

Ω 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

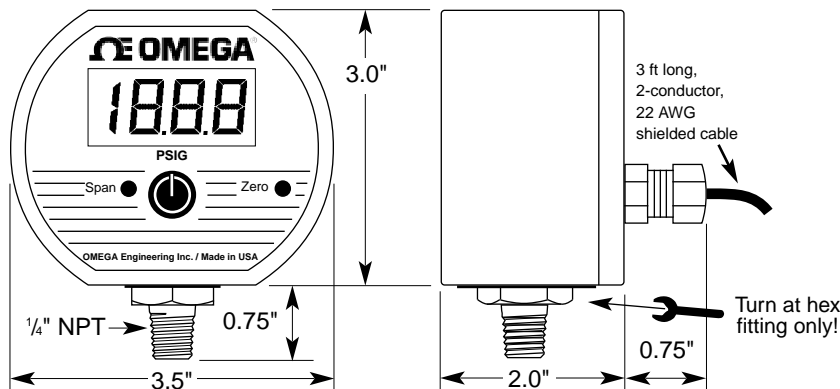
Remove the calibration potentiometer covers on the front of the unit to access the zero and span controls.

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.

Gauges may be returned to Omega Engineering for recalibration. N.I.S.T. traceability is available.



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)

3 1/2 digit LCD, 1/2" digit height
3 readings per second nominal display update
ADBL: Red LED display backlighting when gauge is on

Accuracy (linearity, hysteresis, repeatability)

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

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

$\pm 1\%$ FS for offset & span, 32 to 158°F (0 to 70°C) typical
 $\pm 2\%$ 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, $\pm 10\%$ 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

1/4" 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)



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The information contained in this document is believed to be correct but OMEGA Engineering, Inc. accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, patient connected applications.



WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA's Warranty adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. P.O. number to cover the COST of the repair,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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