Rev. 10.09

PG5

Digital Pressure Gauge

- Large, full 5-digit display with 0.4 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
- Self-powered by standard 9 V battery
- Selectable auto-off (2, 4, 8, 16, 32 min.)
- Peak hold
- Bar graph analog readout
- Max. and Min. function
- Selectable units of measure (psi, bar, mbar, kPa, MPa, inH_20, cmHg, mmHg, inHg, $kgcm^2$, ftH_20)
- ±0.25% accuracy of full scale
- On/off button

Options

- Many units of measure available
- Other process connection fittings available
- Rear pressure port
- 0-2 VDC output (battery powered)
- 4-20 mA output (loop powered)
- 0-5 VDC output (external power)
- Up to ±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 with five digit display

The PG5 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 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 PG5. 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.

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Specifications

Performance
Standard Pressure Ranges
Compound Gauge: From vac up to 500 psi, 30 psi minimum
Gauge: From 0 to 500 psi
Sealed Gauge: Greater than 500 psi, up to 10000 psi
Absolute: From 0 to 5000 psi
Overpressure: 2x full scale
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: < ±1% F.S.
Thermal Zero Shift: ±0.02% F.S./°F
Thermal Sensitivity Shift: ±0.02% 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 16 min. auto off)
External Power: 9-28 VDC
Display Type: 5 digit LCD, 0.4 in. digits
Display Resolution: 1 part in 10000
Low Battery Detection: Battery level indicator with 25% increments
Adjustments: Auto Zero, Tare
Auto-Off: Menu selectable 2, 4, 8, 16, 32 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: >5000 psi; 316L SS: Up to 10,000 psi
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: 0.07^3 in. typical

Specifications are subject to change without notice.

User Selectable Units

Choices available for pressures less than 100 psi:

psi	**kPa**	**inHg**	**bar**
inH_2O	**mmHg**	**mbar**	

Choices available for pressures greater than 100 psi:

psi	**kPa**	**cmHg**	**bar**
MPa	**ftH_2O**	**$kgcm^2$**	

Consult the factory for custom units of measure.

Electrical Specifications

4-20 mA Output
Input Voltage (Excitation): 9 VDC min (no load) to 28 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: 14 bit
Protection: Reversed polarity

4-20mA Output vs. Pressure Type Table

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

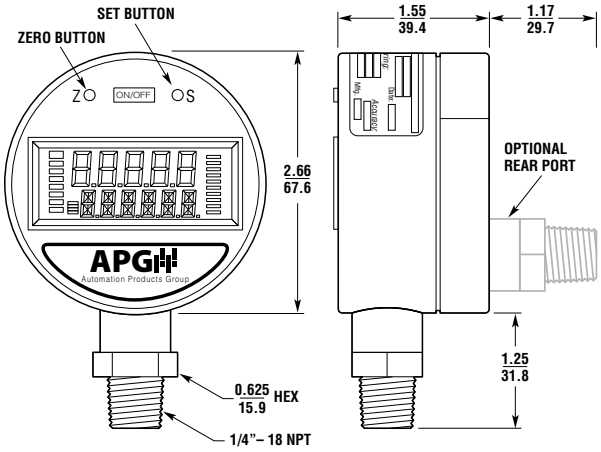
0-5 VDC Output
Input Voltage (Excitation): 9 to 28 VDC
Input Current: 6 mA max
Output: 0-5 VDC / ±0.05 VDC at set points
Output/Input: Non-isolated 3 wire
Resolution: 14 bit
Protection: Reversed polarity

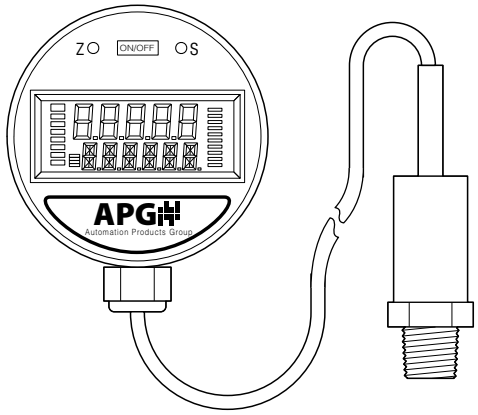
Common Pressure Ranges

Range Option	Range	Unit of Measure	Display Resolution
15	0 to 15	psi	0.01
30	0 to 30	psi	0.01
50	0 to 50	psi	0.01
100	0 to 100	psi	0.01
300	0 to 300	psi	0.1
500	0 to 500	psi	0.1
1000	0 to 1000	psi	1
3000	0 to 3000	psi	1
5000	0 to 5000	psi	1
10000	0 to 10000	psi	1

Other ranges available.

Dimensions — in./mm





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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 ≤ 100.00	0.01	0.25%	N0, N1, N2
> 100.0 but < 200.0	0.1	0.25%	N0, N1
≥ 200.0 but < 1,000.0	0.1	0.25%	N0, N1, N2
≥ 1,000 but < 2,000	1	0.25%	N0, N1
≥ 2,000 but ≤ 10,000	1	0.25%	N0, N1, N2

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

Wiring

PG5 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
	Ctr	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

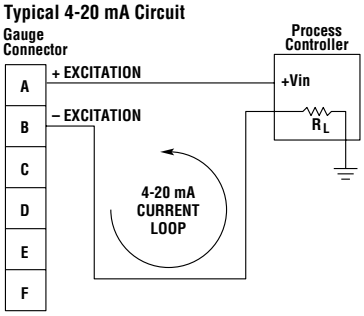
Stranding: 7/34

Type: MIL-W-16878E

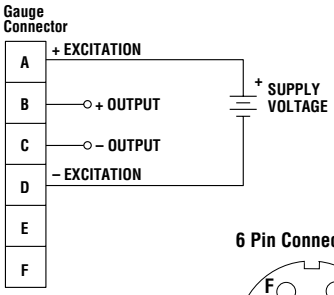
Shield: 36 AWG TPC Braid

Jacket: PVC

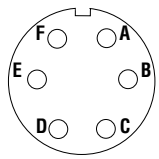
Typical 4-20 mA Circuit



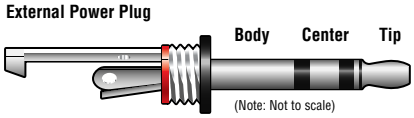
Typical 0-5 VDC Circuit



6 Pin Connector



External Power Plug



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Option Tables

Pressure Type Table

PSIG ▲	Gauge (up to 500 psi)
PSICG	Compound gauge
PSIV	Vacuum
PSIA	Absolute
PSIS	Sealed gauge (greater than 500 psi)

Port Table

F0 ▲	Bottom
F1	Rear
F2	Bottom with 0_2 clean
F3	Rear with 0_2 clean
F5	Remote transducer with mV sensor
F6	Rear port with panel bracket installed
F7	Bottom port with rubber boot installed

Operation Table

L0 ▲	9 V battery
L1	4-20 mA (loop powered) output
L2	0-2 VDC output
L3	0-5 VDC output
L4	External power

Auto-off options are not available with L1, L3 or L4.

Process Connection Table

P0 ▲	1/4-18 NPTM
P7	7/16-20 SAE male
P14	1/8-27 NPTM
P16	PT 1/4 (BSPM 1/4)

Other options available.

▲ This option is standard.

Ordering Information

PG5 – Range – ☐ – ☐ – ☐ – ☐ – ☐

Pressure Type
- ___ See Pressure Type Table

Port
- **F0-F7** See Port Table

Operation
- **L0-L4** See Operation Table

Process Connection
- **P0-P16** 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)

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
6-pin circular mating connector (E1)	509110
6-pin circular mating connector (E1) with cable	509110-X0XX* (Specify output: L1=1, L3 = 2) (Specify 2, 10, 25 or 50 ft.)
Panel mount flange (rear port only)	512598
AC to DC external power supply (includes E2 mating connector)	511641
Rubber boot	512625

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