Ranges and Resolution

abs: Absolute reference (atmospheric pressure to zero at full vacuum)
vac: Vacuum gauge, minus sign not used unless specified
Resolution is fixed as indicated in table below
Contact factory for engineering units not listed

Contact factory for other engineering units	120.0 inHg	1600 mmHg	35.0 bar	1.000 kg/cm² abs
	199.9 inHg abs	760 torr abs	70.0 bar	1.000 kg/cm² vac
	199.9 inHg	1600 torr abs	140.0 bar	±1.000 kg/cm²
3.00 psig	50.0 oz/in²	2100 mmH₂O	199.9 bar	1.000 kg/cm²
5.00 psig	80.0 oz/in²	3500 mmH₂O	350 bar	1.999 kg/cm² abs
15.00 psi abs	240 oz/in² abs	199.9 cmH₂O	19.99 kPa	1.999 kg/cm²
15.00 psig vac	240 oz/in² vac	350 cmH₂O	35.0 kPa	4.00 kg/cm²
±15.0 psig	±240 oz/in²	1000 cmH₂O	100.0 kPa abs	7.00 kg/cm² abs
15.00 psig	240 oz/in²	2100 cmH₂O	100.0 kPa vac	7.00 kg/cm²
30.0 psi abs	85.0 inH₂O	199.9 mbar	±100.0 kPa	14.00 kg/cm²
30.0 psig	140.0 inH₂O	350 mbar	100.0 kPa	19.99 kg/cm²
60.0 psig	400 inH₂O abs	1000 mbar abs	199.9 kPa abs	35.0 kg/cm²
100.0 psi abs	400 inH₂O vac	1000 mbar vac	199.9 kPa	70.0 kg/cm²
100.0 psig	±400 inH₂O	±1000 mbar	400 kPa	140.0 kg/cm²
199.9 psig	400 inH₂O	1000 mbar	700 kPa abs	199.9 kg/cm²
300 psig	850 inH₂O	1999 mbar abs	700 kPa	350 kg/cm²
500 psig	7.00 ftH₂O	1999 mbar	1500 kPa	1.000 atm abs
1000 psig	12.00 ftH₂O	4000 mbar	1999 kPa	±1.000 atm
1999 psig	35.0 ftH₂O	1.000 bar abs	3500 kPa	1.000 atm
3000 psig	70.0 ftH₂O	1.000 bar vac	7000 kPa	4.00 atm
5000 psig	140.0 ftH₂O	±1.000 bar	3.50 MPa	7.00 atm
6.00 inHg	230 ftH₂O	1.000 bar	7.00 MPa	14.00 atm
10.00 inHg	480 ftH₂O	1.999 bar abs	14.00 MPa	19.99 atm
30.0 inHg abs	150.0 mmHg	1.999 bar	19.99 MPa	35.0 atm
30.0 inHg vac	260 mmHg	4.00 bar	35.0 MPa	70.0 atm
±30.0 inHg	760 mmHg abs	7.00 bar abs	1000 g/cm² abs	135.0 atm
30.0 inHg	760 mmHg vac	7.00 bar	1000 g/cm²	199.9 atm
60.0 inHg abs	760 mmHg	14.00 bar	2100 g/cm² abs	340 atm
60.0 inHg	1600 mmHg abs	19.99 bar	2100 g/cm²	

Accuracy

Includes linearity, hysteresis, repeatability
Standard: ±0.25% of full scale ±1 least significant digit
Optional: **-HA** ±0.1% FS ±1LSD (most ranges)
CD Factory 5-point calibration data
NC NIST traceable test report and 5-point calibration data

Display

3 readings per second nominal display update rate
Ranges up to 1999: 3½ digit LCD, ½" digit height
3000 and 5000 psi ranges: 4 digit LCD, 0.4" digit height

Controls

Non-interactive zero and span calibration, ±10% range
Setpoint 1 and Setpoint 2: 0-100% range
Front panel TEST button, when depressed toggles SP1 and SP2 alarms to opposite states

Alarm Deadband

1% of of full scale hysteresis

Alarm Outputs

Dual form C (SPDT) relay contacts; 1A/24VDC, 0.5A/115VAC, non-inductive
Setpoint 1 and Setpoint 2 settings via top-accessible multiturn potentiometers
HI (SP1), LO (SP2) alarms normal action configuration standard
3 ft long, 6-conductor 22 AWG cable with stripped and tinned wire ends
Available configurations: HI/LO, HI/HI, LO/LO, normal or reverse acting
Bi-color (red/green) LEDs on front panel

Alarm Response Time

100 milliseconds typical

Power

Gauge is on whenever power is applied. Designed for continuous operation.
Any AC source of 8 to 24 VAC 50/60 Hz or any DC source of 9 to 32 VDC
1.0 watt maximum power consumption
3 ft long 2-conductor 22 AWG power cable with stripped and tinned wire ends
Order optional **WMPSK** 12 VDC wall mount power supply kit to operate on 115 VAC

Environmental

Storage temperature: –40 to 203°F (–40 to 95°C)
Operating temperature: –4 to 185°F (–20 to 85°C)
Compensated temperature: 32 to 158°F (0 to 70°C)

- ***±0.25% Test Gauge Accuracy***
- ***316 Stainless Steel Wetted Parts***
- ***Dual SPDT Alarms***
- ***Bi-Color (Red/Green) Alarm LEDs***
- ***Alarm Test Function***

DPG1000ADA100PSIG-1N
100.0 psig Range
Hi/Lo Normal Alarms

Size

3.38" W x 2.88" H x 1.65" D housing
Add approximately 0.75" to height for pressure fitting
Add approximately 1" to depth for strain relief and wire clearance

Weight

Gauge: 9 ounces (approx.)
Shipping weight: 1 pound (approx.)

Housing

Extruded aluminum case, light gray epoxy powder coated, blue ABS/ polycarbonate bezel (gray aluminum bezel optional), front and rear gaskets, polycarbonate label

Pressure/Vacuum Connection Size and Material

1/4 NPT male
All wetted parts are 316 stainless steel

Overpressure

3000 psig range and metric equivalents: 5000 psig
5000 psig range and metric equivalents: 7500 psig
All others 2 times sensor pressure

Burst Pressure

4 times sensor pressure rating, or 10,000 psi, whichever is less

Models and Options

DPG1000ADA range units ref - alarm

Pressure/Vacuum Range
Units
G=Gauge, **A**=Absolute, **VAC**=Vacuum
Alarm Options
1N = Hi/Lo Normal action (Std)
2N = Hi/Hi Normal action
3N = Lo/Lo Normal action
1R = Hi/Lo Reverse action
2R = Hi/Hi Reverse action
3R = Lo/Lo Reverse action

Example: **DPG1000ADA200PSIG-1N**
DPG1000ADA, 199.9 psig, HI/LO normal action alarms

Unit Abbreviations

psi = **PSI**	ftH₂O = **FTH2O**	kg/cm² = **KGCM**	mbar = **MBAR**
inHg = **INHG**	mmHg = **MMHG**	g/cm² = **GCM**	bar = **BAR**
oz/in² = **ZIN**	torr = **TORR**	kPa = **KPA**	cmH₂O = **CMH2O**
inH₂O = **INH2O**	mmH₂O = **MMH2O**	MPa = **MPA**	atm = **ATM**

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DPG1000ADA Instructions

INSTALLATION PRECAUTIONS

Install or remove gauge using wrench on hex fitting only.

Do not turn using housing or any other part of the gauge. Use fittings appropriate for the pressure range of the gauge.

Do not apply vacuum to gauges not designed for vacuum operation.

Due to the hardness of 316 stainless steel, it is recommended that a thread sealant be used to ensure leak-free operation.

NEVER insert objects into the gauge port or blow out with compressed air. Permanent damage not covered by warranty will result to the sensor.

NEVER connect the gauge power wires directly to 115 VAC or permanent damage not covered by warranty will result.

ELECTRICAL CONNECTION

The DPG1000ADA can be powered by:

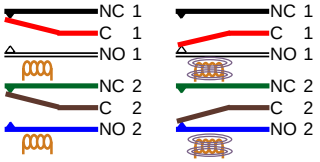
AC source: 8 to 24 VAC 50/60 Hz
DC source: 9 to 32 VDC

Connection is made with the two cables at the gauge rear. The smaller two-conductor cable with one RED and one BLACK lead is for the gauge power supply. However, since the gauge will operate on either AC or DC power, there is no need to observe polarity; simply connect an AC supply of 8 to 24 VAC, 50/60 Hz, or a DC supply of 9 to 32 VDC to the two wires to activate the gauge.

Never allow the gauge supply voltage fall below 8 VAC RMS if AC power is used, or 9 VDC if DC power is used. Operation with less than these values may cause erratic or erroneous readings or alarm operation.

The 6-conductor cable is for the 2 SPDT relay contacts.

Contact 1	Normally Closed (NC)	**BLACK**
Contact 1	Common (C)	**RED**
Contact 1	Normally Open (NO)	**WHITE**
Contact 2	Normally Closed (NC)	**GREEN**
Contact 2	Common (C)	**BROWN**
Contact 2	Normally Open (NO)	**BLUE**



OPERATION

The gauge is powered on whenever a supply voltage is applied. The gauge is designed for continuous operation. In normal operation, the system pressure is displayed on the gauge LCD. In addition, the circuitry compares the system pressure to two independent setpoint levels setpoint 1 and setpoint 2.

These set points are adjustable via top-accessible controls and may be viewed by pressing either the SP1 or SP2 buttons. Pressing SP1 or SP2 will switch the display to show, and allow adjusting of, the corresponding setpoint only, normal operation of the alarm outputs is not otherwise affected.

Alarm status is easily seen on the two alarm indicator LEDs in the corner of the SP1 and SP2 buttons. A GREEN indication is a clear or non-alarm condition. RED is an abnormal or alarm condition. If a particular setpoint is configured as a HI alarm, the DPG1000ADA will provide a RED alarm indication when the system pressure exceeds the setpoint.

If a particular setpoint is configured as a LO alarm, the DPG1000ADA will provide a RED alarm indication when the system pressure falls below the setpoint. Alarm configurations are set at the factory at time of manufacture and may be ordered as HI/LO, HI/HI, or LO/LO configurations.

TEST BUTTON

For system setup, testing, and troubleshooting, the TEST button is provided. This button, when pressed, toggles the current state of the alarm outputs. Therefore, the alarm outputs may be "exercised" on demand without the need to vary the system pressure to test devices, annunciators, etc. connected to these outputs.

USING THE ALARM OUTPUTS

Normal vs. Reverse Action - With Normal configuration (alarm options 1N, 2N, or 3N), 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. 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** 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.

Users who do not want an alarm indication when the gauge power is off should specify **Reverse** action (alarm options 1R, 2R, or 3R). In this case, the relay will be open (not energized) in the non-alarm condition and closed for the alarm condition. In this case, continuity can be expected from common to normally closed in the green (non-alarm) condition and from common to normally open in the red (alarm) condition.

Understanding Deadband - The alarm circuit setpoints have built-in deadbands, also known as hysteresis, of 1% of span as standard. This means, for example, the deadband is approximately 1 psi in a 0 to 100 psi gauge.

This deadband serves to eliminate output oscillation or "chatter" in the process due to minor fluctuations in pressure. If, for example, the system pressure in a 0-100 psi system is 40.0 psi, and Setpoint 1 is set to 50.0 psi (HI alarm), the alarm indication will trip if the pressure exceeds 50.0 psi. After the HI alarm has tripped, pressing the SP1 button will show that the alarm indication will "release" at 1 psi lower (approximately 49 psi).

Contact Rating and Protection - The contacts of the alarm relays are rated at 1A/24VDC or 0.5A/115VAC. Using mechanical relay contacts above their rating, or with large inductive loads, will shorten their useful life. In circuits other than low-level switching or pilot duty, the user should consider whether external contact protection such as snubber networks or arc suppression networks are required to protect the contacts.

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

ALARM SETPOINTS

Lift calibration label on the top of the unit to access individual controls to adjust setpoint 1 and setpoint 2. See gauge label for locations.

To adjust alarm setpoint 1, press and hold the SP1 button. When holding the SP1 button, the display will show the current setting for setpoint 1. Turn the top-accessible setpoint 1 control. Repeat the procedure by pressing the SP2 button to adjust setpoint 2.

CALIBRATION

The gauge is calibrated at the factory using equipment traceable to NIST. There is no need to calibrate the gauge before putting it in service. Complete calibration instructions can be downloaded from **www.cecomp.com**. Gauges may be returned to Cecomp Electronics for factory certified recalibration. NIST traceability is available.

Span calibration should only be attempted if the user has access to a pressure reference of known accuracy. The quality of the calibration is only as good as the accuracy of the calibration equipment and ideally should be at least four times the gauge accuracy.

Absolute reference gauges require vacuum generation and atmospheric pressure measurement equipment for accurate calibration and thus are more difficult to calibrate in the field.

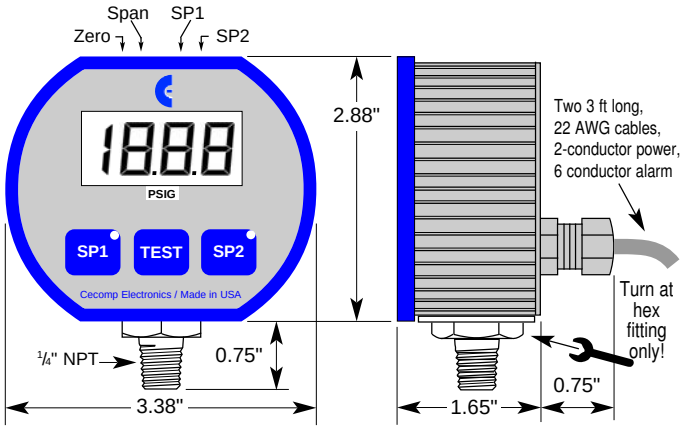
The calibration system must be able to generate and measure pressure/vacuum over the full range of the gauge. A vacuum pump able to produce a vacuum of 10 microns (0.01 torr or 10 millitorr) or lower is required for vacuum and absolute gauges.

1. Low-voltage powered gauges must be connected to 8-24 VAC 50/60 Hz or 9-32 VDC during the calibration procedure. The supply voltage has negligible effects on the gauge calibration as long as it is within the stated voltage ranges.
2. Allow the gauge to equalize to normal room temperature before calibration.
3. Lift calibration label on the top of the unit to access individual controls to adjust the zero and span of the display.
4. Zero calibration must be done before span calibration.
5. **Zero for gauge reference pressure or vacuum gauges:** Gauge reference units may be re-zeroed without affecting the span calibration. The gauge port must be open to the ambient with no pressure or vacuum applied. Adjust the Zero potentiometer for a display indication of zero with the minus (–) sign occasionally flashing.

   Zero for absolute reference gauges: Apply full vacuum to the gauge. Adjust the Zero potentiometer for a display indication of zero with the minus (–) sign occasionally flashing.
6. **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.

   Span for gauge reference vacuum gauges: Apply full vacuum to the gauge. Adjust the Span potentiometer for a display indication equal to full-scale vacuum.
7. 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.

DIMENSIONS



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

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