



PG-5000

Digital Pressure Gauge

- Large, full 4 digit display with 0.5 in. characters
- Available ranges from vacuum up to 500 psi, and from 0 up to 10,000 psi
- Microprocessor-based circuit has "TARE" capability standard
- Display capability to 9999
- Self-powered by standard 9 V battery
- $\pm 0.25\%$ accuracy of full scale (on selected ranges)
- Gauge reference pressure
- Internally compliant to CE
- On/off button

Options

- Other units of measure available
- Other process connection fittings available
- 16-minute auto-off optional at no extra cost
- Rear pressure port
- Peak-hold
- Zero adjust knob
- 0-2 VDC output (battery powered)
- 4-20 mA output (loop powered)
- 0-5 VDC output (external power)
- Up to $\pm 0.1\%$ full scale accuracy with NIST certification, on selected ranges
- Cleaned for oxygen service
- For OEM applications or other configurations, consult factory

Accessories

- Panel mount flange (rear pressure port only)
- AC to DC external power supply
- Shock dampening rubber boot

Operational Description

Battery powered digital gauge offers full four digit display.

The PG-5000 four-digit display unit incorporates an all-stainless steel sensor. The sensor is resistant to most typical exposures of vibration and shock. The APG gauge is also less sensitive to the effects of pulsating pressures, a major advantage when compared to vibration sensitive dial gauges. Available options include peak hold, 4-20 mA two wire, 0-2 VDC, and 0-5 VDC outputs.

Applications

No special tools or adaptors are required for installation of the PG-5000. This makes the unit an easy, cost effective replacement for less accurate, standard mechanical gauges. The unit's long life, ease of operation, high accuracy, and low cost make it perfect for all applications where standard 2.5 in. or larger mechanical gauges have been used.



■ Specifications

Performance

Standard Pressure Ranges

Compound Gauge: From vac up to 500 psi

Gauge: From 0 to 10000 psi

Absolute @ ±0.25% Linear Accuracy: From 0 to 5000 psi

Absolute @ ±0.1% Linear Accuracy: From 0 to 10000 psi

Overpressure: 2x full scale

Burst Pressure: 10x full scale or 20,000 psi (whichever is less)

Accuracy (linearity & hysteresis): ±0.25% of full scale (B.F.S.L.) or 2 digital counts, whichever is greater; NIST traceable certification also available for ±0.25% and ±0.1% accuracy in selected ranges

Stability – One Year Zero Drift: 15-5: < ±0.5% F.S., 316: < ±1% F.S.

Thermal Zero Shift

> 100 psi: ±0.02% F.S./°F

≤ 100 psi: ±0.04% F.S./°F

Thermal Sensitivity Shift

> 100 psi: ±0.02% F.S./°F

≤ 100 psi: ±0.04% F.S./°F

Life: 10 million cycles minimum

Environmental

Compensated Temp: 20 to 130°F (-7 to 54°C)

Storage Temp: -40 to 160°F (-40 to 71°C)

Operating Temp: 0 to 160°F (-18 to 71°C)

Electrical

Batteries: Standard 9 V (1), user replaceable (2-year life typical with auto off option)

External Power: 10-32 VDC

Display Type: 4 digit LCD, 0.5 in. digits

Display Resolution: 1 part in 9999

Low Battery Detection: Displays "LBAT" @ 4.0 VDC ±5% with $V_{IN} = 9.0$ VDC

Adjustments: Front accessible: "Z" Zero Adjust; "S" Span Adjust

Auto-Off: 16 minutes (not available with options L1, L3 or L4)

Physical

Weight: 0.36 lb.

Construction Materials

Case: Injection molded case material EMI-X® PDX-W-88341

Wetted Materials: 15-5 SS; 316L SS available at no extra charge (High resolution ranges under 100 psi, in 316L SS incorporate a Hastelloy® C276 diaphragm); One piece Hastelloy® fitting also available (minimum quantities required)

6 Pin Connector: Electrical receptacle, R04-R6M or equivalent with optional output selections (included with optional output selections)

6 Pin Mating Connector: R04-J6F or equivalent (Sold separately. See accessories.)

External Power Connector: 1/8 in. – 3 conductor (included with optional external power selection)

External Power Mating Connector: 1/8 in. – 3 conductor (included with optional external power selection)

Process Cavity Volume: 0.07³ in.

Specifications are subject to change without notice.

■ Electrical Specifications

4-20 mA Output

Input Voltage (Excitation): 7 VDC min (no load) to 35 VDC max

Input Current: 3-30 mA max

Output: 4-20 mA ±0.16 mA at set points

Output/Input: 2 wire loop powered

Resolution: Infinite

Protection: Reversed polarity

4-20mA Output vs. Pressure Type Table

Pressure Type	Pressure			Output Display*
	Vacuum	0	F.S.	
Vacuum	20mA	4mA	N/A	Output Display*
	30.0	0.0	N/A	
Gauge / Absolute	N/A	4mA	20mA	Output Display*
	N/A	0.0	F.S.	
Compound Gauge	4mA	-	20mA	Output Display*
	-30.0	0.0	F.S.	

*Display in inHg, for example only.

Note: For a pressure type of compound gauge, with 4-20 mA output, the full scale pressure range minimum is 100 psi.

0-2 VDC Output

Input Voltage (Excitation): Battery powered

Output: Zero set point is ±0.15 V with a 2 VDC span ±0.02 VDC

Output/Input: 2 wire

Resolution: Infinite

0-5 VDC Output

Input Voltage (Excitation): 12 to 31 VDC

Input Current: 6 mA max

Output: 0-5 VDC / ±0.05 VDC at set points

Output/Input: Non-isolated 3 wire

Resolution: Infinite

Protection: Reversed polarity

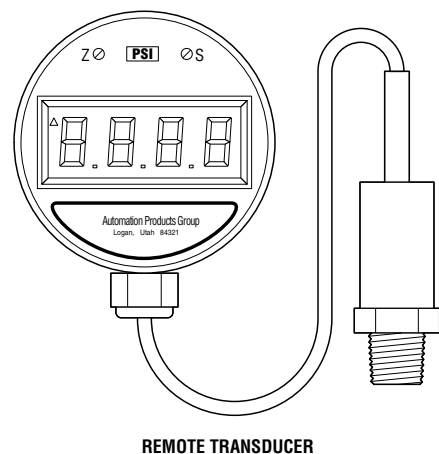
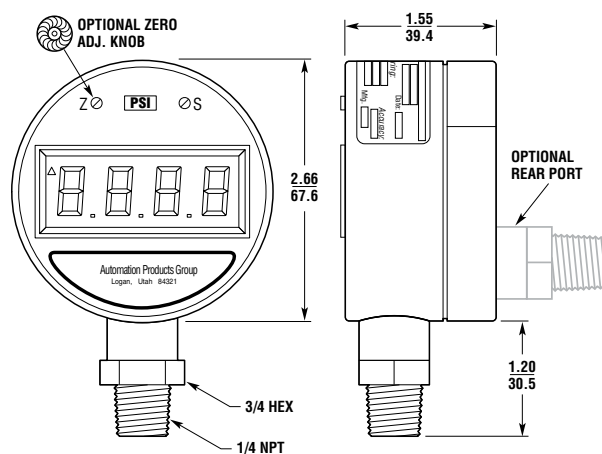
■ Common Pressure Ranges

Range Option	Range	Unit of Measure	Display Resolution
30*	-30 to 0	inHg	0.1
30	0 to 30	psi	0.1
60	0 to 60	psi	0.1
100	0 to 100	psi	0.1
160	0 to 160	psi	0.1
200	0 to 200	psi	0.1
250	0 to 250	psi	0.1
500	0 to 500	psi	0.1
1000	0 to 1000	psi	1
2000	0 to 2000	psi	1
5000	0 to 5000	psi	1
10000	0 to 10000	psi	1

Other ranges available.

*Requires VAC option when ordering.

■ Dimensions — in./mm



■ Linear Accuracy Chart

Full Scale Display	Display Resolution	Standard Linear Accuracy	Accuracy Options
≥ 15.00 but < 20.00*	0.01	0.25%	N0, N1
≥ 20.00 but < 80.00*	0.01	0.25%	N0, N1, N2
≥ 30.0 but < 80.0	0.1	Better than 1%	N3, N4
≥ 80.0 but < 200.0	0.1	0.25%	N0, N1
≥ 200.0 but < 800.0	0.1	0.25%	N0, N1, N2
≥ 800 but < 2,000	1	0.25%	N0, N1
≥ 2,000 but < 10,000	1	0.25%	N0, N1, N2

*Requires high resolution option

Notes:

- This table refers to linear accuracy for standard fittings. Contact APG for linear accuracies for non-standard fittings.
- This table lists linear accuracies for specific ranges. For an explanation of how linear accuracy is calculated, please contact APG.

■ Wiring

PG-5000 Pin Out Table

		4-20 mA	0-5 VDC	0-2 VDC	Ex Pwr
6 Pin Circular	A	+ Excitation	+ Excitation	N/A	N/A
	B	- Excitation	+ Output	N/A	N/A
	C	N/C	- Output	N/A	N/A
	D	N/C	- Excitation	N/A	N/A
	E	N/C	N/C	N/A	N/A
	F	N/C	N/C	N/A	N/A
1/8" Plug	Tip	N/A	N/A	+ Output	+ Pwr
	Ctrl	N/A	N/A	- Output	- Pwr
	Body	N/A	N/A	N/C	N/C

N/C indicates no connection.

N/A indicates not applicable.

Electrical Cable Specifications

AWG: 26

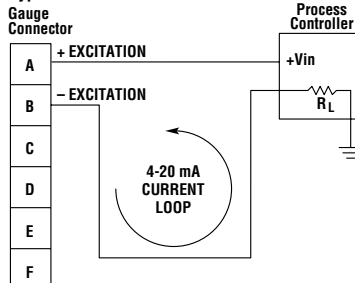
Stranding: 7/34

Type: MIL-W-16878E

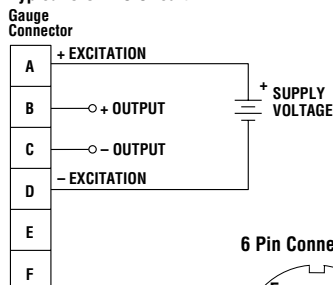
Shield: 36 AWG TPC Braid

Jacket: PVC

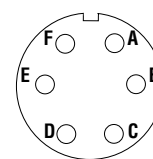
Typical 4-20 mA Circuit



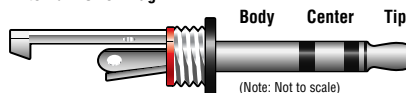
Typical 0-5 VDC Circuit



6 Pin Connector



External Power Plug



Option Tables

Unit of Measure Table

There are 9 choices available:

psi [▲]	kPa	inHg
bar	inH2O*	kgcm ²
mbar*	mmHg*	fsw

*Requires G2 option.

Other units of measure available.

Pressure Type Table

G [▲]	Gauge
G2	High resolution gauge
CG	Compound gauge
V	Vac
A	Absolute
S	Sealed

Port Table

F0 [▲]	Bottom
F1	Rear
F2	Bottom with O ₂ clean
F3	Rear with O ₂ clean
F5	Remote transducer with mV sensor
F6	Rear port with panel bracket installed
F7	Bottom port with rubber boot installed

Operation Table

Operation	Electrical Connector
L0 [▲]	9 V battery E0
L1	4-20 mA output E1
L2	0-2 VDC output E2
L3	0-5 VDC output E1
L4	External power E2

Option A4 is not available with option L1, L3 or L4.

Electrical Cable Length Table

Cable Length	
W0 ▲	0 ft.
W1	2 ft. (0.6 m)
W2	5 ft. (1.5 m)
W3	10 ft. (3 m)
W4	25 ft. (7.6 m)
W5	50 ft. (15.2 m)

Process Connection Table

P0 [▲]	1/4-18 NPTM
P2	1 1/2 in. sanitary
P5	1/4-18 NPTF
P7	7/16-20 SAE male
P14	1/8-27 NPTM
P16	PT 1/4 (BSPM 1/4)
P22	G3/8 (3/8 BSPP) male

Other options available.

[▲] This option is standard.

Ordering Information

PG-5000 - [Range] - [] - [] - [] - [] - [] - [] - [] - [] - [] - [] - []

Unit of Measure	See Unit of Measure Table
Pressure Type	See Pressure Type Table
G-S	See Pressure Type Table
Auto Off	
A0 [▲]	No auto off
A3	8 minute auto off
A4	16 minute auto off
A5	32 minute auto off
Zero Adjustment	
Z0 [▲]	Cover screw
Z1	Z knob
Port	
F0-F7	See Port Table
Peak Hold	
H0 [▲]	No peak hold
H1	Peak hold
Operation	
L0-L4	See Operation Table
Electrical Connection	
E0 [▲]	No connector
E1	6 pin circular (Mating connector sold separately. See accessories.)
E2	1/8 in., 3-conductor external power and mate
Electrical Cable Length	
W0	0 ft. (Use with E1, E2 (no cable) connections)
	Mating connectors (E1) with cable. See accessories.
W1-W5	Use with E2 connection. See Electrical Cable Length Table
Process Connection	
P0-P22	See Process Connection Table
Accuracy (see Linear Accuracy Chart for details)	
N0 [▲]	±0.25%
N1	±0.25% with NIST certification (selected ranges)
N2	±0.1% with NIST certification (select ranges)
N3	±1% or better
N4	±1% or better with NIST certification
Materials	
M0 [▲]	15-5 SS
M1	316L SS (under 100 psi, 316L SS/Hastelloy®)
	Consult factory for other material options.

Accessories

Please order separately, by part number. When ordering a flange or boot as an accessory, they will not be installed on the gauge.

Description	Part Number	Description	Part Number
6-pin circular mating connector (E1)	509110	Panel mount flange (rear port only)	512598
6-pin circular mating connector (E1)		AC to DC external power supply	
with cable (see note below)	509110-X0XX*	(includes E2 mating connector)	511641
		Rubber boot	512625

*To order a 6-pin circular mating connector with cable, you will need to specify the operation and cable length.

Specify operation: L1=1, L3=2;

Specify cable: 2, 10, 25 or 50 ft.

Example: 509110-1025 is a 4/20 mA output with 25 ft. cable