



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

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



#### DIMENSIONS

mm (inch)



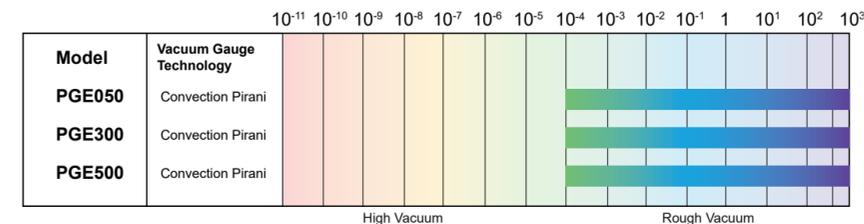
[www.inficon.com](http://www.inficon.com) [reachus@inficon.com](mailto:reachus@inficon.com)

Due to our continuing program of product improvements, specifications are subject to change without notice.  
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## Convection Enhanced Pirani Family PGE050, PGE300, PGE500

### MEASUREMENT RANGE



Atmospheric Pressure (ATM) = 760 Torr (at sea level)  
1 Torr = 1000 mTorr  
10<sup>-3</sup> Torr = 1 mTorr = 1 micron

ATM

## Convection Enhanced Pirani Gauges

Accurate from atmosphere to mid vacuum



# 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.

The convection enhanced Pirani technology provides:

- extended measurement range from  $1.3 \times 10^{-4}$  to 1333 mbar ( $1 \times 10^{-4}$  to 1000 Torr)
- higher accuracy (up to +/-2.5%) than conventional thermal conductivity Pirani technology

INFICON convection enhanced Pirani gauges series PGE is available in two

## ADVANTAGES AT A GLANCE

- Convection enhanced Pirani technology for extended measurement range and accuracy
- Active gauge versions with built-in controller with display, mechanical set points, RS232/RS485 digital interface and choice of analog output signals
- Passive gauge version PGE050 sensor + external VGC031 controller with display, mechanical set points, RS232/RS485 digital interface and choice of analog output signals

## APPLICATIONS

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

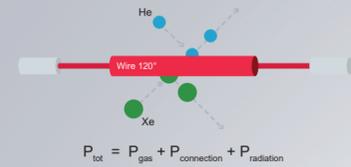
active and one passive gauge set up to serve the customer with the best suited gauge-feature package for his technical needs and budget.

The PGE series provides a bright and easy to read OLED display, one or two set points, different analog output signals and a digital RS232/RS485 interface if required.

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.

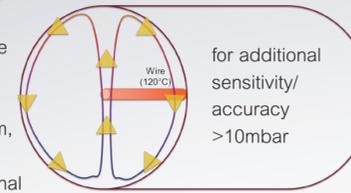
## GENERAL PIRANI PRINCIPLE

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

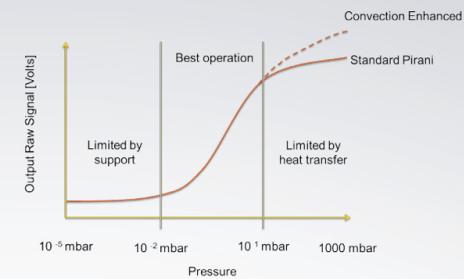


## CONVECTION ENHANCED PIRANI PRINCIPLE

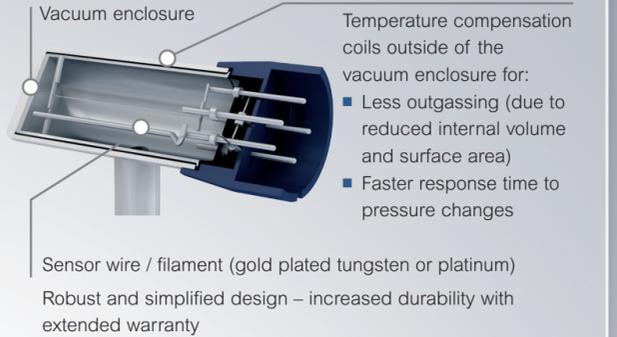
The convection enhanced Pirani allows convection current circulation within the measurement tube. The wire heats the surrounding gas causing it to rise to the top of the tube where it is cooled and returned to the bottom, simultaneously the cooler gas is drawn from the bottom, resulting in the convection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



## PIRANI GAUGES CURVES



## INFICON PGE050 / PGE300 / PGE500



## PASSIVE GAUGE / CONTROLLER SET UP



## ACTIVE GAUGE VERSIONS



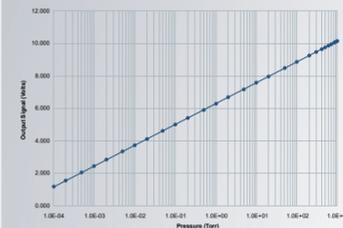
## INTERFACE PGE500

- 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
- 9 pin D-Sub male (analog output)
- 15 pin D-Sub male (RS232, RS485)

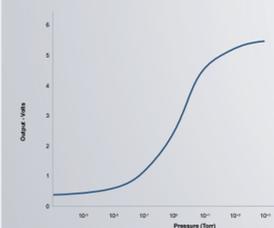


## ANALOG OUTPUT SIGNALS

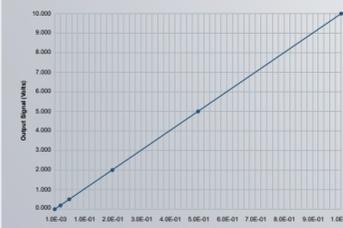
### Output 0.6 to 10.23 V log-linear



### Output S-Curve non-linear



### Output 0 to 10 V linear



## INTERFACE PGE300

Nine pin D-Sub male analog output

