

### Agency Approval

Factory Mutual Approved Intrinsically Safe for Hazardous Locations USA & Canada

Class I, Division 1, Groups A, B, C, D

T3C Ta = -40 to 82°C; T4 Ta = -40 to 66°C,

CL I Zone 0 AEx/Ex ia IIC T3 Ta = -40 to 82°C; T4 Ta = -40 to 66°C

### Ranges and Resolution

See table below. Engineering units are factory set

Consult factory for special engineering units.

Resolution is fixed and limited to available display digits

Ranges listed as 20, 200, or 2000 display 19.99, 199.9, or 1999.

See DPG2000B series with D4 option for compound ranges and ranges with increased resolution.

### Accuracy

Includes linearity, hysteresis, repeatability

±0.25% of full scale ±1 least significant digit

HA option: ±0.1% of full scale ±1 least significant digit.

See range table below for availability

### Display

3 readings per second nominal display update rate

3.5 digit (1999) LCD, 0.5" H digits

BL models: Red LED display backlight

### Batteries

Two 1.5 V AAA (Panasonic LR03) alkaline cells

B: Approx. 1000 hours

BL: Approx. 150 to 1000 hours depending on backlight usage

Low battery symbol on display

### Auto Shutoff

Factory set

5, 10, or 30 minutes

### Controls

Front button turns gauge on and starts auto shutoff timer

BL models: Front button turns gauge on and starts auto shutoff timer. Hold front button to operate backlight.

### Calibration

Non-interactive zero and span pots, ±10% of range

Top-mounted potentiometers covered with reusable label.

### Weight

9 ounces (approx.)

Shipping wt. 1 pound (approx.)

### Housing Materials and Circuit Board Protection

Epoxy powder coated aluminum case, rear cover, and bezel. Front and rear rubber gaskets, polycarbonate label.

Includes stainless steel stiffener plate to reinforce sensor area.

Conformal coating on circuit boards for moisture resistance.

### Connection and Sensor Material

1/4" NPT male fitting

Sensor and all wetted parts are 316L stainless steel

### Overpressure, Burst, Vacuum Service

3000 psig range: 5000 psig overpressure

5000 psig range: 7500 psig overpressure

All others: 2 X pressure range overpressure

Burst pressure: 4 X sensor pressure rating, or 10,000 psi, whichever is less

Vacuum service: 15 psig, ±15 psig, 100 psig, 200 psig,

15 psia, 30 psia, 100 psia

### Temperature Ranges

Compensated: 32 to 158°F (0 to 70°C)

Storage: -40 to 203°F (-40 to 95°C)

Operating: -40 to 180°F (-40 to 82°C)

● ±0.25% Test Gauge Accuracy

● 316 L Stainless Steel Sensor

● All Metal Housing



[Quick Link  
cecomp.com/is](http://cecomp.com/is)

Ranges and Resolution		‡ -HA option not available									
PSI	Res	inHg	Res	Torr	Res	bar	Res	MPa	Res		
3PSIG‡	.01	6INHGG‡	.01	760TORRA‡	1	1BARA‡	.001	1.4MPAG	.001		
5PSIG	.01	10INHGG	.01	760TORRVAC‡	1	1BARVAC‡	.001	-0.1V1.4MPAG‡	.001		
15PSIA‡	.01	30INHGA‡	.1	1600TORRA‡	1	±1BARG‡	.001	2MPAG	.001		
15PSIVAC‡	.01	30INHGVAC‡	.1	mmHg	Res	1BARG	.001	3.5MPAG‡	.01		
±15PSIG‡	.1	±30INHGG‡	.1	150MMHGG‡	.1	2BARA‡	.001	7MPAG	.01		
15PSIG	.01	30INHGG‡	.1	260MMHGG‡	1	2BARG	.001	14MPAG	.01		
30PSIA‡	.1	60INHGA‡	.1	760MMHGA‡	1	4BARG	.01	20MPAG	.01		
30PSIG‡	.1	60INHGG	.1	760MMHGVAC‡	1	7BARA‡	.01	35MPAG‡	.1		
60PSIG	.1	120INHGG	.1	±760MMHGG‡	1	7BARG	.01	g/cm <sup>2</sup>	Res		
100PSIA‡	.1	200INHGA‡	.1	760MMHGG	1	-1V7BARG‡	.01	200GCMG‡	.1		
-15V100PSIG‡	.1	-30V200INHGG‡	.1	1600MMHGA‡	1	14BARG	.01	350GCMG‡	1		
100PSIG	.1	200INHGG	.1	1600MMHGG	1	-1V14BARG‡	.01	1000GCMG‡	1		
-15V200PSIG‡	.1	-30V400INHGG‡	1	mbar	Res	20BARG	.01	1000GCMVAC‡	1		
200PSIG	.1	400INHGG	1	200MBARG‡	.1	35BARG‡	.1	±1000GCMG‡	1		
300PSIG‡	1	600INHGG	1	350MBARG‡	1	70BARG	.1	1000GCMG	1		
500PSIG	1	1000INHGG	1	1000MBARA‡	1	140BARG	.1	2000GCMG‡	1		
1000PSIG	1	2000INHGG	1	1000MBARVAC‡	1	200BARG	.1	2000GCMG	1		
2000PSIG	1	±1000MMHGG‡	Res	±1000MBARG‡	1	350BARG‡	1				
inH <sub>2</sub> O	Res	50ZING‡	.1	1000MBARG	1	kg/cm <sup>2</sup>	Res	atm	Res		
85INH20G‡	.1	80ZING	.1	2000MBARA‡	1	1KGCMG‡	.001	1ATMA‡	.001		
140INH20G	.1	240ZINA‡	1	2000MBARG	1	1KGCMVAC‡	.001	1ATMVAC‡	.001		
400INH20A‡	1	240ZINVAC‡	1	kPa	Res	±1KGCMG‡	.001	±1ATMG‡	.001		
400INH20VAC‡	1	±240ZING‡	1	20KPAG‡	.01	1KGCMG	.001	1ATMG	.001		
±400INH20G‡	1	240ZING‡	1	35KPAG‡	.1	2KGCMG‡	.001	2ATMA‡	.001		
400INH20G	1	480ZINA‡	1	100KPAA‡	.1	2KGCMG	.001	2ATMG	.001		
850INH20A‡	1	480ZING	1	100KPAVAC‡	.1	4KGCMG	.01	4ATMG	.01		
850INH20G	1	mmH <sub>2</sub> O	Res	±100KPAG‡	.1	7KGCMG‡	.01	7ATMA‡	.01		
ftH <sub>2</sub> O	Res	2000MMH20G‡	1	100KPAG	.1	7KCGMG	.01	7ATMG	.01		
7FTH20‡	.01	cmH <sub>2</sub> O	Res	200KPAA‡	.1	-1V7KCGMG‡	.01	-1V7ATMG‡	.01		
12FTH20	.01	200CMH20G‡	.1	200KPAG	.1	14KCGMG	.01	14ATMG	.01		
35FTH20‡	.1	350CMH20G‡	1	400KPAG	1	-1V14KCGMG‡	.01	-1V14ATMG‡	.01		
70FTH20	.1	1000CMH20A‡	1	700KPAA‡	1	20KCGMG	.01	20ATMG	.01		
140FTH20	.1	1000CMH20VAC‡	1	700KPAG	1	35KCGMG‡	.01	34ATMG‡	.1		
230FTH20‡	1	±1000CMH20G‡	1	-100V700KPAG‡	1	70KCGMG	.1	70ATMG	.1		
480FTH20	1	1000CMH20G	1	1400KPAG	1	140KCGMG	.1	140ATMG	.1		
700FTH20	1	2000CMH20A‡	1	-100V1400KPAG‡	1	200KCGMG	.1	200ATMG	.1		
1150FTH20	1	2000CMH20G	1	2000KPAG	1	350KCGMG‡	1	340ATMG‡	1		

How to Specify	Type
DPG2000B range -5 options	5 minute shutoff
DPG2000B range -10 options	10 minute shutoff
DPG2000B range -30 options	30 minute shutoff
DPG2000BBL range -5 options	5 minute shutoff, backlight display
DPG2000BBL range -10 options	10 minute shutoff, backlight display
DPG2000BBL range -30 options	30 minute shutoff, backlight display

### Range—see table at left

psi = PSI      torr = TORR      mbar = MBAR  
 inHg = INHG      mmH<sub>2</sub>O = MMH2O      bar = BAR  
 oz/in<sup>2</sup> = ZIN      kg/cm<sup>2</sup> = KGCM      cmH<sub>2</sub>O = CMH2O  
 inH<sub>2</sub>O = INH2O      g/cm<sup>2</sup> = GCM      atm = ATM  
 ftH<sub>2</sub>O = FTH2O      kPa = KPA  
 mmHg = MMHG      MPa = MPA

G = gauge reference pressure

VAC = gauge reference vacuum

A = absolute reference

Ranges listed as 20, 200, or 2000 display 19.99, 199.9, or 1999  
 If vacuum gauge requires a minus sign, please specify.  
 The listed ranges are rounded off.

Options—add to end of model number	
HA	High accuracy, ±0.1% FS ±1 LSD. Not available with 3 psi, bipolar, absolute, or vacuum sensors, and some 3.5 digit display ranges. See table at left for availability.
TP	Top port, gauge port on top of case. DPG1000 only.
<b>Accessories—order separately</b>	
RB	Protective rubber boot. DPG1000 only.
CD	Calibration data; 5 test points and date
NC	NIST traceability documentation, 5 points and date



RB  
Rubber  
Boot



TP top port  
option with  
RB Rubber  
Boot

Example: DPG2000BBL300PSIG-5

Battery powered, backlight display, 0-300 psig, 5 minute auto shutoff,  
 Note: Model number on gauge may vary from part number ordered.

## Precautions

### Approved Locations

The DPG2000B series is approved for use in the following Hazardous Locations.

IS Class I Div 1 Gp ABCD

T3C Ta = -40°C to 82°C; T4 Ta = -40°C to 66°C.

CL I Zone 0 AEx/Ex ia IIC

T3 Ta = -40°C to 82°C; T4 Ta = -40°C to 66°C


### Installation

- ✓ Read these instructions before installing the gauge. Configuration may be easier before the gauge is installed. Contact the factory for assistance.
- ✓ Installation instructions must be strictly followed in compliance with Intrinsic Safety National Standard NEC 504 or ANSI/ISA RP 12.6 and the National Electrical Code.
- ✓ Outdoor or wash down applications require a NEMA 4X gauge or installation in a NEMA 4X housing.
- ✓ The pressure gauge enclosure's metal base must be mounted as part of a bonded structure.
- ✓ Use fittings appropriate for the pressure range of the gauge.
- ✓ Due to the hardness of stainless steel, it is recommended that a thread sealant be used to ensure leak-free operation.
- ✓ For contaminated media use an appropriate screen or filter to keep debris out of gauge port.
- ✓ Avoid permanent sensor damage! NEVER insert objects into gauge port or blow out with compressed air.
- ✓ Remove system pressures before removing or installing gauge.
- ✓ Install or remove gauge using a wrench on the hex fitting only. Do not attempt to turn by forcing the housing.

### Operation

- ✓ Use within the pressure range indicated on gauge label.
  - ✓ Avoid permanent sensor damage! Do not apply vacuum to gauges not designated for vacuum operation.
  - ✓ Use only with media compatible with 316L stainless steel.
  - ⚠ Gauges are not for oxygen service. Accidental rupture of sensor diaphragm may cause silicone oil inside sensor to react with oxygen.
  - ✓ The DPG2000B series gauges must only be operated in specified ambient temperature ranges.
- ### Maintenance
- ✓ The non-metallic cover of the pressure gauge is considered to constitute an electrostatic discharge hazard. Clean only with a damp cloth.
  - ✓ Batteries must be replaced when the low battery indication comes on to prevent unreliable readings.
  - ✓ WARNING: Replace batteries with approved type in non-hazardous locations only.
  - ✓ Approved batteries are two Panasonic LR03 1.5 V AAA alkaline cells. Replace both batteries at the same time.
  - ☒ WARNING: Substitution of batteries may impair intrinsic safety. Improper voltages will damage the gauge.
  - ✓ WARNING: Substitution of components may impair intrinsic safety. Do not modify the gauge.
  - ✓ These products do not contain user-serviceable parts except for batteries. Contact factory for repairs, service, or refurbishment.

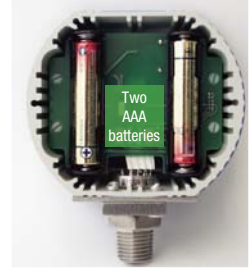
## Battery Replacement

A low battery indication (either LOBAT or a  symbol depending on the model) will be shown in the upper left-hand corner of the display when the battery voltage falls sufficiently. The batteries should be replaced when the indicator comes on or unreliable readings may result.

WARNING: Replace batteries with approved type in non-hazardous locations only. Replace batteries with two Panasonic LR03 1.5 V AAA alkaline cells.

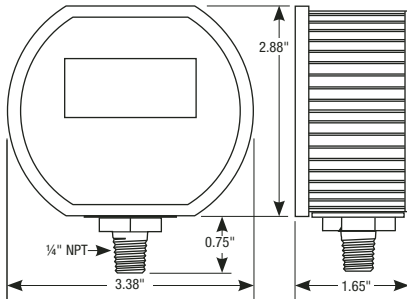
Replace both batteries with new ones at the same time. Do not mix different types of batteries. Substitution of components may impair intrinsic safety.

1. Remove the 6 Phillips screws on the back of the unit.
2. Remove batteries by lifting up the positive end of the battery (opposite the spring) taking care not to bend the spring.
3. Discard old batteries properly, do not discard into fire, sources of extreme heat, or in any hazardous manner.
4. Install batteries with correct orientation. The negative (flat) end of each battery should be inserted first facing the battery holder spring.
5. Replace the back cover, including the rubber gasket.



DS-DPG2000B rev. 06-11

## Dimensions



## Types of Gauges

Gauge reference reads zero with the gauge port open.

Bipolar ranges read positive pressure and vacuum in the same units, and zero with the gauge port open.

Sealed reference reads zero with the gauge port open and is referenced to 14.7 psi. Used for 1000 psi and up.

Absolute reference reads atmospheric pressure with gauge port open and zero at full vacuum.



## Operation

Press the button on the front of the gauge to activate the display. The pressure readings are then displayed and updated approximately 3 times per second.

The gauge will stay on for a period of time determined by the auto shutoff time. After this time the gauge will automatically shut off to conserve battery life.

### Display Backlighting (BL models only)

Display backlighting can be turned on by pressing and holding the front button. When the button is released the display backlighting turns off. Frequent use of the display backlight shortens battery life.

## Calibration Preparation

Calibration must only be done in a non-hazardous area. See Installation and Precautions above.

Gauges are calibrated at the factory using equipment traceable to NIST. There is no need to calibrate the gauge prior to use.

Calibration should only be performed by qualified individuals using appropriate calibration standards and procedures.

Contact factory if assistance is required. Gauges can be returned to factory for certified calibration and repairs. NIST traceability is available.

Calibration intervals depend on your quality control program requirements. Many customers use an annual calibration cycle. The calibration equipment should be at least four times more accurate than the gauge being calibrated.

The calibration system must be able to generate and measure pressure and/or vacuum over the full range of the gauge.

A vacuum pump able to produce a vacuum of 100 microns (0.1 torr or 100 millitorr) or lower is required for vacuum and absolute gauges.

Warning: Never apply vacuum to gauge not designated for vacuum service. Permanent sensor damage may result.

It is good practice to install fresh batteries before calibration. Allow the gauge to equalize to normal room temperature (about 20 minutes minimum) before calibration.

## Calibration

See calibration preparation section. See rear label of gauge for potentiometer identification model identification and range and pressure range.



Remove calibration label to expose opening with calibration potentiometers. This label may be reused many times if kept clean.

Zero calibration should be done before span calibration.

### Zero for gauge reference ranges

With the pressure port open to the ambient, adjust the Zero control until the gauge reads zero, with the “-” sign occasionally flashing.

### Zero for absolute reference gauges

Apply full vacuum to the gauge. Adjust the Zero potentiometer for a display indication of zero.

### Span for gauge reference pressure gauges and absolute reference gauges

Apply full-scale pressure and adjust the Span potentiometer for a display indication equal to full-scale pressure indication of the calibrator.

### Span for gauge reference vacuum gauges

Apply full vacuum to the gauge. Adjust the span potentiometer to match the gauge display to the vacuum indication of the calibrator.

Verify pressure indications at 0%, 25%, 50%, 75%, and 100% of full scale and repeat calibration as needed to achieve best accuracy over desired operating range.

Replace the calibration label.

Cecomp maintains a constant effort to upgrade and improve its products. Specifications are subject to change without notice. Consult factory for your specific requirements.