



# PG10

## Digital Pressure Gauge

- Large, full 5-digit display with 0.68 in. characters
- Available ranges from vacuum up to 500 psi, and from 0 up to 10,000 psi
- Environmentally-sealed housing; IP65
- Microprocessor-based circuit has “Tare”, Peak Hold and Max-Min functions standard
- Self-powered by two alkaline C batteries or external power options also available
- Selectable auto-off (2, 4, 8, 16, 32 min.) or via built-in light sensor
- Logs up to 60 records (time interval or event triggered)
- ±0.25% accuracy of full scale
- Selectable units of measure (psi, bar, mbar, kPa, MPa, inH<sub>2</sub>O, cmHg, mmHg, inHg, kg/cm<sup>2</sup>, ftH<sub>2</sub>O)
- Built-in lockout feature to prevent unauthorized access
- User selectable units of force for press applications to directly display the applied force
- 270° bar graph

### Options

- Dual solid-state or mechanical relay outputs
- 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
- Dual lithium batteries
- Modbus RTU (RS-485)
- Cleaned for oxygen service
- For OEM applications or other configurations, consult factory

### Accessories

- Panel mount bracket; can be used with both bottom and rear port options
- AC to DC external power supply

### Operational Description

#### Battery powered digital gauge with five digit display

The PG10 unit incorporates an all-stainless steel sensor. The sensor is resistant to most typical exposures of vibration and shock. The 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, 0-5 VDC outputs, and two solid-state relays.

### Applications

No special tools or adaptors are required for installation of the PG10. 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.

With its many output options and its sealed housing, the PG10 gauge gives a local readout and still provides a required analog output for data acquisition.

## ■ Specifications

Performance	
<b>Standard Pressure Ranges</b>	
<b>Compound Gauge:</b> From vac up to 500 psi, 30 psi minimum	
<b>Gauge:</b> From 0 to 500 psi	
<b>Sealed Gauge:</b> Greater than 500 psi, up to 10000 psi	
<b>Absolute:</b> From 0 to 5000 psi	
<b>Overpressure:</b> 2x full scale	
<b>Accuracy (linearity &amp; hysteresis):</b> ±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	
<b>Stability – One Year Zero Drift:</b> < ±1% F.S.	
<b>Thermal Zero Shift:</b> ±0.02% F.S./°F	
<b>Thermal Sensitivity Shift:</b> ±0.02% F.S./°F	
<b>Life:</b> 10 million cycles minimum	
Environmental	
<b>Protection Rating:</b> IP65	
<b>Compensated Temp:</b> 20 to 130°F (-7 to 54°C)	
<b>Storage Temp:</b> -40 to 160°F (-40 to 71°C)	
<b>Operating Temp:</b> 0 to 160°F (-18 to 71°C)	
Electrical	
<b>Batteries:</b> (2) C alkaline; 8000 hours typical or (2) lithium batteries; 12,000 hours typical	
<b>External Power:</b> 9-28 VDC	
<b>Display Type:</b> 5 digit LCD, 0.68 in. digits	
<b>Display Resolution:</b> 1 part in 10000	
<b>Low Battery Detection:</b> Battery level indicator with 25% increments	
<b>Adjustments:</b> Auto Zero, Tare	
<b>Auto-Off:</b> Menu selectable 2, 4, 8, 16, 32 minutes (not available with options L1, L3 or L4), Light sensor on/off	
<b>Relays (Optional):</b> Two isolated solid-state relays (120 mA max; 240 V AC/DC max) (not available with options L0, L1 or L2) or two mechanical relays (1 A max @ 24 VDC)	
Physical	
<b>Weight:</b> 1.6 lb.	
Construction Materials	
<b>Case:</b> Weather-resistant injected-molding phenolic	
<b>Wetted Materials:</b> 316L SS: Up to 10,000 psi	
<b>8 Pin Connector:</b> Male IP67/68 rated bayonet	
<b>8 Pin Mating Connector:</b> Female IP67/68	
<b>Process Cavity Volume:</b> 0.07 <sup>3</sup> 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 <sub>2</sub> O	mmHg	mbar	

Choices available for pressures greater than 100 psi:

psi	kPa	cmHg	bar
MPa	ftH <sub>2</sub> O	kgcm <sup>2</sup>	

Consult the factory for custom units of measure.

## ■ Electrical Specifications

### L1: 4-20 mA Output

<b>Input Voltage (Excitation):</b> 9 VDC min (no load) to 28 VDC max
<b>Input Current:</b> 3-30 mA max
<b>Output:</b> 4-20 mA ±0.16 mA at set points
<b>Output/Input:</b> 2 wire loop powered
<b>Resolution:</b> 14 bit
<b>Protection:</b> 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.

### L2: 0-2 VDC Output

<b>Input Voltage (Excitation):</b> Battery powered
<b>Output:</b> Zero set point is ±0.15 V with a 2 VDC span ±0.02 VDC
<b>Output/Input:</b> 2 wire
<b>Resolution:</b> 14 bit

### L3: 0-5 VDC Output

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

## ■ Common Pressure Ranges

Range Option	Range	Unit of Measure	Display Resolution
5	0 to 5	psi	0.01
15	0 to 15	psi	0.01
30	0 to 30	psi	0.01
50	0 to 50	psi	0.01
60	0 to 60	psi	0.01
100	0 to 100	psi	0.01
200	0 to 200	psi	0.01
300	0 to 300	psi	0.1
500	0 to 500	psi	0.1
1000	0 to 1000	psi	1
2000	0 to 2000	psi	1
3000	0 to 3000	psi	1
5000	0 to 5000	psi	1
10000	0 to 10000	psi	1

Other ranges available.

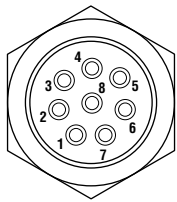
## ■ Linear Accuracy Chart

Full Scale Display	Display Resolution	Standard Linear Accuracy	Accuracy Options
≥ 15.00 but < 20.00	0.01	0.25%	NO, N1
≥ 20.00 but ≤ 100.00	0.01	0.25%	NO, N1, N2
> 100.0 but < 200.0	0.1	0.25%	NO, N1
≥ 200.0 but < 1,000.0	0.1	0.25%	NO, N1, N2
≥ 1,000 but < 2,000	1	0.25%	NO, N1
≥ 2,000 but ≤ 10,000	1	0.25%	NO, N1, N2

### Notes:

1. This table refers to linear accuracy for standard fittings. Contact us 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 us.

## ■ Wiring

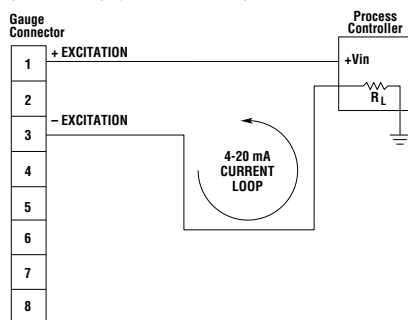


PG7 Pin Out Table

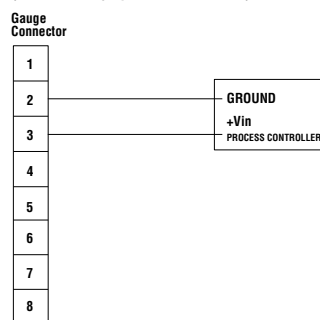
	L1	L2	L3	L4-C2	L4-C4	L5
	4-20 mA	0-2 VDC with Battery Power	0-5 VDC with External Power	2 SS Relays with External Power	2 SPDT Relays with External Power	RS-485 with External Power
1	+ Excitation	N/A	+ Excitation	+ Excitation	+ Excitation	+ Excitation
2	N/A	- Output	- Excitation	- Excitation	- Excitation	- Excitation
3	- Excitation	+ Output	+ Output	N/A	Relay 1 Com*	SS Relay 1*
4	N/A	N/A	N/A	N/A	Relay 1 NC*	SS Relay 1*
5	N/A	N/A	SS Relay 1*	SS Relay 1*	Relay 1 NO	SS Relay 2*
6	N/A	N/A	SS Relay 1*	SS Relay 1*	Relay 2 Com*	SS Relay 2*
7	N/A	N/A	SS Relay 2*	SS Relay 2*	Relay 2 NC*	RS-485 (A)
8	N/A	N/A	SS Relay 2*	SS Relay 2*	Relay 2 NO*	RS-485 (B)

\*Optional (C2 or C4) relay outputs

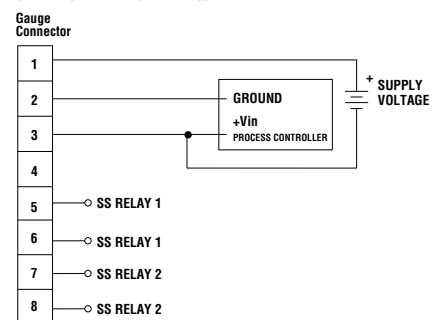
L1: Typical 4-20 mA Circuit  
(C2 & C4 relay option not available)



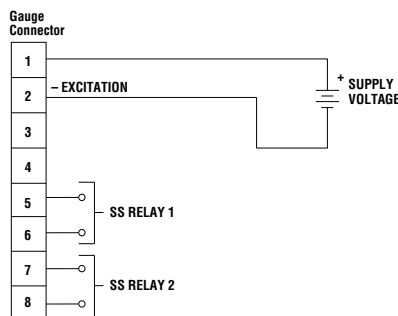
L2: 0-2 V (battery powered)  
(C2 & C4 relay option not available)



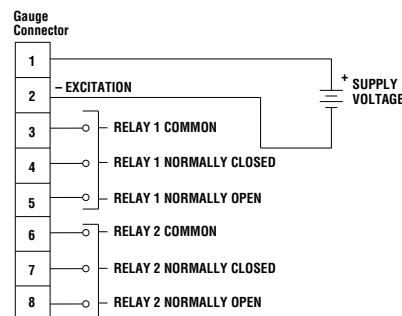
L3: 0-5 V  
(SS relays on C2 option only)



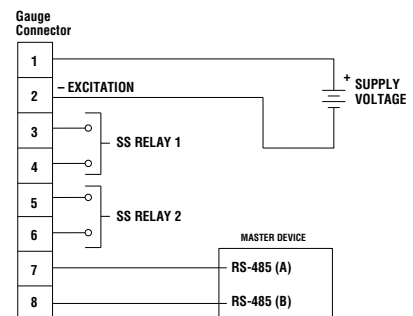
L4-C2: External Power with Dual SS Relays



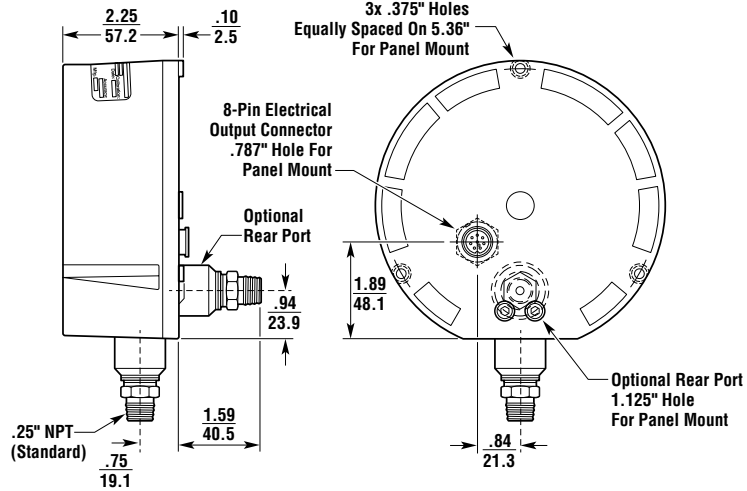
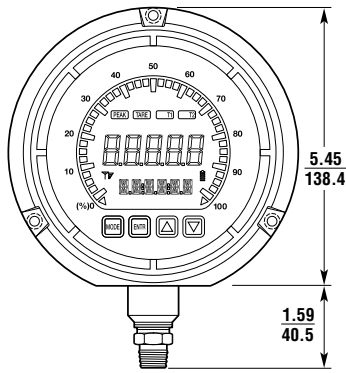
L4-C4: External Power with Dual SPDT Relays



L5: RS-485  
(SS relays on C2 option only)



## ■ Dimensions — in./mm



## ■ Option Tables

### Pressure Type Table

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

### Port Table

<b>F0</b> <sup>▲</sup>	Bottom
<b>F1</b>	Rear
<b>F2</b>	Bottom with O <sub>2</sub> clean
<b>F3</b>	Rear with O <sub>2</sub> clean
<b>F5</b>	Remote transducer with mV sensor
<b>F6</b>	Rear panel mount bracket

### Process Connection Table

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

Other options available.

<sup>▲</sup>This option is standard.

## ■ Ordering Information

PG10 - Range -						
<b>Pressure Type</b>	See Pressure Type Table					
<b>Port</b>	See Port Table					
<b>Operation</b> <sup>*</sup>						
<b>L0-E0</b> <sup>▲</sup>	(2) C alkaline batteries					
<b>L1-E35</b>	4-20 mA (loop powered) output					
<b>L2-E35</b>	0-2 VDC output; battery power					
<b>L3-E35</b>	0-5 VDC output; external power					
<b>L4-E35</b>	External power					
<b>L5-E35</b>	RS-485; external power					
<b>L7-E0</b>	Dual lithium batteries					
<b>Relays</b>						
<b>C0</b> <sup>▲</sup>	No Solid-State Relays					
<b>C2</b>	(2) Solid-State Relays with Visual Indication (L3, L4, L5 types only)					
<b>C4</b>	(2) SPDT Mechanical Relays with Visual Indication (L4 type only)					
<b>Process Connection</b>						
<b>P0-P16</b>	See Process Connection Table					
<b>Accuracy</b> (see Linear Accuracy Chart for details)						
<b>N0</b> <sup>▲</sup>	±0.25%					
<b>N1</b>	±0.25% with NIST certification					
<b>N2</b>	±0.1% with NIST certification (select ranges)					

<sup>\*</sup>Auto-off options are not available with L1-E1, L3-E1 or L4-E1.

### 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
8-pin circular mating connector (E35)	135007
8-pin circular mating connector (E35) with cable	135007-AXXX <sup>*</sup>
	(A = Specify output type: L1=1, L2 = 2, L3 = 3, L4 = 4, L5 = 5 XXX = Specify length in feet))
AC to DC external power supply	511643
Panel mount bracket with screws	512600

<sup>\*</sup>Example: 135007-1025 is a 4/20 mA output with 25 ft. cable)