

# APG200 HIGH PERFORMANCE COMPACT PIRANI GAUGE

[edwardsvacuum.com](http://edwardsvacuum.com)

**Edwards new APG200 series high performance compact Pirani Gauge is the perfect vacuum measurement solution across a spectrum of applications due to its compact size, LED light ring, integrated set points and flexibility of connections/outputs.**

Edwards production facility in the UK has been making and designing vacuum gauging for decades. With this experience we have been able to develop a gauge that has a 25% reduced package size, with no loss in performance. And by owning not only the measuring technology, but also the electronic development and manufacture we have been able to maximise the features we can offer.

With a range of upgrades and feature enhancements, the APG200 is suitable for all vacuum markets, from Analytical instruments who can take advantage of the reduced size and flexible outputs, to Semiconductor for whom the new interfaces and light rings enable better maintenance of systems, to Research and development for whom the local pressure indication helps to monitor experiments away from the main interfaces.



## Benefits

- 1** Features required around vacuum measurement have increased over the past decade. With requirements for set-points, digital interfaces and visual aids increasing our new product meets all these needs and pushes them further than ever before in such a compact package.
- 2** Every one wants a reliable vacuum process that works day in, day out, whether being used 24/7 or sporadically. Our pirani gauge measuring cell builds upon the long track record in pirani gauging to give great performance across its lifetime.
- 3** With standardisation increasingly common, having parts that can be changed or upgraded with no impact is important. That is why our digital versions of the gauges are in the same footprint as the analogue, allowing for easy upgrades.
- 4** Part of a gauges lifetime is its end of life. To ensure that you have minimum downtime and cost of ownership we have a simple model for replacement electronics and measuring cells so that when change is needed, it is easily manageable.

## Applications

### Analytical instruments

Often pushing the boundaries of what is possible with vacuum, making sure that the process is fully optimised and repeatable is key for the ongoing strive for excellence.

### Semiconductor

Famed for their harsh duties, ensuring that your Fab is running 24/7 even in these conditions is vital. Therefore strict monitoring of all parts can ensure maximum uptime.

### Medical

All kinds of medical and medical related processes rely on differing levels of vacuum at different process steps. Accurately and reliably measuring these steps is important to ensure a consistent output.

## Features

### 1 Light ring pressure indication

With our new light ring, seeing what pressure your system is at, away from the central interface is now possible

### 2 Compact size

A 25% reduction in volume compared to the APG100, without any loss in performance

### 3 Long filament

With our design we have been able to maximise the length of the filament, giving increased sensitivity and therefore responsiveness at the top and bottom of the range

### 4 Integrated filter

The integrated filter enables you to truly fit and forget as the filter rejects particles that would otherwise damage the measuring cell



### 5 Wide range power supply

Our 15-48V power input is the widest available on the market, enabling you to run these gauges on whatever power

### 6 Drop in compatible

We know the last thing you want to do is change software or carry out lengthy qualification. Therefore we have made sure that we provide variants to cover the most commonly used outputs so upgrading is even easier

### 7 Digital / Analogue

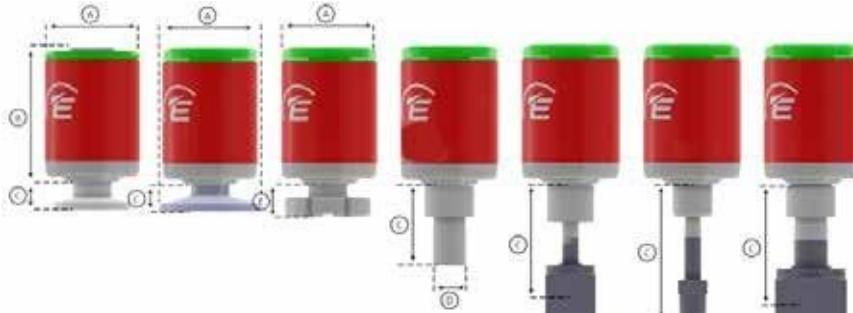
Our digital gauges sit in the same footprint as our analogue gauges, making it easy for you to upgrade at a later date should more data-collection/control be needed

### 8 Set point relay

For the first time on an Edwards gauge we have dedicated set point relays available, enabling you to trigger a wide range of knock on actions



## DIMENSIONS



NW16

NW25

DN16CF

Bare tube

4VCR

1/8''NPT

8VCR

Characteristic	Dimension (mm)			
	A	B	C	D
NW16	37	52	11	
NW25	40	52	11	
DN16CF	37	52	13	
Bare tube	37	52	30	12.7
4VCR	37	52	38	
1/8'' NPT	37	52	51	
8VCR	37	52	39	

## TECHNICAL SPECIFICATIONS

	APG200 M series	APG200 LC series	APG200 MP series
Measurement range	Atmosphere to $5 \times 10^{-4}$ mbar (Atmosphere to $3.75 \times 10^{-4}$ torr)	Atmosphere to $1 \times 10^{-4}$ mbar (Atmosphere to $7.5 \times 10^{-5}$ torr)	Atmosphere to $5 \times 10^{-4}$ mbar (Atmosphere to $3.75 \times 10^{-4}$ torr)
Accuracy	Atmosphere to 100 mbar $\pm 50\%$ 100 mbar to $1 \times 10^{-3}$ mbar $\pm 15\%$ $1 \times 10^{-3}$ mbar to $5 \times 10^{-4}$ mbar $\pm 50\%$	100 to 10 mbar $\pm 50\%$ 10 mbar to $1 \times 10^{-3}$ mbar $\pm 15\%$ $1 \times 10^{-3}$ mbar to $5 \times 10^{-4}$ mbar $\pm 50\%$	Atmosphere to 100 mbar $\pm 50\%$ 100 mbar to $1 \times 10^{-3}$ mbar $\pm 15\%$ $1 \times 10^{-3}$ mbar to $5 \times 10^{-4}$ mbar $\pm 50\%$
Repeatability	2% of reading between 100 and $1 \times 10^{-3}$ mbar	2% of reading between 10 and $1 \times 10^{-3}$ mbar	2% of reading between 100 and $1 \times 10^{-3}$ mbar
Supply voltage		15 to 48 V d.c.	
Electrical connection		RJ45/ 9 Pin D-sub	
Analogue output (D1G***1***)		0-10V	
Serial output (D1G***5***/D1G***0***)		RS232 or RS485	
Set point		0, 1, or 2 depending on model	
Range		1.8-9.2 V	
Relay contact rating		48 V dc max, 500mA	
Status indicators		360 Bright LED ring	
Max cable length		100 m	
Over pressure limit		10 Bar	
Operating temperature range		5 to 60 °C	
Storage temperature		-30 to 70 °C	
Max bake out (electronics removed)		150 °C	
Max relative humidity		80% RH up to 31 °C decreasing linearly to 50% RH at 40 °C and above	
Materials exposed to vacuum	Tungsten/Rhenium, Stainless steel 316L and 304L, Glass, Ni, NiFe, Stainless steel 302S26	Platinum/Iridium, Stainless steel 316L and 304L, Glass, Ni, NiFe, Stainless steel 302S26, PTFE	Platinum/Rhodium, Stainless steel 316L and 304L, Glass, Ni, NiFe, Stainless steel 302S26
Dead volume		3.3 CM <sup>3</sup>	
Weight (16ISO-FK)		130 grams	
Protection class		40	
Certifications		CE, UKCA	
Compatible controllers		TIC/ADC/TAG	
Customer interfaces		Single push button control	
Backwards compatibility		Yes	
Protection		Integrated filter	
Size (NW16)		63x37x37 across the flats	
Software		Labview drivers	
Output matching		Yes	
Flange		NW16/25, DV16CF, 1/8''NPT, 4VCR, 8VCR, Bare tube	
Service		Replaceable tube and electronics	

## PART NUMBER MATRIX

D1G	*	*	*	*	*	*	*
	1= Standard (M)	0 = No set point <sup>[2]</sup>	1 = NW16	1 = 0-10V	1 = RJ45	0 = Standard Linear	0 = standard
	2 = Corrosion resistant (LC)	1 = 1 Set point <sup>[3]</sup>	2 = NW25	5 = RS232 <sup>[5]</sup>	2 = 9 Pin D-Sub	5 = S matched <sup>[6]</sup>	C = Calibrated
	3 = Corrosion resistant (MP) <sup>[1]</sup>	2 = 2 set points <sup>[4]</sup>	5 = 1/8	0 = RS485 <sup>[5]</sup>		2 = 1.9 to 10.0 V <sup>[7]</sup>	
			6 = 4VCR			3 = 2.2 to 8.5V <sup>[7]</sup>	
			7 = 8VCR			4 = 1.0 to 9V <sup>[7]</sup>	
			8 = Bare tube				
			9 = DN16CF				

## Edwards - Tube

	Filament	Set point	Flange	Comms	Connector	Output	Output
ZD1G	X	A	X	A	A	A	A
	1= Standard (M)		1= NW16				
	2= Corrosion resistant (LC)		2= NW25				
	3= Corrosion resistant (MP) <sup>[1]</sup>		5= 1/8				
			6= 4VCR				
			7= 8VCR				
			8= Bare tube				
			9= DN16CF				

## Edwards - Electronic

	Filament	Set point	Flange	Comms	Connector	Output	Output
ZD1G	X	X	A	X	X	X	X
	1 = Standard (M)	0 = No set point <sup>[2]</sup>		1 = 0-10V	1 = RJ45	0 = Standard Linear	
	2 = Corrosion resistant (LC)	1 = 1 Set point <sup>[3]</sup>		5 = RS232 <sup>[5]</sup>	2 = 9 Pin D-Sub	5 = S matched <sup>[6]</sup>	
	3 = Corrosion resistant (MP) <sup>[1]</sup>	2 = 2 set points <sup>[4]</sup>		0 = RS485 <sup>[5]</sup>		2 = 1.9 to 10.0 V <sup>[7]</sup>	
						3 = 2.2 to 8.5V <sup>[7]</sup>	
						4 = 1.0 to 9V <sup>[7]</sup>	

<sup>[1]</sup> RS232/485 versions of this gauge are only available with set point<sup>[2]</sup> (select for backwards compatible - Remcal /transistor output)<sup>[3]</sup> only with RS232/485<sup>[4]</sup> only with analogue 0-10V<sup>[5]</sup> only available with 9 pin D-Sub<sup>[6]</sup> only available with "0" Set point<sup>[7]</sup> only available with "0" 0-10V output

## FREQUENTLY USED PART NUMBERS

Product description	Order no:
APG200-XM-NW16	D1G1011100
APG200-XM-NW25	D1G1021100
APG200-XLC-NW16	D1G2011100
APG200-XLC-NW25	D1G2021100

Product description	Order no:
nAPG200-XM-RS485-NW16-9 Pin DSUB	D1G1010200
nAPG200-XM-RS232-NW16-9 Pin DSU	D1G1015200
nAPG200-XLC-RS485-NW16-9 Pin DSUB	D1G2010200
nAPG200-XLC-RS232-NW16-9 Pin DSUB	D1G2015200



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