

HPG400

High Pressure Hot Ionization Pirani Gauge

The INFICON High Pressure Hot Ionization Pirani Gauge, HPG400, combines High Pressure Hot Ionization and Pirani sensors in a single, compact, economical package to measure pressure from 2×10^{-6} mbar to atmosphere (1.5×10^{-6} Torr to atmosphere). The HPG400 provides highly repeatable and reproducible pressure measurement for accurate sputter process pressure control.

ADVANTAGES

- HPG400 saves cost and tool space and reduces the complexity of vacuum system installation and setup
- The high pressure hot ion gauge delivers accurate, reliable pressure measurements from 1×10^{-5} ... 1 mbar for improved process control
- User selectable hot ion emission activation between 5×10^{-2} and 1 mbar
- Pirani interlock protects the hot filament from premature burnout
- Optional graphic display and Fieldbus interfaces available
- Automatic high vacuum Pirani adjustment reduces operator interventions

APPLICATIONS

- Sputter applications in semiconductor manufacturing, electronics and media industry
- Industrial coating
- General vacuum measurement and control in the low to high vacuum range



ORDERING INFORMATION

Type	HPG400 without LCD display	HPG400 with LCD display	HPG400-SP with Profibus DP ¹⁾	HPG400-SD with DeviceNet ¹⁾
DN 25 ISO-KF	353-520	353-521	353-525	353-527
DN 40 CF-F	353-522	353-523	353-526	353-528
Replacement sensor 25 ISO-KF	354-487	354-487	354-487	354-487
Replacement sensor 40 CF-F	354-488	354-488	354-488	354-488

¹⁾ not available with LCD display

ACCESSORIES

Power supply 24 V DC / RS232C line

353-511

SPECIFICATIONS

		HPG400 Standard	HPG400 Display
Measurement range (air, N ₂)	mbar (Torr)	2 x 10 ⁻⁶ ... 1000	(1.5 x 10 ⁻⁶ ... 750)
Accuracy	10 ⁻⁵ ... 1 mbar	% of reading	±15 ¹⁾
Repeatability	10 ⁻⁵ ... 10 ⁻¹ mbar	% of reading	2
	10 ⁻¹ ... 100 mbar	% of reading	30
Hot ion emission on, selectable	mbar	1	
	mbar	5 x 10 ⁻¹	
	mbar	2 x 10 ⁻¹	
	mbar	1 x 10 ⁻¹	
	mbar	5 x 10 ⁻²	
Pressure, max.	bar (absolute)	5	
Temperature			
Operation (ambient)	°C	0 ... +50	
Storage	°C	-20 ... +70	
Bakeout			
At flange	°C	80	
Electronics removed	°C	150	
Supply voltage	V / A DC	20 ... 28 / 0.8	
Output signal analog			
Measurement range			
Hot cathode	V	1.5 ... 7.5	
Pirani	V	8.5 ... 9.75	
Voltage vs. pressure			
Hot cathode	V / Decade	1	
Pirani	V / Decade	0.25	
Error signal			
Hot cathode	V	0.3	
Pirani	V	0.5	
Load impedance, min.	kΩ	10	
Interface (digital) ²⁾		RS232C	
Electrical connection		D-sub, 15 pin, male	
Cable length, max. ³⁾	m (ft)	100 (330)	
Materials exposed to vacuum		Yt ₂ O ₃ , Ir, Pt, Mo, Cu, W, NiFe, NiCr, stainless steel, glass	
Internal volume KF / CF	cm ³ (inch) ³	20 (1.2) / 30 (1.8)	
Weight KF / CF	g	430 / 695	
Protection type		IP30	

¹⁾ Accuracy from 10⁻⁵ mbar to the selected hot ion emission on value

²⁾ Simultaneous use of RS232C or VGC400 series controllers and Fieldbus is not allowed

³⁾ For RS232C operation <30 m

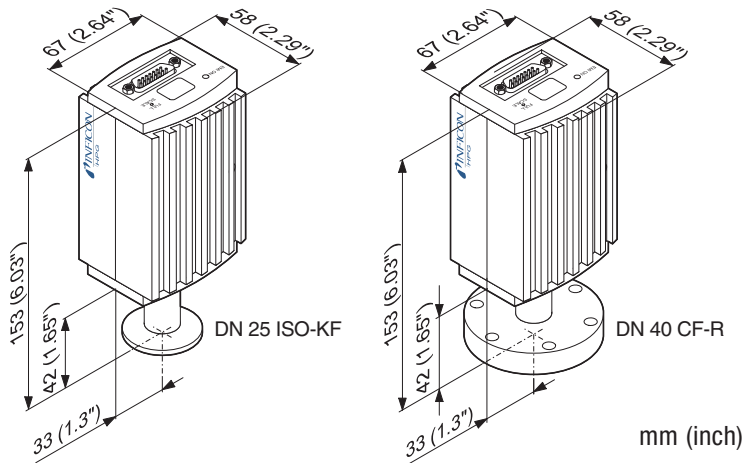
SPECIFICATIONS

			HPG400-SD DeviceNet™
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
Network size			up to 64 nodes per segment
Digital functions			read pressure, select units: Torr, mbar, Pa 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	mbar		$2 \times 10^{-6} \dots 100$
Relay contact			n.o., potential free
Hysteresis	% of reading		10
Contact rating	V DC / A		60 / 0.5
Supply voltage for DeviceNet™	V DC / A		11 ... 25 / 0.5
Supply voltage for gauge	V DC		20 ... 28
Connector for DeviceNet™			microstyle, 5 pin
Connector for HPG (analog output, supply voltage, setpoints)			D-sub, 15 pin, male

SPECIFICATIONS

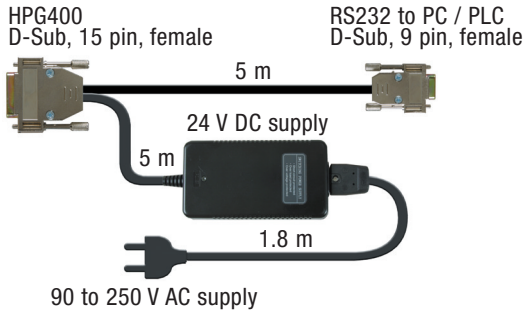
			HPG400-SP Profibus DP
Baud rates	kBaud MBaud		9.6 / 19.2 / 93.75 / 187.5 / 500 1.5 / 12
Address			2 switches (address 00 - 127) or network programmable
Digital functions			read pressure, select units: Torr, mbar, Pa Pirani full scale adjust monitor gauge status safe state allows definition of behavior 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			2
Range	mbar		$1 \times 10^{-6} \dots 100$
Relay contact			n.o., potential free
Hysteresis	% of reading		10
Contact rating	V DC / A		60 / 0.5
Connector for Profibus DP			D-sub, 9 pin, female
Connector for HPG (analog output, supply voltage, setpoints)			D-sub, 15 pin, male

DIMENSIONS



ACCESSORIES

Power supply 24 V DC / RS232C line



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Visit our website for contact information and other sales offices worldwide. www.inficon.com
Due to our continuing program of product improvements, specifications are subject to change without notice.
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