

VGC083A, VGC083B, VGC083C

Vacuum Gauge Controller



The INFICON Vacuum Gauge Controller VGC083 is designed for use with passive gauge heads BAG05x or MAG0x0 and PGE050 in a fixed combination of two PGE050 gauges and one BAG05x or MAG0x0 gauge. The VGC083 controls and monitors vacuum pressure from ATM down to 2.7×10^{-11} hPa | mbar using the BAG and PGE gauges. Six (6) single-pole relays assignable to any of the gauge heads along with RS232 and RS485 interfaces aid in system integration. The rugged industrial design of the VGC083 in combination with the passive gauge heads provide a reliable and economical system for vacuum applications requiring a wide vacuum measurement range.

ADVANTAGES

- Simple operation with special OLED display for parameter, sensor or general settings with softkeys
- Very bright and clear LED display for long distance vacuum pressure read-out
- Three analog outputs, user assignable to any of the gauges
- Degas electron bombardment or I²R resistive heating for gauge conditioning depending on gauge head type
- Remote digital I/O sensor & emission on/of
- Sensor 1 can be automatically turned on/off from sensor 2 or 3
- Three definable setpoints per channel with adjustable hysteresis
- RS232 / RS485 serial communication
- 6 assignable single pole double through setpoint relays
- Ion gauge overpressure protection
- Alternative active gauge use
- User selectable filament
- Direct drop in replaces Granville-Phillips® 307 Bayard-Alpert Gauge Controller

ORDERING INFORMATION

Type	VGC083A	VGC083B	VGC083C
Vacuum Gauge Controller	399-700	399-701	399-702
Power supply VGC083x	399-710	399-711	399-711
Rack mount adapter one VGC083x		399-714	
Rack mount adapter two VGC083x		399-715	

CONTROLLER CONFIGURATION

VGC083A



BAG050

OR



BAG055

PLUS



2 × PGE050

VGC083B



BAG051

OR



BAG052
BAG053

PLUS



2 × PGE050

VGC083C



MAG050

OR



MAG060

PLUS



2 × PGE050

SPECIFICATIONS

Type		VGC083A	VGC083B	VGC083C
Measurement channels		3	3	3
Display		LED – 3 independent pressure display channels		
Pressure indication		OLED		
Programming & set-up screen				
Connectable gauges with display range				
PGE050	hPa mbar Torr	1.3×10 ⁻⁴ ... 1333 1×10 ⁻⁴ ... 1000	1.3×10 ⁻⁴ ... 1333 1×10 ⁻⁴ ... 1000	1.3×10 ⁻⁴ ... 1333 1×10 ⁻⁴ ... 1000
BAG050	hPa mbar Torr	2×10 ⁻¹¹ ... 1.3×10 ⁻³ 2×10 ⁻¹¹ ... 1×10 ⁻³	– –	– –
BAG051	hPa mbar Torr	– –	4×10 ⁻¹⁰ ... 1333 4×10 ⁻¹⁰ ... 1000	– –
BAG052, BAG053	hPa mbar Torr	– –	4×10 ⁻¹⁰ ... 1333 4×10 ⁻¹⁰ ... 1000	– –
BAG055	hPa mbar Torr	1.3×10 ⁻⁹ ... 6.7×10 ⁻² 1×10 ⁻⁹ ... 5×10 ⁻²	– –	– –
MAG050	hPa mbar Torr	– –	– –	2×10 ⁻⁹ ... 5×10 ⁻³ 1.5×10 ⁻⁹ ... 3.75×10 ⁻³
MAG060	hPa mbar Torr	– –	– –	1×10 ⁻¹⁰ ... 5×10 ⁻³ 0.75×10 ⁻¹⁰ ... 3.75×10 ⁻³
Sensor 1 over pressure protection (turns hot ion gauge off at the following factory default settings)		1×10 ⁻³ Torr at 100 µA emission current 5×10 ⁻⁴ Torr at 4 µA emission current 1×10 ⁻⁴ Torr at 10 µA emission current		cold ion
Connectors	BAG supply BAG col MAG PGE050 Remote digital I/O RS232 RS485 Analog out Analog in Relay DC power	CPC ¹⁾ BNC ¹⁾ –	CPC ¹⁾ BNC ¹⁾ – D-sub, 9 p-pin female D-sub, 9 p-pin male D-sub, 9 p-pin female D-sub, 9 p-pin male 2 pole pluggable 3 pole pluggable each 3 pole pluggable 3 pole pluggable terminal block, mating connectors included	– – SHV
Measurement unit (selectable)		hPa mbar (default), Torr, Pa		
Setpoint relays		6 single-pole double-throw relays (SPDT), user assignable to any of the gauges		
Contact rating		5 A at 30 V (dc), 5 A at 250 V (ac), resistive load		
Analog output				
IG ⁵⁾ analog output	V (dc)	0 ... 9 (log-linear, 1 V/decade)		
	V (dc)	1.7 ... 9.3 (nominal 1.8 ... 8.7 (log-linear, 0.8 V/decade)		
	V (dc)	0 ... 10 (linear, usable over 3 decades)		
Combination IG ⁵⁾ & PEG analog	V (dc)	0.5 ... 7 (log-linear, 0.5 V/decade)		
PEG analog output	V (dc)	1 ... 8 (log-linear, 1 V/decade)		
	V (dc)	0 ... 7 (log-linear, 1 V/decade)		
	V (dc)	0 ... 10 (linear, usable over 3 decades)		
	V (dc)	0.375 ... 5.659 (non-linear, S-curve usable over 3 decades)		
Interface (digital)		RS232, RS485 ²⁾		
Supply voltage (external)	V (dc)	+20 ... +28, 200 W ³⁾ / 36 W ⁴⁾	+20 ... +28, 200 W	+20 ... +28, 12 W
Operation temperature (ambiance)	°C	+0 ... +40		
Storage temperature	°C	–40 ... +70		
Humidity		0 ... 95% relative humidity, non-condensing		
Housing		aluminum housing		
Weight	kg / lb.	0.7 / 1.7		

¹⁾ Gauge cable assemblies provided by INFICON

²⁾ Command protocol compatibility with GP307

³⁾ When used with BAG050, BAG051, BAG052, BAG053

⁴⁾ When used with BAG055

⁵⁾ Ionization Gauge

CONNECTABLE GAUGES

	VGC083A	VGC083B	VGC083C
BAG050 Hot Ion Gauge			
BA nude EB-degas, DN 40 CF, dual iridium filament (Ir)	399-720	–	–
BA nude EB-degas, DN 40 CF, dual tungsten filament (W)	399-721	–	–
BAG051 Hot Ion Gauge			
BA nude I ² R, DN 40 CF, single iridium filament (Ir)	–	399-725	–
BA nude I ² R, DN 40 CF, dual iridium filament (Ir)	–	399-726	–
BA nude I ² R, DN 40 CF, dual tungsten filament (W)	–	399-727	–
BAG052 Hot Ion Gauge			
BA glass I ² R, 3/4" Kovar metal inlet port , single iridium filament (Ir)	–	399-740	–
BA glass I ² R, 1" Kovar metal inlet port , single iridium filament (Ir)	–	399-741	–
BA glass I ² R, 3/4" glass inlet port , single iridium filament (Ir)	–	399-742	–
BA glass I ² R, 1" glass inlet port , single iridium filament (Ir)	–	399-743	–
BA glass I ² R, DN 25 ISO-KF , single iridium filament (Ir)	–	399-744	–
BA glass I ² R, DN 40 ISO-KF , single iridium filament (Ir)	–	399-745	–
BA glass I ² R, DN 16 CF , single iridium filament (Ir)	–	399-746	–
BA glass I ² R, DN 40 CF , single iridium filament (Ir)	–	399-747	–
BAG053 Hot Ion Gauge			
BA glass, 3/4" Kovar metal inlet port , dual tungsten filament (W)	–	399-750	–
BA glass I ² R, 1" Kovar metal inlet port , dual tungsten filament (W)	–	399-751	–
BA glass I ² R, 3/4" glass inlet port , dual tungsten filament (W)	–	399-752	–
BA glass I ² R, 1" glass inlet port , dual tungsten filament (W)	–	399-753	–
BA glass I ² R, DN 25 ISO-KF , dual tungsten filament (W)	–	399-754	–
BA glass I ² R, DN 40 ISO-KF , dual tungsten filament (W)	–	399-755	–
BA glass I ² R, DN 16 CF , dual tungsten filament (W)	–	399-756	–
BA glass I ² R, DN 40 CF , dual tungsten filament (W)	–	399-757	–
BAG055 Hot Ion Gauge			
BA, 3/4" tube , Yt ₂ O ₃ coated single iridium filament (Ir)	399-760	–	–
BA, DN 16 ISO-KF , Yt ₂ O ₃ coated single iridium filament (Ir)	399-761	–	–
BA, DN 25 ISO-KF , Yt ₂ O ₃ coated single iridium filament (Ir)	399-762	–	–
BA, DN 40 ISO-KF , Yt ₂ O ₃ coated single iridium filament (Ir)	399-763	–	–
BA, DN 16 CF-R , Yt ₂ O ₃ coated single iridium filament (Ir)	399-764	–	–
BA, DN 40 CF-R , Yt ₂ O ₃ coated single iridium filament (Ir)	399-765	–	–
BA, 8 VCR female , Yt ₂ O ₃ coated single iridium filament (Ir)	399-766	–	–
PGE050 Pirani Gauge Enhanced			
Pirani gauge, DN 16 ISO-KF , tungsten filament (W)	352-500	352-500	352-500
Pirani gauge, DN 25 ISO-KF , tungsten filament (W)	352-501	352-501	352-501
Pirani gauge, DN 40 ISO-KF , tungsten filament (W)	352-502	352-502	352-502
Pirani gauge, DN 16 CF-R , tungsten filament (W)	352-503	352-503	352-503
Pirani gauge, DN 40 CF-R , tungsten filament (W)	352-504	352-504	352-504
Pirani gauge, 4 VCR female , tungsten filament (W)	352-505	352-505	352-505
Pirani gauge, 8 VCR female , tungsten filament (W)	352-506	352-506	352-506
Pirani gauge, 1/8" NPT , tungsten filament (W)	352-507	352-507	352-507

(continued)

CONNECTABLE GAUGES (concluded)

MAG050 Cold Cathode Gauge	VGC083A	VGC083B	VGC083C
Cold Cathode Gauge, DN 25 ISO-KF , FPM sealed	–	–	399-840
Cold Cathode Gauge, DN 40 ISO-KF , FPM sealed	–	–	399-841
Cold Cathode Gauge, DN 40 CF-F , FPM sealed	–	–	399-842
MAG060 Cold Cathode Gauge			
Cold Cathode Gauge, DN 40 ISO-KF , metal sealed	–	–	399-845
Cold Cathode Gauge, DN 40 CF-F , metal sealed	–	–	399-846

ACCESSORIES

Cable to VGC083A for	BAG050 200 °C	BAG050 50 °C	BAG055 50 °C	PGE050 50 °C
3 m (9.0 ft)	399-770	399-780	399-810	399-580
8 m (25.0 ft)	399-771	399-781	399-811	399-581
15 m (50.0 ft)	399-772	399-782	399-812	399-582

Other lengths on request

Cable to VGC083B for	BAG051 200 °C	BAG051 50 °C	BAG052/053 50 °C	PGE050 50 °C
3 m (9.0 ft)	399-770	399-780	399-790	399-580
8 m (25.0 ft)	399-771	399-781	399-791	399-581
15 m (50.0 ft)	399-772	399-782	399-792	399-582

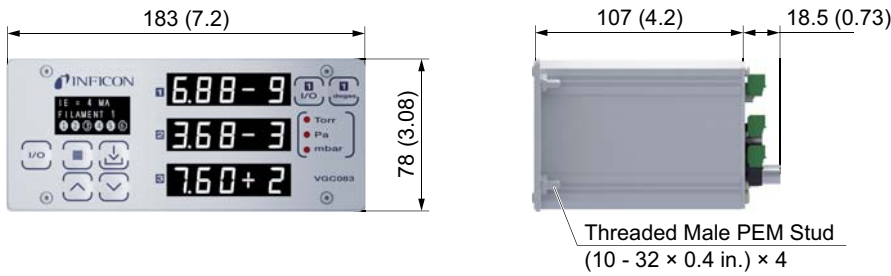
Other lengths on request

Cable to VGC083C for	MAG050/060 250 °C	MAG050/060 80 °C	PGE050 50 °C
3 m (9.0 ft)	399-830	399-820	399-580
8 m (25.0 ft)	399-831	399-821	399-581
15 m (50.0 ft)	399-832	399-822	399-582

Other lengths on request

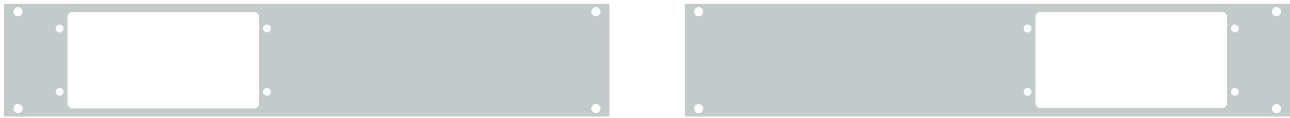
DIMENSIONS

VGC083A, VGC083B, VGC083C mm (inch)



Optional rack mount adapter for one VGC083A, VGC083B, VGC083C

Optional rack mount adapter panel (aluminum - powder paint finish) for installation of one VGC083x as a left-mount or a right-mount in a 2U, 19 inch wide rack.



Optional rack mount adapter for two VGC083A, VGC083B, VGC083C

Optional rack mount adapter panel (aluminum - powder paint finish) for installation of two VGC083x side-by-side in a 2U, 19 inch wide rack.



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Due to our continuing program of product improvements, specifications are subject to change without notice.

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