

DIGITAL PRESSURE GAUGES BATTERY AND AC POWERED



DPG1000 Series **Three Power Options** **Battery Powered** **Loop Powered** **ac/dc Powered**

- ✓ **±0.25% Test Gauge Accuracy**
- ✓ **316 Stainless Steel Wetted Parts**
- ✓ **Loop Test Function**
- ✓ **Easy-to-Read 3½ Digit LCD Display**
- ✓ **Pressure or Vacuum Applications**
- ✓ **Rugged Aluminum or NEMA 4X Case**

The DPG1000 series is a versatile family of industrial pressure/vacuum gauges. All DPG1000 models feature a large (½"/13 mm H) digital display in a rugged, splashproof extruded aluminum case.

A ¼-18 NPT 316 stainless steel fitting is standard for the pressure connection. Media compatibility includes any liquids or gases compatible with 316 stainless steel.

The DPG1000B features a wide operating temperature range of -20 to 85°C (-4 to 185°F). Many different standard pressure/vacuum ranges (in a choice of engineering units) with both gauge and absolute references are available. The DPG1000 series also features ±0.25% accuracy, 2X overpressure and 4X burst specifications.

DPG1000AD **ac/dc Powered**

The DPG1000AD is powered by any ac source of 8 to 24 Vac 50/60 Hz, or any dc source of 9 to 32 Vdc. No recalibration is needed, and no jumpers have 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, the DPG1000AD can be used with inexpensive unregulated ac or dc power sources in applications requiring continuous pressure display.

DPG1000B **Battery Powered**

The DPG1000B is powered by replaceable batteries that can operate the gauge for approximately 2500 hours of use. All DPG1000B models include auto-shutoff circuitry standard to conserve battery life. A low-battery indication is also standard. An optional rubber boot **DPG1000-RB**, \$29 is also available.

Requiring no electrical connection, the DPG1000B is ideally suited to portable applications, or fixed applications.



Backlight Display Optional



DPG1000AD

\$259

DPG1000L **Loop Powered**

All operating power for the DPG1000L gauge is supplied by the 4-20 mA output loop. This "2-wire" connection allows the DPG1000L to be used as a digital indicating transmitter in any 4-20 mA current loop application. Individual, non-interactive controls are available for the display zero/span and the output loop 4/20 mA settings. Connection to the DPG1000L is made via a 2-conductor cable at the back of the gauge.

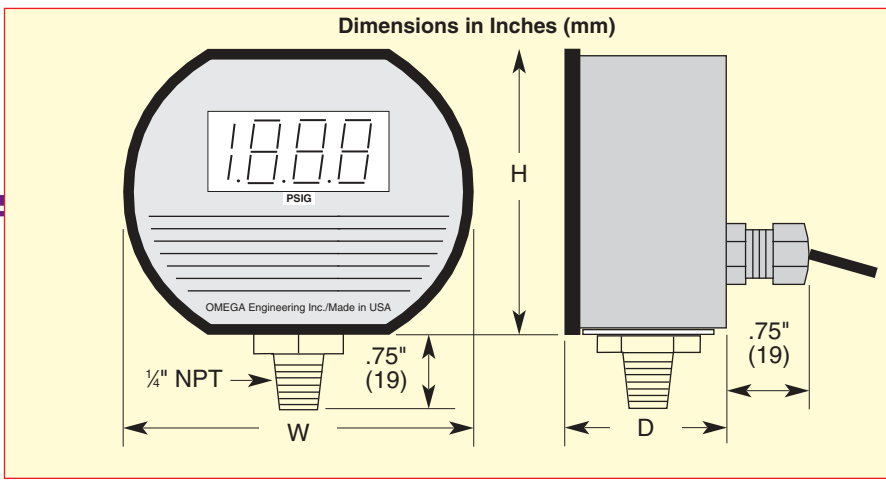
A front-accessible TEST pushbutton switches the display and output loop to a preset level determined by the setting of a "Test Calibration" potentiometer. This feature allows easy testing of the display and process loop by using a preset input signal in place of the actual input. The DPG1000L also includes "low loop" warning circuitry. This circuitry provides an indication on the display when the loop supply voltage falls below a level which may not be sufficient to drive a full 20 mA into the loop load resistance. These two proprietary features make the DPG1000L easier to set up and maintain.



All models shown smaller than actual size

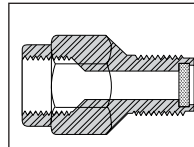


NEMA-4X Model DPG1100



Dimensions in Inches (mm)

	W	H	D
Std Case	3.38 (86)	2.88 (73)	1.65 (42)
Nema 4X	3.5 (89)	3.0 (76)	2.0 (51)



1/4 NPT Pressure Snubbers \$10
PS-4G = Gas
PS-4E = Lt Oil
PS-4D = Dense Lq

SPECIFICATIONS

Power:
 DPG1000B: (2) AA batteries included, provide up to 2500 hr life typical; Auto Shutoff: 5 minutes; LOBAT indication

DPG1000L: 8 to 32 Vdc at gauge; Reverse polarity protected
 DPG1000AD: 8 to 24 Vac 50/60 Hz or 9 to 32 Vdc; 5 mA maximum

Standard Ranges:
 0-19.99, 0-100.0, 0-199.9, 0-500, 0-1000 psi, -30 inHg vacuum to 100 psi compound (not available on DPG1000L)

Pressure/Vacuum Reference:
 Gauge (psig) or absolute (psia)

Optional Units: Gauge can be factory scaled to any engineering units such as psi, kPa, Bar, mBar, inHg, inH2O, mmHg, ftH2O, torr, kg/cm2, etc.

Display Type/Size: LCD, 1/2" (13 mm) digit height, 3 readings per second

Controls & Location:
 DPG1000B and DPG1000AD: Display zero/span, non-interactive, ±15% range; top-accessible, multiturn potentiometers
 DPG1000L: Display zero/span, non-interactive, ±15% range; Test calibration level, 0-100% range; top-accessible, multiturn potentiometers; Loop 4 mA and 20 mA internal potentiometers

Accuracy: ±0.25% FSO or better, ±1 least significant digit (includes linearity, hysteresis, repeatability)

Temperature Stability: ±0.003% of span per degree C (typical)
 ±0.01% of span per degree C (max)
 0 to 70°C (-18 to 158°F)

Storage Temperature: -55 to 95°C (-67 to 203°F)

Operating Temperature: -20 to 85°C -4 to 185°F

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

Weight: 9 oz (255 g) (approx.)

Standard Case: Extruded aluminum case, epoxy powder coated; polycarbonate cover, front and rear gaskets

Nema 4X Case: UV stabilized polycarbonate/ABS case, clear polycarbonate window, gasketed rear cover, captive SS screws.

Pressure/Vacuum Connection:
 316 stainless steel, 1/4-18 NPT male

Media Compatibility: 316 Wetted Parts compatible with most liquids and gases

Electrical Connection: 3 ft (0.9 m) 2-conductor 22 AWG cable (none required on DPG1000B)

Overpressure: 2x rated pressure min
Burst Pressure: 4x rated pressure min

MOST POPULAR MODELS HIGHLIGHTED

To Order (Specify Model Number)			
RANGE (psi)	MODEL NO.	PRICE	COMPATIBLE METERS
BATTERY POWERED - STANDARD CASE			
-30 inHg-100.0	DPG1000B-30V100G	\$279	N/A
0 to 5.00	DPG1000B-05G	259	N/A
0 to 15.00	DPG1000B-15G	259	N/A
0 to 30.0	DPG1000B-30G	259	N/A
0 to 100.0	DPG1000B-100G	259	N/A
0 to 300	DPG1000B-300G	259	N/A
0 to 500	DPG1000B-500G	259	N/A
0 to 1000	DPG1000B-1KG	259	N/A
LOOP POWERED - STANDARD CASE			
0 to 5.00	DPG1000L-05G	289	DP41-E, DP25-E, DP24-E
0 to 15.00	DPG1000L-15G	289	DP41-E, DP25-E, DP24-E
0 to 30.0	DPG1000L-30G	289	DP41-E, DP25-E, DP24-E
0 to 100.0	DPG1000L-100G	289	DP41-E, DP25-E, DP24-E
0 to 300	DPG1000L-300G	289	DP41-E, DP25-E, DP24-E
0 to 500	DPG1000L-500G	289	DP41-E, DP25-E, DP24-E
0 to 1000	DPG1000L-1KG	289	DP41-E, DP25-E, DP24-E
ac/dc POWERED - STANDARD CASE			
-30 inHg-100.0	DPG1000AD-30V100G	\$279	N/A
0 to 5.00	DPG1000AD-05G	259	N/A
0 to 15.00	DPG1000AD-15G	259	N/A
0 to 30.0	DPG1000AD-30G	259	N/A
0 to 100.0	DPG1000AD-100G	259	N/A
0 to 300	DPG1000AD-300G	259	N/A
0 to 500	DPG1000AD-500G	259	N/A
0 to 1000	DPG1000AD-1KG	259	N/A

Absolute pressure ranges available as "-015A", "-030A", or "-100A", add \$20 to price.
 To order **NEMA 4X** case, specify model number to **DPG1100...**, add \$40
 To order 10 or 30 minute auto shutoff, add suffix "**-F10**" (10 min) or "**-F30**" (30 min), no charge.
 To order no auto shutoff option, add suffix "**-NS**", no charge.
 To order backlit display on DPG1000B or DPG1100B, add suffix "**BL**", add \$30 to price.
 Backlit option "**BL**" not available on compound range "30V100G" units.
 To order wall mount 115 Vac power supply, specify **DPG1000-PS**, \$25.
Ordering Example: **DPG1100BBL-100G** is a NEMA-4X battery powered digital gauge with a range of 0 to 100.0 psig and backlit display, \$259 + 40 + 30 = **\$329**.



DIGITAL PRESSURE GAUGES WITH ALARMS AND ANALOG OUTPUT FUNCTIONS

DPG1000ADA ac/dc Powered with Dual Alarms

SPECIFICATIONS

Accuracy: $\pm 0.25\%$ FSO or better, ± 1 least significant digit includes linearity, hysteresis, repeatability

Controls & Location: Display zero/span, non-interactive, $\pm 15\%$ range; Setpoint 1 and Setpoint 2, 0-100% range; top-accessible, multiturn potentiometers

Alarm Deadbands (hysteresis): 1% of FSO, standard

Alarm Outputs: Dual form C (SPDT) relay contacts
Individual Setpoint 1 and Setpoint 2 settings via top-accessible multiturn potentiometers HI/LO alarm configuration standard, others available
Relay contacts rated 1 A/24 Vdc, 0.5 A/115 Vac, non-inductive

Alarm Indicators: Bicolor (red/green) LED's on front panel

Test Function: Front panel TEST button, when depressed, toggles both SP1 and SP2 alarm status, independent of pressure input to allow testing of system operation.

Alarm Response Time: 100 milliseconds typical

Power: Any ac source of 8 to 24 Vac 50/60Hz or any dc source of 9 to 32 Vdc, 1.0 watt maximum; optional wall mount power supply available to operate on 115 Vac (Model DPG1000-PS)

Electrical Connection: 3 foot long, 2-conductor 22 AWG cable for power; 3 foot long, 6-conductor 22 AWG cable for alarm contacts



DPG1000ADA
\$349

Models shown smaller than actual size see previous page for dimensions

DPG1000DAR dc Powered with Dual Alarms and 4 to 20 mA Output

Accuracy: $\pm 0.25\%$ FSO or better, ± 1 least significant digit includes linearity, hysteresis, repeatability

Controls & Location: Display zero/span, non-interactive, $\pm 15\%$ range; Setpoint 1 and Setpoint 2, 0-100% range; Test calibration level, 0-100% range; top-accessible, multiturn potentiometers
Analog output zero/span; internal potentiometers

Alarm Deadbands (hysteresis): 1% of FSO, standard

Alarm Outputs: Dual form C (SPDT) relay contacts
Individual Setpoint 1 and Setpoint 2 settings via top-accessible multiturn potentiometers
HI/LO alarm configuration standard; Relay contacts rated 1 A/24 Vdc, 0.5 A/115 Vac, non-inductive

Alarm Indicators: Bicolor (red/green) LED's on front panel

Alarm Response Time: 100 milliseconds typical

Analog Output: 4-20 mA dc. Output drive (compliance) determined by power source.

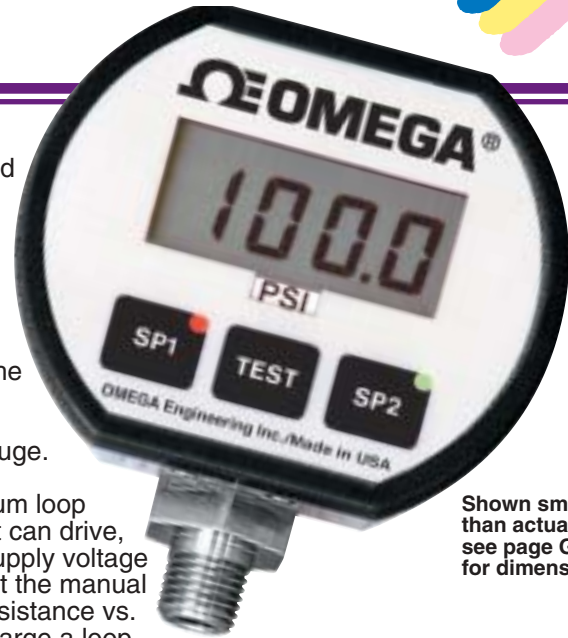
Analog Output Response Time: 50 msec, typical

Test Function: Front panel TEST button, when depressed, toggles both SP1 and SP2 alarm status and simultaneously sets display and analog output to "calibration" level, independent of pressure input to allow testing system operation.

Power: Any dc source of 9 to 32 Vdc, 1.0 watt maximum

Electrical Connection: 3 foot long, 4-conductor 22 AWG shielded cable for power and retransmitted output. 3 foot long, 6-conductor 22 AWG cable for alarm contacts





Shown smaller than actual size see page G-32 for dimensions

Using the DPG1000ADA and DPG1000DAR Alarm Outputs

Normal (Failsafe) vs. Reverse Action - The convention for alarm action is that with the Normal or Failsafe configuration, the alarm output relays will be CLOSED (relay energized) for a clear or non-alarm condition and OPEN (relay not energized) for an alarm condition. This is primarily for users who desire an alarm condition should the gauge lose power or suffer a catastrophic failure. In the wiring diagrams, the normally closed and normally open designations refer to standard relay terminology, *i.e.*, the relay contact status with the relay coil not energized.

Therefore, with the Normal (Failsafe) configuration, in a green or non-alarm condition, the relay will be energized so that continuity can be expected between the common and normally open leads. In a red or alarm condition, the relay will be open (not energized), so that continuity can be expected between the common and normally closed leads.

Contact Rating and Protection -

The contacts of the alarm relays are rated at 1 A/24 Vdc or 0.5 A/115 Vac. Switching loads greater than the rating, or switching large inductive loads, will shorten the useful life of the contacts. In low level switching or dry contacts, the user should consider whether external contact protection such as snubber networks or arc suppression networks are required to protect the contacts.

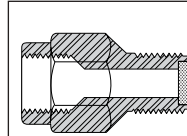
In addition, no internal fusing is included in the DPG1000 contact circuits. The circuit external to the gauge alarm outputs should be fused by the user in applications where good design practice dictates.

Using the DPG1000DAR Analog Output

The analog output is easy to use if a few system considerations are observed. The DPG1000DAR is dc powered, with the gauge power supply (-) tied to the 4 to 20 mA (-).

Therefore, the dc supply (-) lead should be considered common with regard to the analog output (-) or ground connection in the user's system.

Be sure to observe the output compliance (voltage drive) capabilities of the gauge. The compliance, and therefore the maximum loop resistance the output can drive, is a function of the supply voltage to the gauge. Consult the manual for maximum loop resistance vs. supply voltage. Too large a loop resistance will cause the gauge output to "limit" or saturate before reaching its full 20 mA output.



1/4 NPT Pressure Snubbers \$10
 PS-4G = Gas
 PS-4E = Lt Oil
 PS-4D = Dense Lq



MOST POPULAR MODELS HIGHLIGHTED

To Order (Specify Model Number)

RANGE (psi)	MODEL NO.	PRICE	COMPATIBLE METERS
ac/dc POWERED/DUAL ALARMS			
0 to 15.00	DPG1000ADA-15G-[*]	349	N/A
0 to 100.0	DPG1000ADA-100G-[*]	349	N/A
0 to 300	DPG1000ADA-300G-[*]	349	N/A
0 to 500	DPG1000ADA-500G-[*]	349	N/A
0 to 1000	DPG1000ADA-1KG-[*]	349	N/A
dc POWERED/DUAL ALARMS/ANALOG OUTPUT			
0 to 15.00	DPG1000DAR-15G-[*]	375	DP41-E, DP25-E, DP24-E
0 to 100.0	DPG1000DAR-100G-[*]	375	DP41-E, DP25-E, DP24-E
0 to 300	DPG1000DAR-300G-[*]	375	DP41-E, DP25-E, DP24-E
0 to 500	DPG1000DAR-500G-[*]	375	DP41-E, DP25-E, DP24-E
0 to 1000	DPG1000DAR-1KG-[*]	375	DP41-E, DP25-E, DP24-E

ALARM CONFIGURATIONS		
1		HI/LO (standard)
2		HI/HI
3		LO/LO
	N	Normal acting (standard)
	R	Reverse acting

[*] Insert alarm configuration from table at left

Ordering Examples:
 DPG1000ADA-100G-1N is an ac/dc powered unit with a range of 0 to 100.0 psig and standard acting dual alarms in the HI/LO configuration, \$349

DPG1000DAR-100G-1N is a dc powered unit with a range of 0 to 100.0 psig, analog output and standard acting dual alarms in the HI/LO configuration, \$375

To order wall mount 115 Vac power supply, specify DPG1000-PS, \$25

To order Absolute Pressure (psia), replace the "G" in the range number with an "A" and add \$20 to price.



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• Flow and Level

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• Data Acquisition

Auto-Dialers and Alarm Monitoring Systems, Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485 and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

• Pressure, Strain and Force

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• Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters