permanent damage not covered by warranty will result to the sensor.

The **DPG1100AD** and **DPG1100ADBL** 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 gauges can be used with inexpensive unregulated low voltage AC or DC power supplies. 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 polarity needs to be observed when connecting a DC supply.

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 safely and connect the AC adapter's wires to the gauge cable. 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

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.

DPG1100ADBL model display backlighting will be on whenever gauge is on.

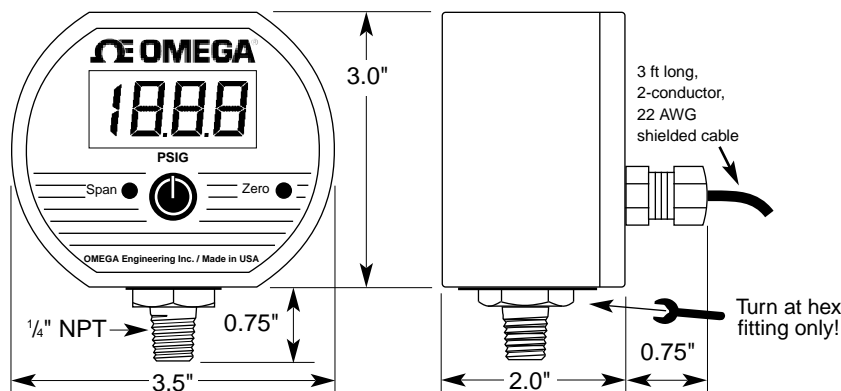
Calibration

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 accuracy of the calibration equipment 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.



SPECIFICATIONS

Ranges & Resolution

–30.0 inHg vac to 15.0 psig
–30.0 inHg vac to 100.0 psig
30.0 inHg vacuum, ±15.00 psig
3.00, 5.00, 15.00, 30.0, 100.0, 199.9 psig
300, 500, 1000 psig
Absolute reference: 15.00, 100.0 psia

Optional Units

Most engineering units such as kPa, atm, bar, mbar, inHg, mmHg, inH₂O, ftH₂O, torr, kg/cm², cmH₂O, oz/in²

Display (type, size, update rate)

3½ digit LCD, ½" digit height
3 readings per second nominal display update
ADBL: Red LED display backlighting when gauge is on

Accuracy (linearity, hysteresis, repeatability)

±0.25% of full scale or better, ±1 least significant digit

Temperature Stability (relative to 77°F or 25°C)

±1% FS for offset & span, 32 to 158°F (0 to 70°C) typical
±2% FS for offset & span, 32 to 158°F (0 to 70°C) typical for 3 and 5 psi ranges

Controls & Location

Front button turns gauge on or off
Front-accessible calibration potentiometers
Non-interactive zero & span, ±10% range

Power

AD: Approximately 5 mA
ADBL: Approximately 80 mA
Operates on 8 to 24 VAC 50/60 Hz or 9 to 32 VDC
Optional wall mount power supply is available to operate on 115VAC

Weight (approximate)

Gauge: 9 ounces, shipping weight: 1 pound

Optional Power Supply Kit DPG1000-PS

The kit includes a UL and CSA listed 115 VAC (50/60 Hz) wall-mount power supply with U.S.-style 2-prong plug. Output is 12 VDC at 200 mA. The two-conductor wire is approximately 6 feet long with stripped wire ends. Use a pair of pliers to connect gauge and power supply wires using the included moisture-resistant connector.



Housing

NEMA 4X
UV stabilized polycarbonate/ABS case, light gray color
Clear polycarbonate window to protect display
Gasketed rear cover, six captive stainless steel screws

Pressure/Vacuum Connection and Material

¼" NPT male, all wetted parts are 316 SS

Overpressure & Burst

5000 psig for metric units using 3000 psig sensor
7500 psig for metric units using 5000 psig sensor
All others 2x rated pressure minimum
Burst: 4x rated pressure minimum or 10,000 psi, whichever is less

Storage temperature: –40 to 203°F (–40 to 95°C)

Operating temperature: –4 to 185°F (–20 to 85°C)

Compensated temperature: 32 to 158°F (0 to 70°C)