# DPG509

## Advanced Digital Pressure Gauge

**ΩΞ OMEGA™**

- **Configurable - 40,000+ Possibilities**
- **Large 1" digits for high visibility**
- **User friendly, 4-button interface**
- **Differential pressure available**
- **High accuracy (0.08%) options**
- **Data logging with SD card optional**



## Overview

We've created a new, user-friendly interface with four clearly labeled buttons and a large 4-digit, backlit display. Full-scale accuracy as high as 0.08% is perfect for applications where accuracy is critical, and 0.25% accuracy is also available for those times when a reliable, easy-to-use gauge is most important. Configure a basic gauge with long-lasting battery power or choose an externally powered option to support a robust unit with voltage and/or current outputs.

Another powerful feature is the data logging option. Log your important data as fast as four readings per second so that you don't miss a thing. Data analysis is straightforward with an included SD card that is easily accessible for data retrieval.

All options are built with an engineered thermoplastic housing with an IP65 rating for durability in harsh environments. A protective rubber boot is also an option for additional protection.

## Configurable Menu Features

Users have four different operation modes to select from. Normal mode displays the last pressure reading. Tare mode zeros the unit at an applied pressure. Minimum and maximum modes display the lowest and highest recorded pressure readings respectively. There are also additional settings that can be adjusted to best suit your process including the shut-off timer, sampling rate, range plotting, pressure units, and zero-point adjustment.

With the advanced menu, additional features include custom units, dampening mode, password protection, and backlight adjustment. If the 15 engineering unit options don't cover what you need, up to five custom pressure units can be programmed. Dampening mode filters the raw data into a smoother output.

Password protection allows only authorized users to change DPG settings to help avoid accidental button presses and setting changes. Backlight adjustment provides five options to adjust how long the backlight remains on, from 10 seconds to always on to balance both visibility and battery life.

## Advanced Digital Pressure Gauge

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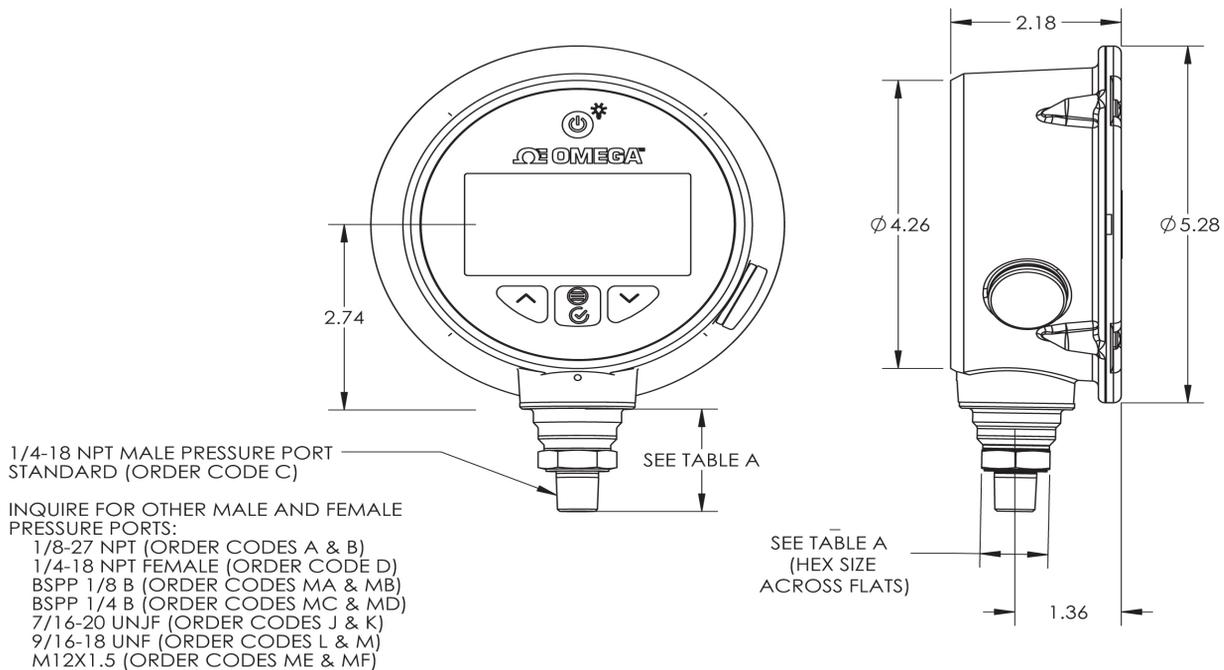
### Specifications

| | Configuration Option | |
|---|---|---|
| Accuracy (Combined Linearity, Hysteresis and Repeatability) | 25 | ±0.25% Full Scale Span |
| | 08 | ±0.08% Full Scale Span |
| Power Supply | B | 4 Alkaline AA Batteries are included with all configurations |
| | D | DC Power through M12 connection and 4 Alkaline AA Batteries<br>6' M12 connector cable included with all configurations that have DC power option |
| Output | N | None |
| | I | 4 to 20 mA |
| | V | 0 to 5 Vdc and 0 to 10 Vdc |
| | IV | 4 to 20 mA, 0 to 5 Vdc, and 0 to 10 Vdc |
| Pressure Type | A | Absolute |
| | D | Differential |
| | G | Gauge |
| Engineering Units | B | psi, bar, mbar, inH2O, ftH2O, mmH2O, inHG, mmHG, cmHG, Pa, hPa, kPa, MPa, ATM, TORR |
| | A | Includes units listed above and programmable custom units |
| Protective Rubber Boot | B | Adds another layer of durability to the pressure gauge |
| Calibration | C | 5-point NIST traceable calibration is a configurable option (it does not come standard) |
| Data Logging | D | 8 Gb Micro SD card<br>micro SD is included with configurations that have data logging option<br>Can accept up to 32 Gb Micro SD |
| Pressure Connection Options | 14 options available in configurator | 1/4-18 NPT, 1/8-27 NPT, BSPP 1/8 B, BSPP 1/4 B, 7/16-20 UNF (MS33656-04), 9/16-18 UNF, M12x1.5<br>All connections available as male or female types. |
| Long Term Stability | Standard for all units | ±0.3% Span/Year |
| Battery Life (Typical) | | 1,000 hours (no backlight usage) |
| Display | | 4-digit LCD with backlight and 25 mm (1") character height |
| User Interface | | 4 membrane key switches |
| Minimum Resistance Between Transducer Body and any Wire | | 100 MOhms @100 VDC |
| Operating Temperature | | -17°C to 54°C (0°F to 130°F) |
| Storage Temperature (without batteries) | | -40°C to 82°C (-40°F to 180°F) |
| Pressure Cycles | | 1 million |
| Over Pressure | | 1.5 x rated pressure |
| Materials | | Enclosure: Engineered Thermoplastic<br>Sensor Wetted Parts: 316L Stainless Steel, Viton Seal |
| Enclosure rotation after securing fluid connection | | ±150° |
| Weight | | 1.25 lbs |
| Environmental Rating | | IP65 |
| CE | | EN61326-1: 2012 |
| RoHS | | 2015/863 |
| Vibration | | ASME B40.7 |

# DPG509

## Advanced Digital Pressure Gauge

**OMEGA™**

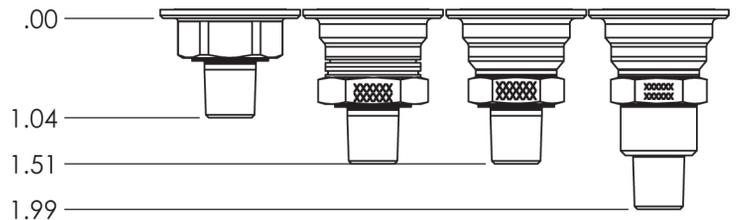### Keypad Table

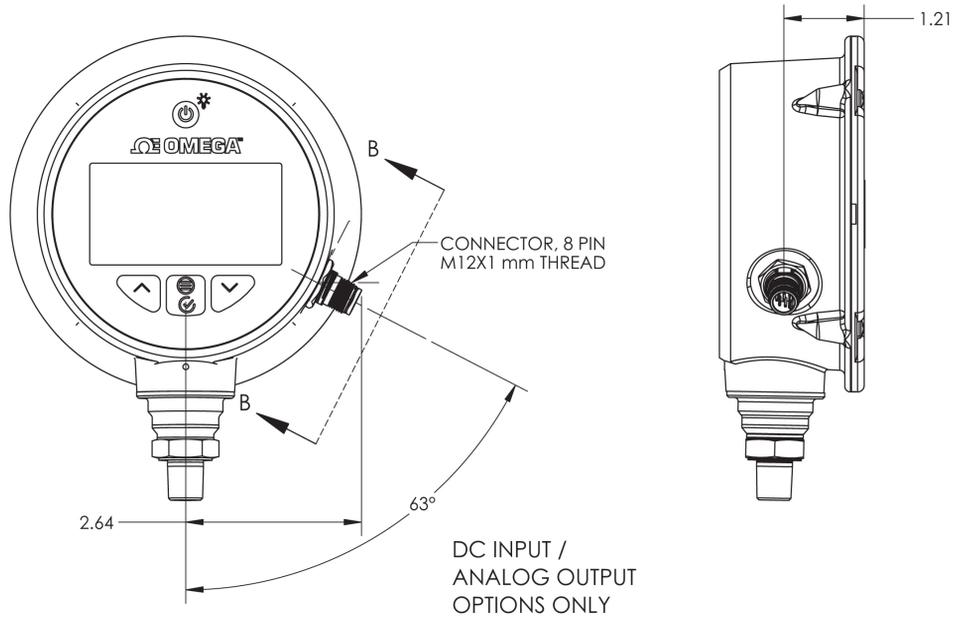| | | |
|---|---|---|
| ⏻※ | Power / Backlight | Turns the unit on and off / Turn backlight on |
| ⌃ | Max / Scroll Up | Displays the maximum reading / Scroll up in menu navigation |
| ☰ | Menu / Enter | Enter / Access the menu / Exit the menu |
| ⌄ | Min / Scroll Down | Displays the minimum reading / Scroll down in menu navigation |

## DPG509 Dimensions & Pressure Ports



2.18

⌀4.26

⌀5.28

2.74

1/4-18 NPT MALE PRESSURE PORT
STANDARD (ORDER CODE C)

INQUIRE FOR OTHER MALE AND FEMALE
PRESSURE PORTS:
  1/8-27 NPT (ORDER CODES A & B)
  1/4-18 NPT FEMALE (ORDER CODE D)
  BSPP 1/8 B (ORDER CODES MA & MB)
  BSPP 1/4 B (ORDER CODES MC & MD)
  7/16-20 UNJF (ORDER CODES J & K)
  9/16-18 UNF (ORDER CODES L & M)
  M12X1.5 (ORDER CODES ME & MF)

SEE TABLE A

SEE TABLE A
(HEX SIZE
ACROSS FLATS)

1.36

STANDARD (SINGLE-POINT) PRESSURE
0.3 TO 1000 PSI (LOW AND MID RANGE)
0.08% ACCURACY

.00

1.04

1.51

1.99

| | TABLE A | | | |
|---|---|---|---|---|
| PRESSURE RANGES (PSI) | 0 TO 500 | 0 TO 15 | 30 TO 1000 | 1500 TO 5000 |
| ACCURACY | ±.25 % | ±.08 % | | |
| HEX SIZE ACROSS FLATS | 1.0 | | .87 | |

## DPG509 Dimensions for Units with DC Power



CONNECTOR, 8 PIN
M12X1 mm THREAD

DC INPUT /
ANALOG OUTPUT
OPTIONS ONLY

2.64

63°

1.21

## M12 Pin-Out for DC Power and Analog Output



PIN 5
SUPPLY (-)

PIN 6
OUTPUT (-)

PIN 4
DNC

PIN 7
DNC

PIN 3
DNC

PIN 8
SHIELD

PIN 2
SUPPLY (+)

PIN 1
OUTPUT (+)

VIEW B-B

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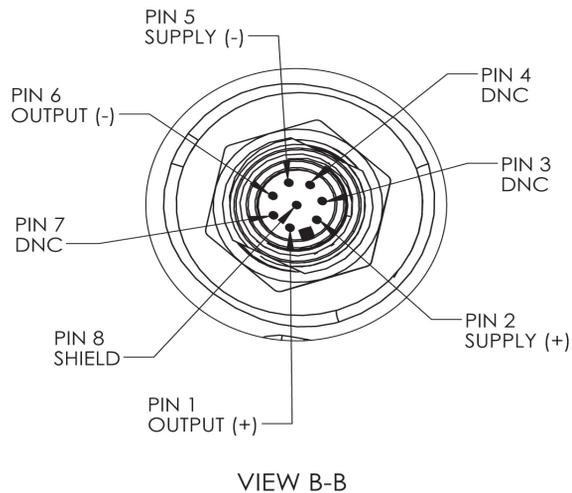
## DPG509 Differential Unit Dimensions



2.18

Ø 4.26

Ø 5.28

2.74

1.47

1.87

3.05

1.36

LOW PRESS
PORT MARK
BOTH SIDES

HIGH PRESS
PORT MARK
BOTH SIDES

HEX 1.00
SHOWN
0.3 TO 15 PSID

HEX .87
30 TO 1000 PSID

1/4-18 NPT MALE PRESSURE PORT
STANDARD (ORDER CODE C)
BOTH ENDS
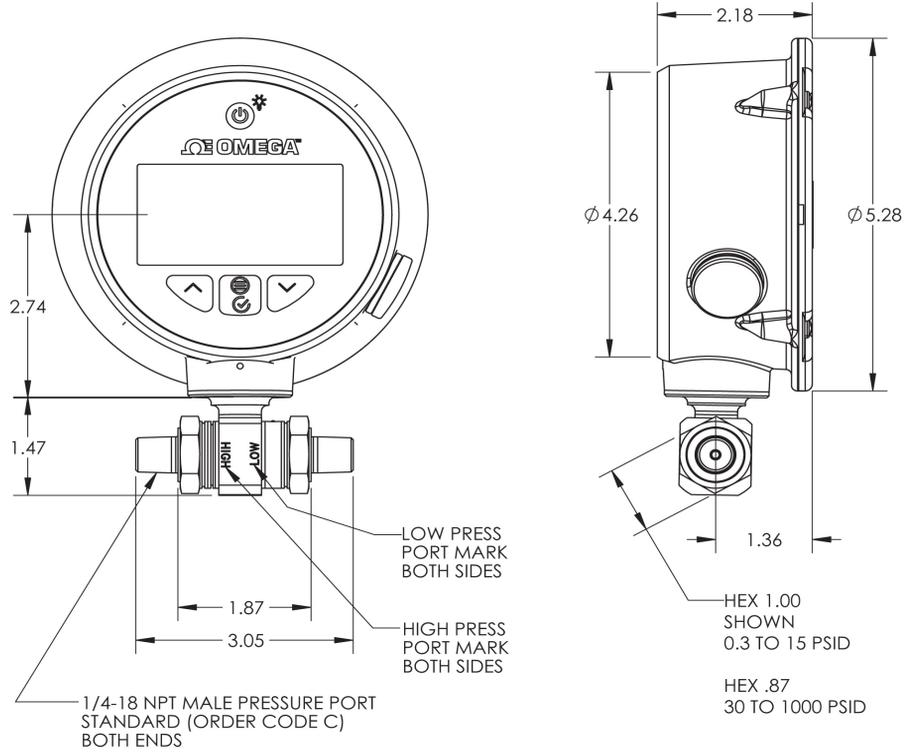
## DPG509 Protective Boot Dimensions



2.32

2.74

4.36

5.44
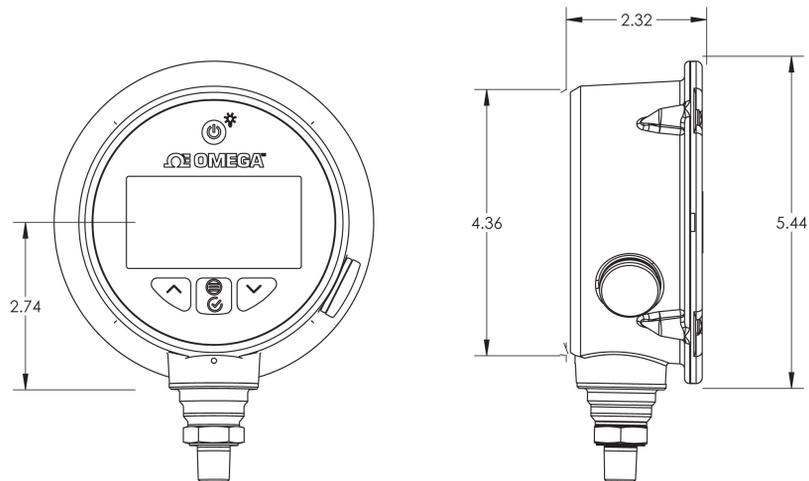
PROTECTIVE BOOT OPTION -
ENCLOSURE DIMENSIONS

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| Part number value | Description | Example: DPG509 - P 100 G 25 V B C B - B |
|---|---|---|
| **Pressure Unit** | | |
| P | PSI | |
| **Pressure Range** | | |
| 10IW | 10 Inches of Water | |
| 001 | 1 PSI | |
| 2.5 | 2.5 PSI | |
| 005 | 5 PSI | |
| 015 | 15 PSI | |
| 030 | 30 PSI | |
| 050 | 50 PSI | |
| 100 | 100 PSI | 100 |
| 150 | 150 PSI | |
| 200 | 200 PSI | |
| 250 | 250 PSI | |
| 300 | 300 PSI | |
| 500 | 500 PSI | |
| 750 | 750 PSI | |
| 1K | 1000 PSI | |
| 1.5K | 1500 PSI | |
| 2.5K | 2500 PSI | |
| 3.5K | 3500 PSI | |
| 5K | 5000 PSI | |
| **Pressure Type** | | |
| A | Absolute *(unavailable in 10IW, 001, 2.5, 005, and 015 pressure ranges) | |
| G | Gauge | G |
| D | Differential *(unavailable in ± 0.25% B.S.L. accuracy and pressure ranges greater than 1K psi) | |
| **Accuracy** | | |
| 25 | ± 0.25% B.S.L. | 25 |
| 08 | ± 0.08% B.S.L. | |
| **Electrical Output** | | |
| N | None | |
| I | 4 to 20 mA *(requires DC power source) | |
| V | 0 to 5 Vdc, and 0 to 10 Vdc *(requires DC power source) | V |
| IV | 0 to 5 Vdc, 0 to 10 Vdc, and 4 to 20 mA *(requires DC power source) | |
| **Power Source** | | |
| B | Battery | B |
| D | Battery and DC Power through M12 | |
| **Process Fitting** | | |
| A | 1/8-27 NPT Male | |
| B | 1/8-27 NPT Female | |
| C | 1/4-18 NPT Male | C |
| D | 1/4-18 NPT Female | |
| J | 7/16-20 UNF Male | |
| K | 7/16-20 UNF Female | |
| L | 9/16-18 UNF Male | |
| M | 9/16-18 UNF Female | |
| MA | G 1/8 Male | |
| MB | G 1/8 Female | |
| MC | G 1/4 Male | |
| MD | G 1/4 Female | |
| ME | M12 X 1.5 Male | |
| MF | M12 X 1.5 Female | |
| **Menu Complexity** | | |
| B | Basic Menu Options Only | B |
| A | Advanced + Basic Menu Options | |
| **Additional Options**\*\* | | |
| B | Protective Rubber Boot | B |
| D | Data Logging | |
| C | Calibration Service | |

** Multiple options can be selected and added to end to part number in alphabetical order (i.e. "-BD" to include both boot and data logging)

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