CE

User's Guide

OMEGA®
An OMEGA Technologies Company

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DPG2000
PRESSURE GAUGES

M3365/0606

Where Do I Find Everything I Need for Process Measurement and Control? OMEGA...Of Course!

TEMPERATURE

- ✓ Thermocouple, RTD & Thermistor Probes, Connectors, Panels & Assemblies
- ✓ Wire: Thermocouple, RTD & Thermistor
- ✓ Calibrators & Ice Point References
- ✓ Recorders, Controllers & Process Monitors
- ✓ Infrared Pyrometers

PRESSURE, STRAIN AND FORCE

- ✓ Transducers & Strain Gages
- ✓ Load Cells & Pressure Gages
- ✓ Displacement Transducers
- ✓ Instrumentation & Accessories

FLOW/LEVEL

- ✓ Rotameters, Gas Mass Flowmeters & Flow Computers
- ✓ Air Velocity Indicators
- ✓ Turbine/Paddlewheel Systems
- ✓ Totalizers & Batch Controllers

pH/CONDUCTIVITY

- ✓ pH Electrodes, Testers & Accessories
- ✓ Benchtop/Laboratory Meters
- ✓ Controllers, Calibrators, Simulators & Pumps
- ✓ Industrial pH & Conductivity Equipment

DATA ACQUISITION

- ✓ Data Acquisition & Engineering Software
- ✓ Communications-Based Acquisition Systems
- ✓ Plug-in Cards for Apple, IBM & Compatibles
- ✓ Datalogging Systems
- ✓ Recorders, Printers & Plotters

HEATERS

- ✓ Heating Cable
- ✓ Cartridge & Strip Heaters
- ✓ Immersion & Band Heaters
- ✓ Flexible Heaters
- ✓ Laboratory Heaters

ENVIRONMENTAL MONITORING AND CONTROL

- ✓ Metering & Control Instrumentation
- ✓ Refractometers
- ✓ Pumps & Tubing
- ✓ Air, Soil & Water Monitors
- ✓ Industrial Water & Wastewater Treatment
- ✓ pH, Conductivity & Dissolved Oxygen Instruments

Table of Contents

• 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 malfunctions, 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 having been 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 contact points, fuses, and triacs.

OMEGA is please 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, EXPRESS 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 even 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.

Warranty Returns

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

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

Non-Warranty Repairs

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

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problem relative to the product.

• Instructions

All units are factory calibrated prior to shipment.

1. Zero Trimming

If it becomes necessary to re-adjust the "Zero" on the display, this can be accomplished by turning the trimpot marked "Z" just to the left of the On/Off push button. On the DPG2000 there is either a zero adjustment knob or a black nylon cover screw. If the gauge has a cover screw, it is necessary to remove the cover screw to access the zero adjustment pot. An ideal zero is indicated by a reading of 000 with an intermittently flashing "-" sign.

NOTE: A jewelers screwdriver or an eyeglass repair screwdriver (supplied) is a suitable instrument. Do not make changes to the Span adjustment (the "S" pot to the right of the push button) as part of the zero trimming. The Span should only be changed as part of the re-calibration of a gauge with a known pressure source.

2. Battery Replacement (9 Volt Type)

The battery can be replaced simply by removing the single screw at the top of the battery door. Remove the old battery, unplug the cable connector and replace with Eveready type 216 or equivalent. Replace the battery door and secure with the self-tapping screw (do not overtighten).

NOTE: For best accuracy, re-calibration (see section below) should be performed at the time batteries are replaced.

3. Re-Calibration

This procedure requires a known pressure source of at least ±0.1% accuracy in order to fully utilize the accuracy potential of the DPG2000. (If not available, gauge can be returned to OMEGA for re-calibration.)

Procedure:

A. Ensure the Gauge is at 0 psig (or vacuum if absolute), and adjust the zero as per instructions in #1.
B. Apply full scale pressure to the pressure port and adjust the span ("S") pot until the display reads the correct pressure.
C. Re-check the zero and re-adjust the zero ("Z") pot if required.
D. Repeat steps B and C, until no further adjustment is required.

4. Analog Output Option (0 To 2 VDC)

The 0–2 VDC analog output is accessed through a miniature “Phone Jack” (mate supplied) on the back of the unit. The “Tip” connection is “+ Output” and the center connection is “- Output”. DO NOT CONNECT TO THE CASE CONNECTION. This should only be used as a cable restraint. To minimize the effect on the battery life, the output should not be loaded with less than 100,000 ohms.

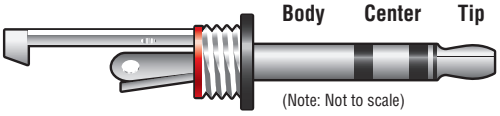
If you are having problems with the analog output to a high impedance device, the unit may require a load (5 K to 10 K ohm resister) applied to the output.

For 0 - 2 VDC output electrical specifications, refer to the data sheet.

0 to 2 VDC Table

	0-2 VDC Output
Tip	+ Output
Center	– Output
Body	No connection

External Power and Analog Output Plug



5. External Power

When equipped with this option, the gauge no longer operates from batteries, but instead is “externally” powered. The unit is powered via a miniature “Phone Jack” on the back of the unit. The “Tip” connection is the “+Power”, and the “Center” is connected to the “-Power”.

It is important that you never remove or insert the “Phone Jack” connector into the gauge with the power turned on. This can damage the gauge and cause it to fail. **Only turn the power on after the “Phone Jack” has been inserted into the external power connector.**

External Output Table

	External Power
Tip	+ Power
Center	– Power
Body	No connection

6. 4-20 mA Transmitter Option

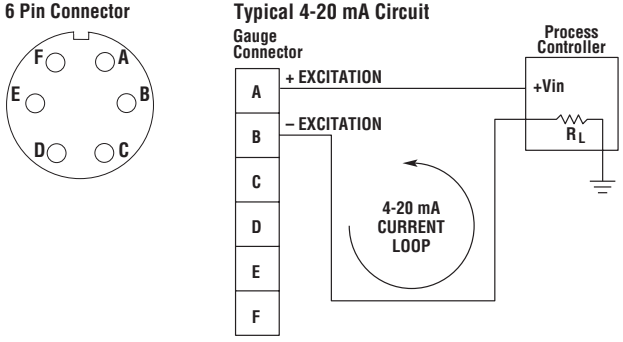
When equipped with this option the gauge no longer operates from batteries but instead is "Loop Powered". The loop connection is made to a 6 pin receptacle located at the rear of the unit (a mating plug is supplied). A voltage of between 9 and 32 VDC must be maintained at this connection (Pin A is "+" and Pin B is "-" see sketch) to insure proper operation. Completion of the earth or system ground (Pin F) is recommended for proper circuit protection.

Power supply voltage must be sufficient to maintain a minimum of 9 VDC at the gauge terminals after "dropping" voltage across RL at full scale current (20 mA). Example: If RL = 250 ohm then "drop" is 0.02 A X 250 ohm = 5 V. Therefore power supply minimum is 5 V + 9 V = 14 V.

RE-CALIBRATION: The procedure is the same as in step 3, except that there are two sets of zero and span adjustments. The front panel controls affect the display and the rear controls (remove "battery" door) affect the 4/20 mA signal.

If you are having problems with the analog output to a high impedance device, the unit may require a load (5 K to 10 K ohm resister) applied to the output.

For 4-20 mA output electrical specifications, refer to the data sheet.



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Thank You for Purchasing OMEGA Products

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.

It is the policy of OMEGA to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

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.

Again, thank you for your interest in OMEGA.
We welcome the opportunity to help you achieve your application goals.

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