

# DIGITAL PRESSURE GAUGE FOR SANITARY/CLEAN-IN-PLACE APPLICATIONS HIGH 0.08% ACCURACY



**Gauge, Absolute, Sealed Gauge  
Compound Gauge, Vacuum and  
Barometric Models  
0-25 mb to 0-41 bar**

## DPGM409S Metric Sanitary Series



- ✓ Easy to Read 25 mm (1") Backlit LCD Display
- ✓ High 0.08% Accuracy Typical
- ✓ Hi and Lo Alarms Standard
- ✓ MIN/MAX/AVG Reading
- ✓ User Selectable Analog Output 0 to 5 Vdc, 0 to 10 Vdc or 4 to 20 mA
- ✓ Data Logging and Charting Software Included
- ✓ Wireless Transmitter Option Sends Reading to Remote Location
- ✓ Tested to Industrial CE Standards
- ✓ Battery Powered with Long Battery Life
- ✓ 5-Point NIST Traceable Calibration Certificate

Omega's DPGM409S Sanitary/CIP digital pressure gauges with metric ranges incorporates a rugged 316 SS enclosure designed for washdown and marine applications with a precision 0.08% accuracy pressure transducer with 316L SS wetted parts and body. The result is an extremely durable digital pressure gauge designed to survive harsh industrial environments. The large 25 mm (1") display is easy to read at a distance up to 11 m (36'). Models are available in gauge, sealed gauge, compound gauge, absolute, vacuum and barometric pressure ranges. Standard features include a highly stable silicon sensor, selectable MIN/MAX and AVG readings, Hi and LO alarms and an externally powered user selectable analog output.



DPGM409S15-17.5BG  
shown smaller than  
actual size.

An optional wireless transmitter feature with software allows the signal to be transmitted to a remote location such as a PC for charting and data logging. Power is from an internal long life battery (included) or an externally supplied dc voltage source. Each unit is supplied with configuration software that allows the user connect to a pc via a standard USB connection (cable included) and select a variety of user configurable features including update rate, dampening, units, backlight and auto off. The analog output can also be independently scaled from the display.

**Note:** Because of transmission frequency regulations, wireless models may only be used in the US, Canada and Europe.

**For calibration and to setup your DPG409 device please go to**

**<ftp://ftp.omega.com/public/DASGroup/products/dpg409/>**

The DPG configuration wizard provides a convenient USB interface with your device. Please refer to the manual for details on setting up your device.

## SPECIFICATIONS

### RoHS Compliant

**CE Compliant:** Meets industrial emissions and immunity standard IEC61326 for industrial locations

**Accuracy:**  $\pm 0.08\%$  Best Straight Line Typ. (Linearity, Hysteresis and Repeatability combined)

**Calibration:** 5-Pt NIST traceable calibration with zero and span values, calibrated in horizontal direction (compound gauge models calibrated in positive direction only). calibrated in horizontal direction

**Zero Balance:**  $\pm 0.5\%$  FS typical  $\pm 1\%$  maximum (for ranges  $\leq 170$  mb  $\pm 1\%$  Typical  $\pm 2\%$  maximum)

**Span Setting:**  $\pm 0.5\%$  FS typical  $\pm 1\%$  maximum (for ranges  $\leq 170$  mb  $\pm 1\%$  Typical  $\pm 2\%$  maximum)

**Storage/Operating Temperature Range:**  $-15$  to  $115^{\circ}\text{C}$  ( $-5$  to  $240^{\circ}\text{F}$ )

### Compensated Temperature Range:

**Ranges  $\leq 350$  mb:**  $4.4$  to  $60^{\circ}\text{C}$  ( $40$  to  $140^{\circ}\text{F}$ )

**Ranges  $> 350$  mb:**  $-4$  to  $85^{\circ}\text{C}$  ( $25$  to  $150^{\circ}\text{F}$ )

### Zero and Span shift over

#### Compensated Range:

**Ranges  $\leq 170$  mb: Zero:** 1.00%

**Span:** 0.70%

**Range = 350 mb: Zero:** 0.80%

**Span:** 0.50%

**Ranges  $> 350$  mb: Zero:** 0.50%

**Span:** 0.50%

**550 & 880HB Barometric Range:**

**Zero:** 0.90% **Span:** 0.50%

### Minimum Isolation Between Case and Output Terminations:

100M  $\Omega$  @ 50 Vdc

**Analog Output:** User selectable 0 to 5 Vdc, 0 to 10 Vdc of 4 to 20 mA (external 24 Vdc power supply required for all analog output types)

**Note:** Compound gage ranges have a unidirectional analog output equal to their full span; i.e.  $-1$  to  $+1$  bar =  $0$  to  $10$  Vdc.

Set Jumper to Select Current or Voltage: Software selection of 0 to 5 Vdc, 0 to 10 Vdc, or 4 to 20 mA

**Analog Output Cable:** 2.7 m (8.9') with ferrite core included

**Analog Output Accuracy:** 0.08% typical (0.15% max in RF field @ 10V/m)

**Pressure Cycles:** 250,000, minimum

**Long Term Stability (1-Year):**  $\pm 0.1\%$  FS Typical

**Fill Fluid:** NEOBEE M5 Food Grade

**Approved to 3A Sanitary Specification 74-05**

### Environmental Protection:

NEMA 4X (IP65) depending upon electrical termination

**Pressure Rating:** 1½" and 2" Tri-Grip™ fitting (compatible the Tri-Clamp®): 40 bar using suitable clamp

**Over Pressure:** 4 x rated pressure to maximum rated flange pressure

**Secondary Containment:** 6 x rated pressure to a maximum of 138 bar (not in clamp)

**Display:** 4-digit LCD with user selectable backlighting, (9999 count) 25 mm (1") character height

**Computer Interface:** UBS connection for set-up, cable included

**Sample/Display Range:** User selectable from 0.35 to 30 seconds (preset to 1/second)

**Power:** One 3.6V lithium 8.4 Ah capacity (C cell) Included (two included with wireless option) (replacement battery model no. BATT-C-3.6V)

**Battery Life (Typical):** Up to 4-years

**Enclosure Material:** 316 stainless Steel and ABS center gasket

**Enclosure Finish:** Electropolished

**Enclosure Environmental Rating:** Weatherproof, NEMA 4X (IP65)

**Connection Location:** Lower (head rotates to position display)

### Front Panel Functions

**Backlight:** Manually turns backlight on/off

**Min/Max:** Recalls min/max values

**Zero/Clear:** Zeros display or clears min/max

### Software Settings (via USB)

**Update Rate:** 4 options; 10, 5, 2, 1 times per second

**Units:** psi, inHg, inH<sub>2</sub>O, bar, mbar

**Lock:** Allows the lock-out of front panel functions

**Alarms:** User selectable High and Low alarm limits (open collector)

**Backlight:** On/Off, 10 sec, 30 sec, 1 min, 5 min

**Wireless Transmitter (Optional):** channel number, Transmission rate, alarms, sensor offset, chart recording, data logging

**Calibrate:** Zero and Span

**Overrange Indication:** " \_ \_ \_ \_ "

### Wireless Option Specifications

**Transmit Sample Rate:** User programmable from 1 sample/2 minute to 1 sample/2 seconds

**Radio Frequency (RF) Transceiver Carrier:** ISM 2.4 GHz

**RF Output:** 10 dBm (10 mW)

### Range of RF Link:

**Outdoors (Line of Sight):**

Up to 120 m (400')

**Indoors/Urban:** Up to 40 m (130')

**Included Software:** Requires Windows® 7 (32 bit); XP, Vista

**Data Transmission to Host:** Pressure reading, ambient temperature reading, RF transmit strength and battery level

### Dimensions:

**Display:** 115 D x 89 W x 74 mm H (4.5 x 3.5 x 2.9")

**Sensor:** 72 to 89 mm L (2.8 to 3.5") below display

**Weight:** 900 g (2 lb) typical depending upon configuration



DPGM409S15-17.5BG,  
shown smaller than actual size.



To Order		
RANGE METRIC	PSI APPROXIMATE	MODEL NO.
<b>GAUGE</b>		
0 to 25 mbar	0 to 10 inH <sub>2</sub> O	DPGM409S[*]-025HG
0 to 70 mbar	0 to 1	DPGM409S[*]-070HG
0 to 170 mbar	0 to 2.5	DPGM409S[*]-170HG
0 to 350 mbar	0 to 5	DPGM409S[*]-350HG
0 to 1	0 to 15	DPGM409S[*]-001BG
0 to 2	0 to 30	DPGM409S[*]-002BG
0 to 3.5	0 to 50	DPGM409S[*]-3.5BG
0 to 7	0 to 100	DPGM409S[*]-007BG
0 to 10	0 to 150	DPGM409S[*]-010BG
0 to 17.5	0 to 250	DPGM409S[*]-017BG
0 to 35	0 to 500	DPGM409S[*]-035BG
0 to 40	0 to 600	DPGM409S[*]-040BG
<b>ABSOLUTE</b>		
0 to 350 mbar	0 to 5	DPGM409S[*]-350HA
0 to 1	0 to 15	DPGM409S[*]-001BA
0 to 2	0 to 30	DPGM409S[*]-002BA
0 to 3.5	0 to 50	DPGM409S[*]-3.5BA
0 to 7	0 to 100	DPGM409S[*]-007BA
0 to 10	0 to 150	DPGM409S[*]-010BA
0 to 17.5	0 to 250	DPGM409S[*]-017BA
0 to 35	0 to 500	DPGM409S[*]-035BA
0 to 40	0 to 600	DPGM409S[*]-040BA
<b>VACUUM (NEGATIVE GAUGE)</b>		
0 to -25 mbar	0 to -10 inH <sub>2</sub> O	DPGM409S[*]-025HV
0 to -70 mbar	0 to -1	DPGM409S[*]-070HV
0 to -170 mbar	0 to -2.5	DPGM409S[*]-170HV
0 to -350 mbar	0 to -5	DPGM409S[*]-350HV
0 to -1 bar	0 to -15	DPGM409S[*]-001BV
<b>COMPOUND GAUGE</b>		
± 25 mbar	± 10 inH <sub>2</sub> O	DPGM409S[*]-025HCG
± 70 mbar	± 1	DPGM409S[*]-070HCG
± 170 mbar	± 2.5	DPGM409S[*]-170HCG
± 350 mbar	± 5	DPGM409S[*]-350HCG
± 1 bar	± 15	DPGM409S[*]-001BCG
<b>BAROMETRIC</b>		
0 to 1100 hPa	0 to 32.00 inHg	DPGM409S[*]-1100HB
550 to 1100 hPa	16 to 32.00 inHg	DPGM409S[*]-550HB
880 to 1100 hPa	26 to 32.00 inHg	DPGM409S[*]-880HB

[\*] Insert "15" for 1.5" Tri-Grip™ or "20" for 2" Tri-Grip™ Sanitary Fitting, no extra charge.

WIRELESS RECEIVERS (FOR WIRELESS OPTION "-W")	
MODEL NO.	DESCRIPTION
UWTC-REC1	48-channel wireless receiver, USB powered
UWTC-REC2-(**)	48-channel wireless receiver with analog output
UWTC-REC2-D-(**)	48-channel wireless receiver with analog output and display

Comes complete with operator's manual, set-up and configuration software, magnetic stylus, USB cable, 2.7 m (9') analog output cable with ferrite core, one 3.6V lithium C cell battery (two with wireless option) and 5-pt NIST traceable calibration. Wireless option also includes charting and databasing software.

[\*\*] Specify analog output signal: "V1" for 0 to 5 Vdc; "V2" for 0 to 10 Vdc; "TC" for Type K thermocouple, or "MA" for 4 to 20 mA, no extra charge. For wireless option add "-W" suffix for additional cost (includes data logging and graphing software).

**Ordering Examples:** DPGM409S15-007BG, digital pressure gauge with 1.5" sanitary fitting, 7 bar gauge range.

DPG409S20-070HCG, digital pressure gauge with 2" sanitary fitting, ± 70 mb compound gauge range.

DPG409S15-001BV-W, digital pressure gauge with wireless transmitter option, 1.5" sanitary fitting, 0 to -1 bar vacuum range.