

NGC3 Ion Gauge Controller

UHV Dual Bayard-Alpert Ion Gauge Controller

The NGC3 is a high-accuracy Ion Gauge controller that offers integrated pressure measurement and process control with a large, clear display, an intuitive user interface and serial communications.

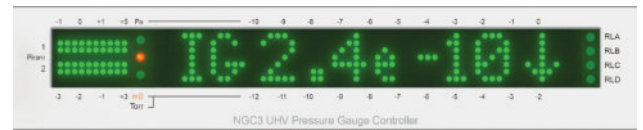


- Continuous measurement range: 1200 mBar to 3×10^{-11} mBar
- Control 2 Ion gauges (sequentially), 1 Active gauge and 2 AML legacy Pirani gauges
- Bright green LED display; measurements are easy to read. Assignable custom gauge labels
- Multiple Ion gauge modes, including start/stop and interlock based on Active or Pirani gauge pressure
- 1U high full-width for easy rack-mounting
- Display pressure in mBar, Torr or Pascal, or Ion current in Amps
- Password protection feature; prevent inadvertent changes to important setup
- Automatic or manual emission current setting; sensitivity adjustable 1 mBar^{-1} to 140 mBar^{-1}
- Manual and automatic electron-bombardment degas programs
- 4 power relays for process control
- System bake-out program with control of temperature, time and over-pressure limit. Integral K-thermocouple amplifier
- RS-232C interface for data-logging and control, 1.0 volt/decade Recorder output
- Operates from 100 V to 240 V, 48 to 65 Hz supply without adjustment

Active gauge input

Industry standard RJ45 jack for connection of most low power (24 V, 1 W max.) active gauge heads. Selectable linear or log formats.

Ideally suited for use with our AGP Active Pirani gauge head.



Ion gauge operation

Four modes of operation; Auto and Interlock use Active or Pirani gauge pressure to automatically start/stop the Ion gauge, or prevent it from starting based on Active or Pirani gauge pressure.

External inhibit allows start/stop of Ion gauge from an externally supplied logic signal.

Use manual mode to force Ion gauge on and off as required.

Serial interface

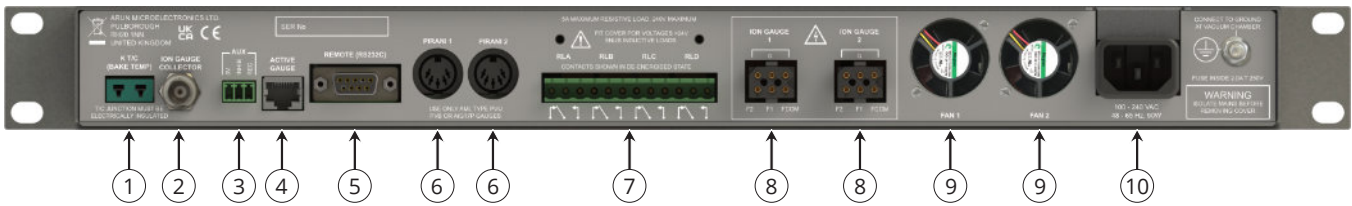
Read back pressure measurements or control the NGC3 via the easy to use serial interface. Full documentation of the protocol is provided, making it easy to integrate into your application.

Software is available for download on our website which demonstrates the interface features offered by the NGC3.

SPECIFICATIONS

Ionization Gauge				
Gauge type	AML AIG1xG are recommended. Bayard-Alpert gauges with coiled filaments from many other manufacturers are suitable without adjustment other than sensitivity.			
Range	From 1×10^{-3} to below 3×10^{-11} mBar with a UHV gaugehead with tungsten filaments. The lower limit is dependent on gaugehead, cable construction, cable length and conditions of use. The upper limit is determined by the acceptable life of the filament and may be extended by the use of thoria or yttria-coated iridium filaments.			
Accuracy and repeatability	Determined principally by the gaugehead: controller errors are much smaller. Emission at 0.5 mA is recommended.	Electrometer Logarithmic Conformance		
		Range	21°C	5°C to 35°C
		1 mA to 350 pA	<1%	<1%
		<350 pA to 10 pA	<1%	<4%
		<10 pA to 2 pA	<10%	<20%
Gauge supplies	Grid: +200 V in emission, +500 V at ≤ 60 mA in degas. Filament: +50 V bias, ≤ 12 V at ≤ 4.2 A (Tungsten), ≤ 2.6 A (Iridium) with power limited to 30 W maximum.			
Pirani Gauge				
Gauge type	AML types PVU and PVB. A constant-voltage bridge circuit reduces contamination at high pressures. AML Pirani gaugeheads may be exchanged or extension leads may be connected without adjustments being necessary.			
Active Gauge				
Gauge type	Self-powered or Active Gauge with +10 V full-scale output. Format selectable between linear (1, 10, 100, 1000 mBar or Torr full scale) or log (1 V/decade, 0.5 V at 1×10^{-6} mBar). The instrument provides a regulated +24 Vdc supply, 1 W maximum, protected by a 50 mA self-resetting fuse to power a connected Active gauge.			
Process trips				
Relays	4 x single-pole, change-over. 5 A at 240 V maximum.			
Assignment	Independently assignable to any gauge.			
Bake-out				
Thermocouple type	Mineral-insulated K-type with miniature flat-pin connector.			
Programme	Settable bake temperature (50°C to 250°C), bake time (1 hour to 90 hours) and overpressure limit.			
Communications				
Interface	RS232C			
Settings	1200, 2400, 4800 or 9600 (Default) baud, 8 data bits, 1 stop bit, no parity, no handshaking.			
General Specifications				
Pressure display	Scientific notation (1 or 2 decimal place resolution) or bar-graph displays in mBar, Torr or Pascal.			
Current display	Whole values in pA, nA, μ A and mA.			
Operating temperature	5°C to 35°C for specified performance. Incoming air temperature is measured and displayed. Operation is inhibited at >40 °C.			
Supply voltage	100 V to 240 V nominal at 48 to 65 Hz, without adjustment.			
Power consumption	<20 W idling, <75 W in emission.			
Dimensions	Width: 19" full-width rack (482.6 mm), Height: 1U (44.45 mm), Depth 270 mm.			
Weight	2.7 kg			

CHASSIS REAR PANEL



1	Thermocouple connector (K-Type)	2	Ion gauge collector connector (BNC)
3	AUX (3.5 mm pitch, 3-way terminal block)	4	Active gauge connector (8P8C RJ45)
5	Remote RS232 connector (DB-9 Female)	6	Pirani gauge connectors (5-pin DIN)
7	Relays (5.08 mm pitch, 12-way terminal block)	8	Ion gauge connectors (SMS6GE5)
9	Fans (30 mm, 12 V)	10	Input power connection (C14 IEC)

AML GAUGES

AML supplies a range of hot-cathode ionization gauges with a choice of tungsten (W), thoria coated iridium (ThO₂/Ir) or yttria coated iridium (Y₂O₃/Ir) filaments. We also offer passive Pirani and active MEMS Pirani gauges.



Bayard-Alpert Ion Gauge



Pirani Gauge



MEMS Active Pirani Gauge

ORDERING INFORMATION

Order Code	
NGC3	Ion Gauge Controller

Related Products	
AIG17G	UHV BA Ion Gauge. 2 x Tungsten filaments
AIG18G	UHV BA Ion Gauge. 2 x Thoria coated Iridium filaments
AIG19G	UHV BA Ion Gauge. 2 x Yttria coated Iridium filaments
AIGL3, 6 or 9	3, 6 or 9 metre bakeable ion gauge cable
AGP-1	Active Pirani Gaugehead
PVU3	Pirani gauge. Non-bakeable with 3 metre cable
PVB3	Pirani gauge. Bakeable with 3 metre cable
PVX10	Pirani 10 metre extension cable, non-bakeable
XAD1	AGP-1 to RJ45 adapter



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AML pursues a policy of continuous improvement and reserves the right to make detail changes to specifications without consultation. E and OE.