

CONVECTION ENHANCED PIRANI GAUGES

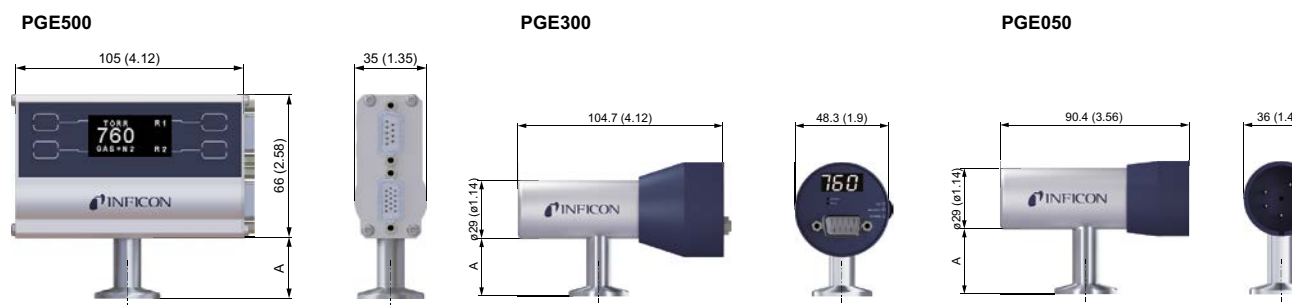
SPECIFICATIONS		PGE050, PGE300 & PGE500	
Measurement range		1.3 x 10 ⁻⁴ ... 1333 mbar 1 x 10 ⁻⁴ ... 1000 Torr 1.3 x 10 ⁻² Pa ... 133 kPa	
Accuracy (N ₂) ¹	1.3 x 10 ⁻⁴ ... 1.3 x 10 ⁻³ mbar 1.3 x 10 ⁻³ ... 530 mbar 530 ... 1333 mbar	0.1 x 10 ⁻³ mbar resolution +10 % of reading +2.5 % of reading	
	1 x 10 ⁻⁴ ... 1 x 10 ⁻³ Torr 1 x 10 ⁻³ ... 400 Torr 400 ... 1000 Torr	0.1 mTorr resolution +10 % of reading +2.5 % of reading	
Repeatability (N ₂) ¹⁾		+2% of reading	
Electrical connection	PGE300 (analog)	D-Sub, 9-pin, male	
	PGE500 (RS485, RS232, analog)	D-sub, 9-pin, male and D-sub, 15-pin HD, male (with RS485)	
	PGE500 (DeviceNet)	D-sub 9-pin, male used for setpoint relays and 5-pin Micro for power and DeviceNet interface	
Supply voltage		+12 ... +28 ²⁾	
Materials exposed to vacuum		gold-plated W (or platinum), 304 & 316 stainless steel, glass, Ni, Teflon®	
Internal volume		26 (1.589) cm ³ (in ³)	
Internal surface area		59.7 (9.25) cm ² (in ²)	
Admissible temperature	PGE050	Operation Bakeout ³⁾	0 ... +50 °C <150 °C
	PGE300	Operation Bakeout Storage	0 ... +40 °C <70 °C -40 ... +70 °C
	PGE500	Operation Bakeout (electronics removed) Storage	0 ... +40 °C <150 °C -40 ... +70 °C
Setpoint relay	PGE300	1 (single-pole double-throw relay (SPDT) 1A at 30V(dc) resistive, or V(ac) non-inductive	
	PGE500	2 (single-pole double-throw relays(SPDT) 1A at 30V(dc) resistive, or V(ac) non-inductive	

¹ Typically
² 2W protected against power reversal and transient over-voltages
³ non-operating, with electronics cable detached



DIMENSIONS

mm (inch)



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www.inficon.com reachus@inficon.com

Due to our continuing program of product improvements, specifications are subject to change without notice.
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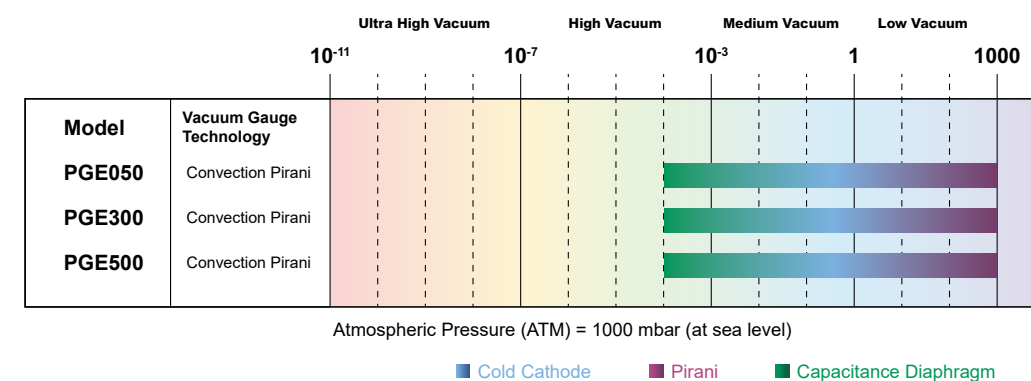
Convection Enhanced Pirani Gauges

Accurate from atmosphere to mid vacuum

INFICON
Inspired by visions. Proven by success.

Convection Enhanced Pirani Family PGE050, PGE300, PGE500

MEASUREMENT RANGE



Accurate from atmosphere to mid vacuum

The INFICON Enhanced Pirani family of vacuum gauges uses the most advanced convection enhanced Pirani sensor available on the market.

- extended measurement range from 1.3×10^{-4} to 1333 mbar
- higher accuracy (up to +/-2.5%) than conventional thermal conductivity Pirani technology

ADVANTAGES AT A GLANCE

- Convection enhanced Pirani technology for extended measurement range and accuracy.
- Active gauge versions with built-in controller, OLED and mechanical set points in 2 different versions:
 - RS232/RS485 digital interface version plus choice of analog output signals
 - DeviceNet digital interface version
- Passive gauge version PGE050 + VGC031 controller with display, mechanical set points, RS232/RS485 digital interface and choice of analog output signals.
- Designed for highest drop in compatibility. Replaces various older and current versions of MKS/Granville-Phillips® Mini-Convectron® modules (GP275)
- Platinum filament version for corrosion resistance.

APPLICATIONS

- Fore vacuum pressure monitoring
- General vacuum measurement and control from atmosphere to medium vacuum range
- RAC and Automotive

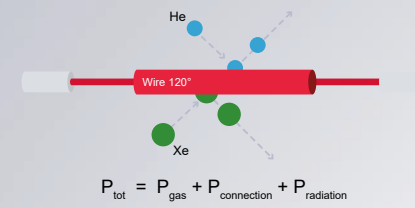
INFICON convection enhanced Pirani gauges series PGE is available in two active and one passive gauge set up.

The PGE series provides a bright and easy to read OLED display, one or two set points, different analog output signals and two different digital interfaces. PGE500 is available either with RS485/ RS232 or DeviceNet interface.

All gauges in the PGE series, PGE050, PGE300 and PGE500, carry the same superior convection enhanced Pirani sensor technology inside and are easy to set up and suited to work carefree in a wide range of semiconductor and industrial applications.

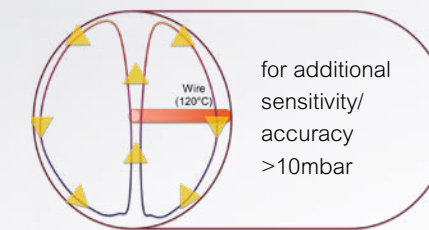
GENERAL PIRANI PRINCIPLE

The temperature will be conducted through the gas molecules. The temperature loss of the hot filament is a function of the pressure.



CONVECTION ENHANCED PIRANI PRINCIPLE

The convection enhanced Pirani allows convection current circulation within the measurement tube. The wire heats the surrounding gas causing it to rise to the top of the tube where it is cooled and returned to the bottom, simultaneously the cooler gas is drawn from the bottom, resulting in the convection circulation process. This physics results in additional sensitivity/accuracy above 10 mbar.



for additional sensitivity/accuracy >10mbar

PIRANI GAUGES CURVES



INFICON PGE050 / PGE300 / PGE500

Vacuum enclosure

Sensor wire / filament (gold plated tungsten or platinum)

Robust and simplified design – increased durability with extended warranty

Temperature compensation coils outside of the vacuum enclosure for:

- Less outgassing (due to reduced internal volume and surface area)
- Faster response time to pressure changes

PASSIVE GAUGE / CONTROLLER SET UP



ACTIVE GAUGE VERSIONS



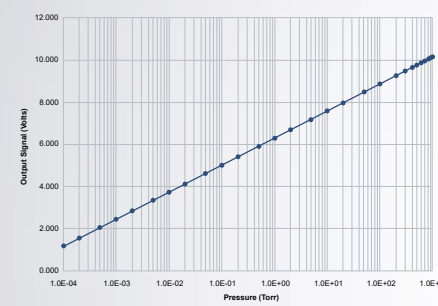
INTERFACE PGE500

- Bright OLED display
- Designed for easy operation and natural progression of set up parameters
- Four soft-keys located on front panel used to select and program various functions
- The display identifies what function key represents during programming
- Version A: RS485/ RS232 + analog output
- Version B: DeviceNet

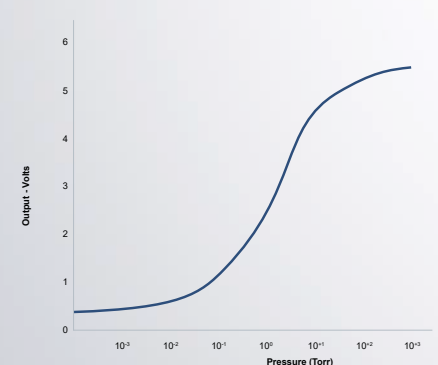


ANALOG OUTPUT SIGNALS

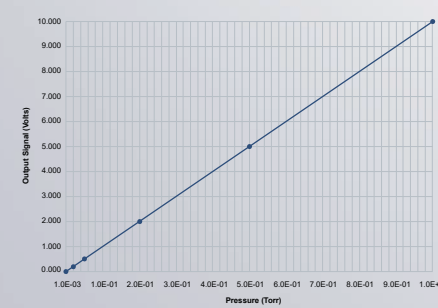
Output 0.6 to 10.23 V log-linear



Output S-Curve non-linear



Output 0 to 10 V linear



INTERFACE PGE300

Nine pin D-Sub male analog output

