

BPG400

Bayard-Alpert Pirani Gauge

The INFICON Bayard-Alpert Pirani Combination Gauge, BPG400, functions as two gauges in a single compact unit measuring from 5×10^{-10} mbar to atmosphere (3.8×10^{-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 5×10^{-10} mbar to atmosphere (3.8×10^{-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
- RoHS compliance

APPLICATIONS

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

BPG400

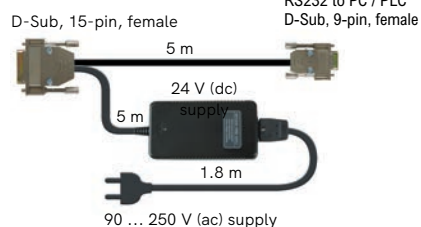
ORDERING INFORMATION

Type Sensor	BPG400 without LCD	BPG400 with LCD	BPG400 with Profibus DP	BPG400 with DeviceNet™
DN 25 ISO-KF	353-500	353-501	353-505	353-507
DN 40 CF-R	353-502	535-503	353-506	353-508

Replacement Sensor	BPG400 without LCD	BPG400 with LCD	BPG400 with Profibus DP	BPG400 with DeviceNet™
DN 25 ISO-KF	354-490	354-490	354-490	354-490
DN 40 CF-R	354-491	354-491	354-491	354-491

Accessories	Part no.
Power supply 24 V (dc) / RS232C line	353-511
Bakeout extension, 100 mm (3.94 in.)	353-510
Baffle	353-512
Centering ring with baffle DN 25 ISO-KF	211-113

Power supply 24 V (dc) / RS232C line



Bakeout extension:

Allows measurement at flange temperatures up to 150°C.
Easy installation into the vacuum connection - no tools required.



Baffle:

Prevents contamination of the sensor.
Fast and easy installation.



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SPECIFICATIONS

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

¹⁾ Reduced accuracy during degas

²⁾ Simultaneous use of RS232C or VGC40x and VGC50x series controllers and Fieldbus is not allowed

³⁾ For RS232C operation <30 m

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SPECIFICATIONS INTERFACES

DeviceNet™

Protocol	DeviceNet™, group 2 slave only
Data rate switch	125, 250, 500 kBaud or network programmable
Cable length	
125 kbps	500 m (1650 ft.)
250 kbps	250 m (825 ft.)
500 kbps	100 m (330 ft.)
MAC ID	Two 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
Visual communication indicators	LED network status (green / red) LED module status (green / red)
Specification	DeviceNet™ "Vacuum Gauge Device Profile"
Device type	"CG" for combination gauge
I / O slave messaging	Polling only
Setpoint relays	2
Range	1×10^{-9} ... 100 mbar
Relay contact	NO, potential free
Hysteresis	10 % of reading
Contact rating	60 V / 0.5 A (dc)
Supply voltage for DeviceNet™	+11 - +25 V / 0.5 A (dc)
Supply voltage for gauge	+20 - +28 V / 0.8 A (dc)
Connector for DeviceNet™	Microstyle, 5-pin
Connector for Gauges (analog output, supply voltage, setpoints)	D-Sub, 15-pin, male

PROFIBUS DP

Baud rates	9.6 / 19.2 / 93.75 / 187.5 / 500 kBaude 1.5 / 12 MBaud
Address	Two 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, filament 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

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PROFIBUS DP

Setpoint relays	2
Range	$1 \times 10^{-9} \dots 100 \text{ mbar}$
Relay contact	NO, potential free
Hysteresis	10 % of reading
Contact rating	$\leq 30 \text{ V} / \leq 0.5 \text{ A (dc)}$
Connector for Profibus DP	D-Sub, 9-pin, female
Connector for BPG (analog output, supply voltage, setpoints)	D-Sub, 15-pin, male

DIMENSIONS

