

# BPG400

## Bayard-Alpert Pirani Gauge

The INFICON Bayard-Alpert Pirani Combination Gauge, BPG400, functions as two gauges in a single compact unit measuring from  $5 \times 10^{-10}$  mbar to atmosphere ( $3.8 \times 10^{-10}$  Torr to atmosphere). Combining technologies reduces the complexity of installation, setup, and integration. Choose the BPG400 for affordable and repeatable process to base pressure measurements in one economic package.



### ADVANTAGES

- Extremely wide measurement range from  $5 \times 10^{-10}$  mbar to atmosphere ( $3.8 \times 10^{-10}$  Torr to atmosphere)
- Excellent repeatability in the process pressure range from  $10^{-8}$  ...  $10^{-2}$  mbar of 5%
- The Pirani interlock protects the Bayard-Alpert system from premature filament burnout and excess contamination from high pressure operation
- Long-life yttrium oxide coated iridium filament
- Optional graphic display and Fieldbus interfaces available
- Automatic high vacuum Pirani adjustment reduces operator interventions

### APPLICATIONS

- Pressure measurement in semiconductor process and transfer chambers
- Industrial coating
- General vacuum measurement and control in the low to ultra high vacuum range

### ORDERING INFORMATION

Type	BPG400 without LCD display	BPG400 with LCD display	BPG400-SP with Profibus DP	BPG400-SD with DeviceNet™	BPG400-SR with RS485
DN 25 ISO-KF	353-500	353-501	353-505	353-507	353-509
DN 40 CF-R	353-502	353-503	353-506	353-508	353-513
Replacement sensor 25 ISO-KF	354-490	354-490	354-490	354-490	354-490
Replacement sensor 40 CF-R	354-491	354-491	354-491	354-491	354-491

### ACCESSORIES

Power supply 24 V DC / RS232C line	353-511
Bakeout extension, 100 mm (3.94 inch)	353-510
Baffle	353-512

## SPECIFICATIONS

		BPG400 Standard	BPG400 Display
Measurement range	(air, O <sub>2</sub> , CO, N <sub>2</sub> )	mbar (Torr)	5 x 10 <sup>-10</sup> ... 1000 (3.8 x 10 <sup>-10</sup> ... 750)
Accuracy	10 <sup>-8</sup> ... 10 <sup>-2</sup> mbar	% of reading	±15
Repeatability	10 <sup>-8</sup> ... 10 <sup>-2</sup> mbar	% of reading	5
Degas <sup>1)</sup>	p < 7.2 x 10 <sup>-6</sup>	mbar	electron bombardment, max. 3 min
Pressure, max.		bar (absolute)	2
Temperature			
Operation (ambient)		°C	0 ... +50
Storage		°C	-20 ... +70
Bakeout			
At flange with extension		°C	150
At flange without extension		°C	80
Electronics removed		°C	150
Supply voltage		V / A DC	20 ... 28 / 0.8
Output signal analog		V	0 ... +10
Measurement range		V	0.774 ... 10
Voltage vs. pressure		V / Decade	0.75
Error signal		V	0.3 / 0.5
Load impedance, min.		kΩ	10
Interface (digital) <sup>2)</sup>			RS232C
Electrical connection			D-sub, 15 pin, male
Cable length, max. <sup>3)</sup>		m (ft)	100 (330)
Materials exposed to vacuum			Yt <sub>2</sub> O <sub>3</sub> , Ir, Pt, Mo, Cu, W, NiFe, NiCr, stainless steel, glass
Internal volume KF / CF		cm <sup>3</sup> (inch) <sup>3</sup>	24 (1.46) / 34 (2.1)
Weight KF / CF		g	285 / 550
Protection type			IP30

<sup>1)</sup> Reduced accuracy during degas

<sup>2)</sup> Simultaneous use of RS232C or VGC400 series controllers and Fieldbus is not allowed

<sup>3)</sup> For RS232C operation <30 m

## SPECIFICATIONS

		BPG400-SP Profibus DP
Baud rates	kBaud MBaud	9.6 / 19.2 / 93.75 / 187.5 / 500 1.5 / 12
Address		2 switches (address 00 - 127) or network programmable
Digital functions		read pressure, select units: Torr, mbar, Pa degas function, Pirani full scale adjust monitor gauge status safe state allows definition of behavior in case of error detailed alarm and warning information
Analog functions		0 ... 10 V analog output pressure indication two setpoint relays A + B
Setpoint relays		
Range	mbar	1 x 10 <sup>-9</sup> ... 100
Relay contact		n.o., potential free
Hysteresis	% of reading	10
Contact rating	V / A DC	60 / 0.5
Connector for Profibus DP		D-sub, 9 pin, female
Connector for BPG (analog output, supply voltage, setpoints)		D-sub, 15 pin, male

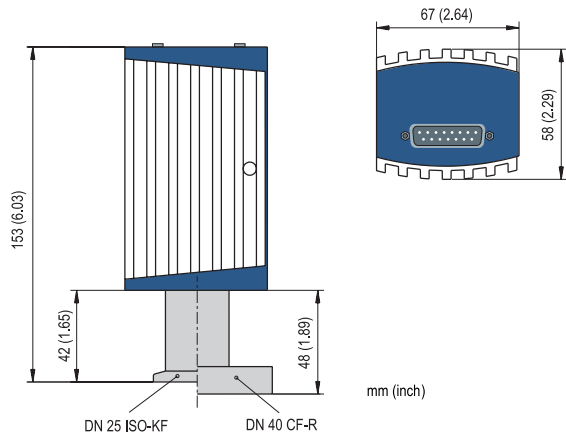
## SPECIFICATIONS

			<b>BPG400-SD DeviceNet™</b>
Protocol			DeviceNet™, group 2 slave only
Data rate switch	kBaud		125, 250, 500 or network programmable
Cable length			
125 kbps	m (ft)		500 (1650)
250 kbps	m (ft)		250 (825)
500 kbps	m (ft)		100 (330)
MAC ID			2 switches (address 00 - 63) or network programmable
Digital functions			read pressure, select units: Torr, mbar, Pa degas function, Pirani full scale adjust monitor gauge status safe state allows definition of behavior in case of error detailed alarm and warning information
Analog functions			0 ... 10 V analog output pressure indication two setpoint relays A + B
Specification			DeviceNet™ "Vacuum Gauge Device Profile"
Device type			"CG" for combination gauge
I / O slave messaging			polling only
Setpoint relays			2
Range	mbar		$1 \times 10^{-9} \dots 100$
Relay contact			n.o., potential free
Hysteresis	% of reading		10
Contact rating	V / A DC		60 / 0.5
Supply voltage for DeviceNet™	V / A DC		11 ... 25 / 0.5
Supply voltage for gauge	V / A DC		20 ... 28 / 0.8
Connector for DeviceNet™			microstyle, 5 pin
Connector for BPG (analog output, supply voltage, setpoints)			D-sub, 15 pin, male

## SPECIFICATIONS

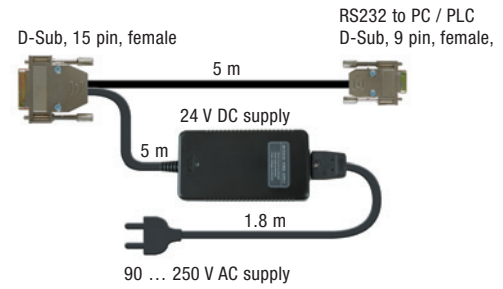
			<b>BPG400-SR RS485</b>
Baud rates	kBaud		0.3 / 1.2 / 2.4 / 4.8 / 9.6 / 19.2 / 28.8
Address			2 switches (address 00 - 127) or network programmable
Digital functions			read pressure, select units: Torr, mbar, Pa degas function, Pirani full scale adjust monitor gauge status detailed alarm and warning information
Analog functions			0 ... 10 V analog output pressure indication two setpoint relays A + B
Setpoint relays			2
Range	mbar		$1 \times 10^{-9} \dots 100$
Relay contact			n.o., potential free
Hysteresis	% of reading		10
Contact rating	V / A DC		60 / 0.5
Connector for RS485			D-sub, 9 pin, male
Connector for BPG (analog output, supply voltage, setpoints)			D-sub, 15 pin, male

## DIMENSIONS



## ACCESSORIES

### Power supply 24 V DC / RS232C line



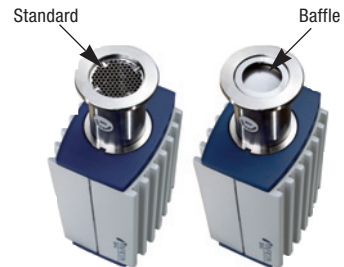
### Bakeout extension:

Allows measurement at flange temperatures up to 150°C.  
Fast and easy installation.



### Baffle:

Prevents contamination of the sensor.  
Easy installation into the vacuum connection - no tools required.



**INFICON** Instruments for Intelligent Control™

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