Three Channel Gauge Controller & Sensor Heads

Accurate from atmosphere to ultrahigh vacuum for demanding applications

Accurate from atmosphere to ultrahigh vacuum

The INFICON Three Channel Gauge Controller family VGC083A/B/C is designed to control and monitor vacuum pressure from atmosphere down to ultrahigh vacuum with a unique choice of different passive gauge head types,
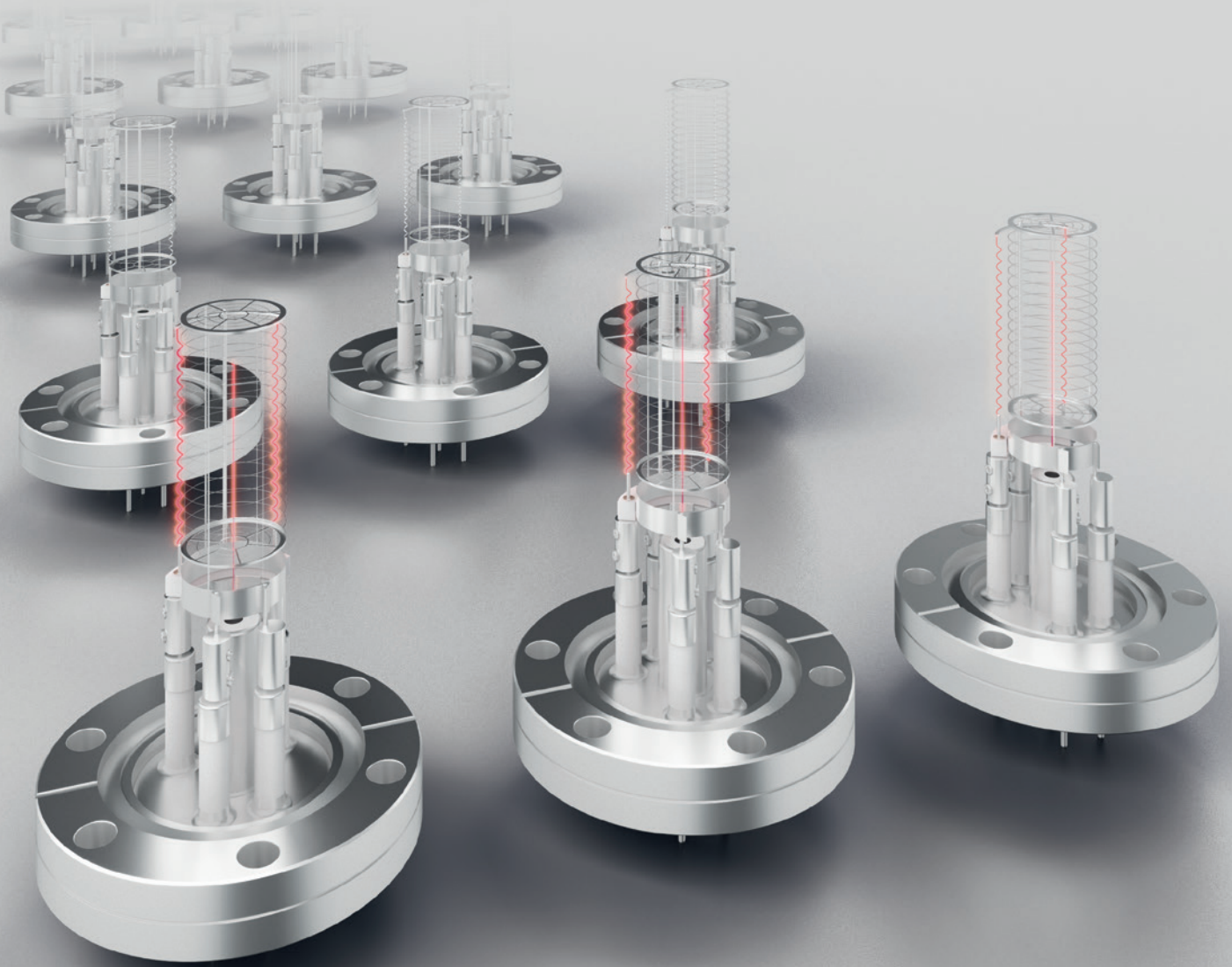
ADVANTAGES AT A GLANCE

- Simple operation with special OLED display for parameter, sensor or general settings with softkeys

- Three analog outputs, user assignable for any of the gauges with different selectable output curves

- Sensor 1 ionization gauge can be automatically turned on/off from sensor 2 or 3

- Remote digital I/O sensor and emission on/off

- Free definable setpoints per sensor channel with adjustable hysteresisi

- 6 assignable single pole double throw setpoint relays

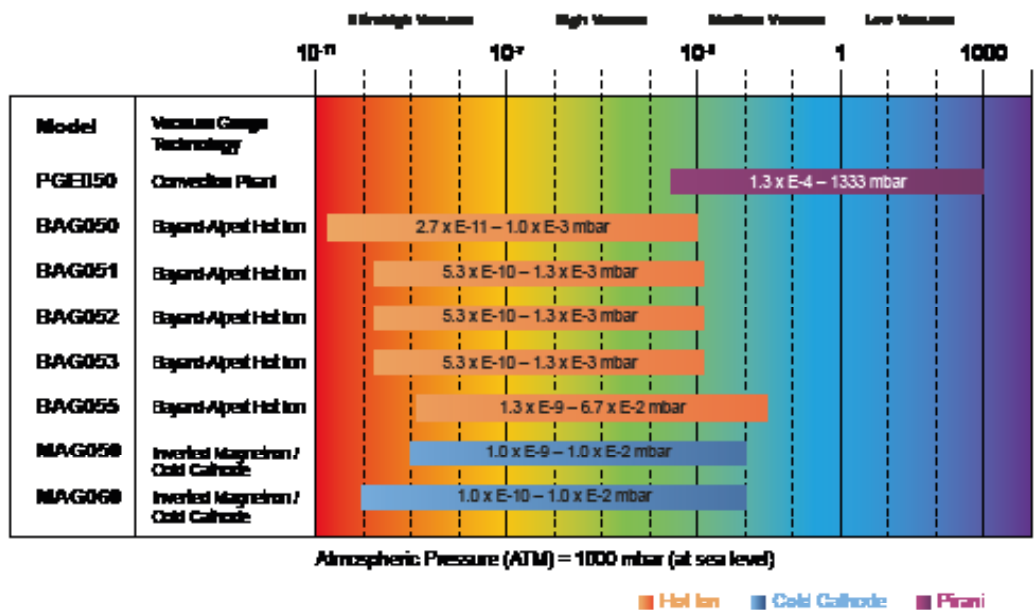- Compact space saving half rack design

reaching from Convection Enhanced Piranis to different Bayard-Alpert Hot Ionization and Cold Ionization sensor heads. The controller family VGC083A/B/C supports up to 8 different passive gauge sensor heads.
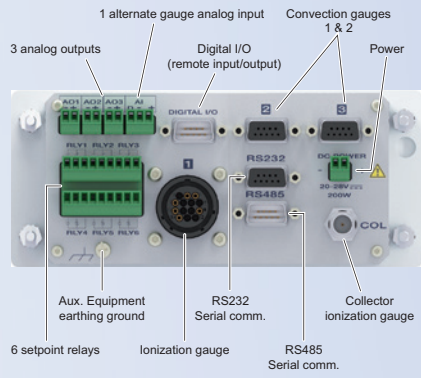
Passive Vacuum Sensor Heads
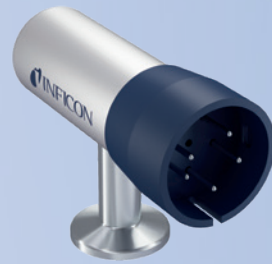# PGE050, BAG05x, MAG050/060

MEASUREMENT RANGE

Model	Vacuum Gauge Technology	Measurement Range
PGE050	Convection Pirani	1.3 x E-4 – 1333 mbar
BAG050	Bayard-Alpert Hot Ion	2.7 x E-11 – 1.0 x E-3 mbar
BAG051	Bayard-Alpert Hot Ion	5.3 x E-10 – 1.3 x E-3 mbar
BAG052	Bayard-Alpert Hot Ion	5.3 x E-10 – 1.3 x E-3 mbar
BAG053	Bayard-Alpert Hot Ion	5.3 x E-10 – 1.3 x E-3 mbar
BAG055	Bayard-Alpert Hot Ion	1.3 x E-9 – 6.7 x E-2 mbar
MAG050	Inverted Magnetron / Cold Cathode	1.0 x E-9 – 1.0 x E-2 mbar
MAG060	Inverted Magnetron / Cold Cathode	1.0 x E-10 – 1.0 x E-2 mbar

Atmospheric Pressure (ATM) = 1000 mbar (at sea level)

Hot Ion   Cold Cathode   Pirani

ELECTRICAL CONNECTIONS

3 analog outputs

1 alternate gauge analog input

Digital I/O (remote input/output)

Convection gauges 1 & 2

Power

DIGITAL I/O

RS232

RS485

COL

Aux. Equipment earthing ground

RS232 Serial comm.

Collector ionization gauge

6 setpoint relays

Ionization gauge

RS485 Serial comm.

PASSIVE CONVECTION ENHANCED PIRANI GAUGE HEADS

- Less outgassing
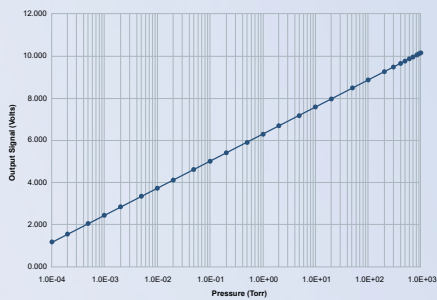- Fast response
- Robust design
- Gold plated tungsten

POSSIBLE SET-UPS

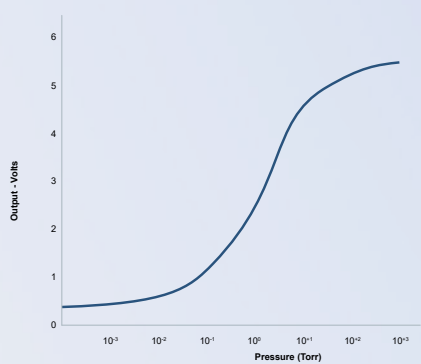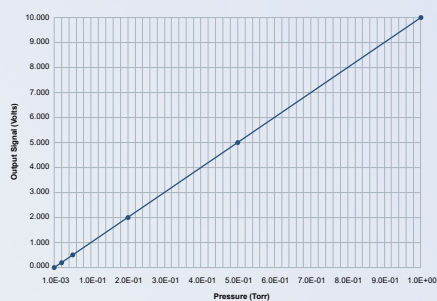| VGC083A	BAG050	or	BAG055	plus	2x PGE050
VGC083B	BAG051	or	BAG052/BAG053	plus	2x PGE050
VGC083C	MAG050	or	MAG060	plus	2x PGE050

ANALOG OUTPUT SIGNALS

Output 0.6 to 10.23 V log-linear

Output S-Curve non-linear

Output 0 to 10 V linear

PASSIVE COLD CATHODE GAUGE HEADS MAG050/060

- Gauge ignition aid
- Internal elastomer seal or full metal sealed
- Simplified cleaning through easy gauge disassembly
- Bakeout up to 250°C
- Radiation resistant up to 10^5 Gy

COMPACT ION GAUGE BAG055

- Dual Yt_2O_3 coated iridium filament
- High ± 15% accuracy
- Bakeout 200°C
- Repeatability N_2 ±5%
- Compact size

IE = 4 MA
FILAMENT 1
① ② ③ ④ ⑤ ⑥

INFICON

6.88-9

3.68-3

7.60+2

Torr
Pa
mbar

VGC083

PASSIVE HOT ION NUDE GAUGE BAG050/051

- Electron bombardement-degas
- ± 20% accuracy
- low pressure measurement down to 2 x 10^{-11} Torr
- Bakeout 450°C

BAG050   BAG051

PASSIVE HOT ION GLASS GAUGE HEADS BAG052/053

- Electron bombardement-degas
- ±20% accuracy
- Bakeout 450°C

PASSIVE VACUUM GAUGE CONTROLLER & SENSOR HEADS

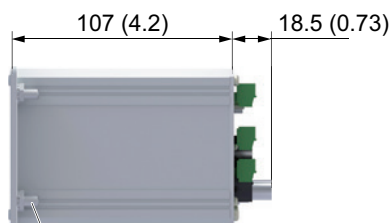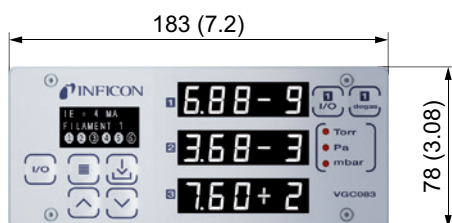| SPECIFICATIONS		VGC083A	VGC083B	VGC083C
Measurement channels		3		
Display	Pressure indication	LED - 3 independent pressure display channels		
	Programming & set-up screen	OLED		
Connectable gauges		PGE050, BAG050, BAG055	PGE050, BAG051, BAG052, BAG053	PGE050, MAG050, MAG060
Sensor 1 overpressure protection		Hot Ion / Cold Cathode sensor turns off if pressure exceeds maximum allowable pressure		
Interface (digital)		RS232, RS485[1], Analog out 0-10V		
Relay	Setpoint	6 relays free assignable to the used gauges		
	Contact rating	5 A at 30 Vdc, 5 A at 250 Vac		
Supply voltage (external)		+20 … +28, 200 W[2] / 36 W[3]	+20 … +28, 200 W	+20 … +28, 12 W
Temperature	Operation (ambient)	0 … +40 °C		
	Storage	-40 … +70 °C		
Humidity		0 … 95% relative humidity, non-condensing		
Housing		aluminum housing		
Weight		0.7 kg / 1.7 lb		

- Command protocol compatibility with GP307

- When used with BAG050, BAG051, BAG052, BAG053

- When used with BAG055

CE

DIMENSIONS

mm (inch)

VGC083

183 (7.2) 78 (3.08) 107 (4.2) 18.5 (0.73)

Threaded Male PEM Stud
(10 - 32 × 0.4 in.) × 4

INFICON Inspired by visions. Proven by success.