PRODUCT DATA SHEET

APG200 HIGH PERFORMANCE COMPACT PIRANI GAUGE

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. Everyone 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 managable.

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. Version without filter available for freeze drying applications



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

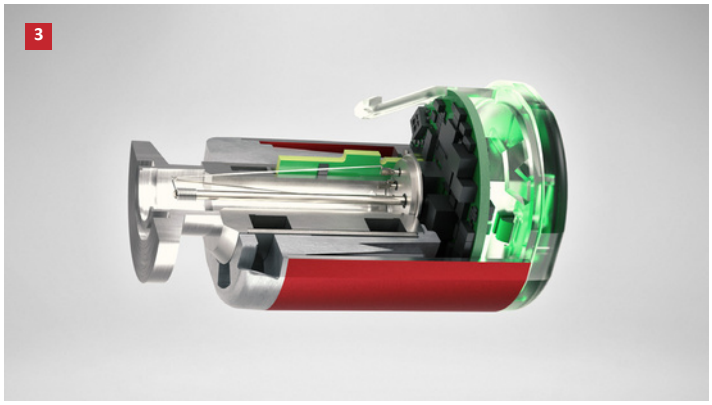
6 Drop in compatible
We know the last thing you want to do is change software or carry out lengthy qualification. Therefore we have made sure that we provide variants to cover the most commonly used outputs so upgrading is even easier

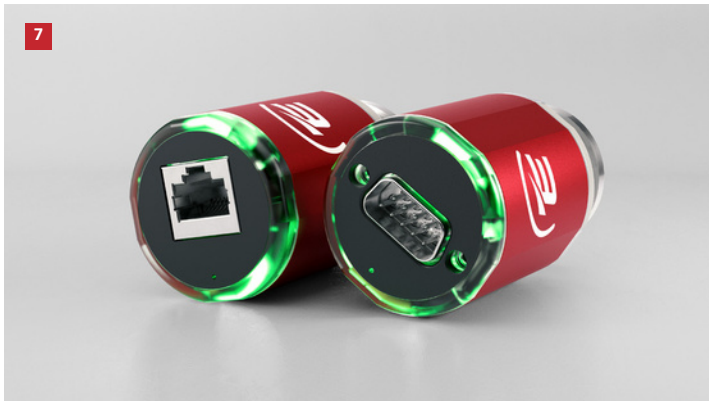
7 Digital / Analogue
Our digital gauges sit in the same footprint as our analogue gauges, making it easy for you to upgrade at a later date should more data-collection/control be needed

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

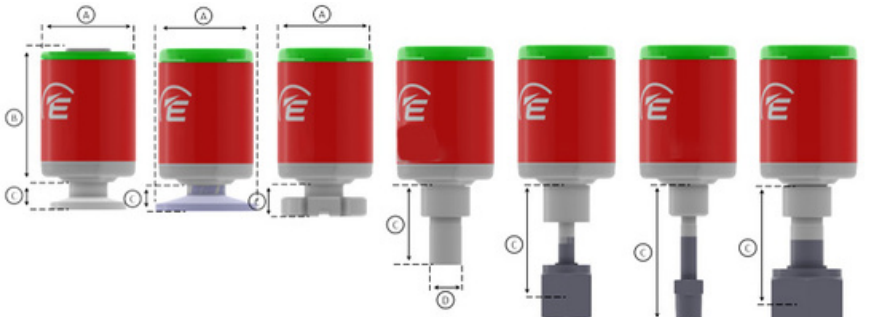








DIMENSIONS



NW16 | NW25 | DN16CF | Bare tube | 4VCR | 1/8"NPT | 8VCR

Characteristic	Dimension (mm)			
Filament / Pressure range	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 $5x10^{-4}$mbar (Atmosphere to $3.75x10^{-4}$ torr)	Atmosphere to $1x10^{-4}$ mbar (Atmosphere to $7.5x10^{-5}$ torr)	Atmosphere to $5x10^{-4}$ mbar (Atmosphere to $3.75x10^{-4}$ torr)
Accuracy	Atmosphere to 100 mbar +-50% 100 mbar to $1x10^{-3}$ mbar +-15% $1x10^{-3}$ mbar to $5x10^{-4}$ mbar +-50%	100 to 10 mbar +-50% 10 mbar to $1x10^{-3}$ mbar +-15% $1x10^{-3}$ mbar to $1x10^{-4}$ mbar +-50%	Atmosphere to 100 mbar +-50% 100 mbar to $1x10^{-3}$ mbar +-15% $1x10^{-3}$ mbar to $5x10^{-4}$ mbar +-50%
Repeatability	2% of reading between 100 and $1x10^{-3}$ mbar	2% of reading between 10 and $1x10^{-3}$ mbar	2% of reading between 100 and $1x10^{-3}$ 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 indictors	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, 304L and 302S26, Glass, Ni, Ni-Fe	Platinum/Iridium, Stainless steel 316L, 304L and 302S26, Glass, Ni, Ni-Fe, PTFE	Platinum/Rhodium, Stainless steel 316L, 304L and 302S26, Glass, Ni, Ni-Fe
Dead volume	3.3 cm^3		
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 (No filter variants available)		
Dimensions (mm) (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[2]	1 = NW16	1 = 0-10V	1 = RJ45	0 = Standard Linear	0 = standard
	2 = Corrosion resistant (LC)	1 = 1 Set point[3]	2 = NW25	5 = RS232[5]	2 = 9 Pin D-Sub	5 = S matched[6]	C = Calibrated
	3 = Corrosion resistant (MP)[1]	2 = 2 set points[4]	5 = 1/8	0 = RS485[5]		2 = 1.9 to 10.0 V[7]	
	4 = Standard (M)[8]		6 = 4VCR			3 = 2.2 to 8.5V[7]	
	5 = Corrosion resistant (LC)[8]		7 = 8VCR			4 = 1.0 to 9V[7]	
	6 = Corrosion resistant (MP)[1,8]		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)[1]		5= 1/8				
	4 = Standard (M)[8]		6= 4VCR				
	5 = Corrosion resistant (LC)[8]		7= 8VCR				
	6 = Corrosion resistant (MP)[1,8]		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[2]		1 = 0-10V	1 = RJ45	0 = Standard Linear	
	2 = Corrosion resistant (LC)	1 = 1 Set point[3]		5 = RS232[5]	2 = 9 Pin D-Sub	5 = S matched[6]	
	3 = Corrosion resistant (MP)[1]	2 = 2 set points[4]		0 = RS485[5]		2 = 1.9 to 10.0 V[7]	
						3 = 2.2 to 8.5V[7]	
						4 = 1.0 to 9V[7]	

[1] RS232/485 versions of this gauge are only available with set point
[2] (select for backwards compatible - Remcal /transistor output)
[3] only with RS232/485
[4] only with analogue 0-10V
[5] only available with 9 pin D-Sub
[6] only available with "0" Set point
[7] only available with "0" 0-10V output
[8] stainless steel filter removed, only available for NW16, NW25 and CF16 flange types

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 DSUB	D1G1015200
nAPG200-XLC-RS485-NW16-9 Pin DSUB	D1G2010200
nAPG200-XLC-RS232-NW16-9 Pin DSUB	D1G2015200

Product description	Order no
APG200-XM-FR-NW16	D1G4011100
APG200-XLC-FR-NW16	D1G5011100
APG200-XMP-FR-NW16	D1G6011100
APG200-MP-FR-NW16	D1G6011150

Publication Number: 3601 0834 01 (October)
© Edwards Limited 2024. All rights reserved Edwards and the Edwards logo are trademarks of Edwards Limited
Whilst we make every effort to ensure that we accurately describe our products and services, we give no guarantee as to the accuracy or completeness of any information provided in this datasheet.
Edwards Ltd, registered in England and Wales
No. 6124750, registered office: Innovation Drive, Burgess Hill, West Sussex, RH15 9TW, UK.