

# NOVA G - 6000

## Zero Air Generator

V1.0  
30/04/20



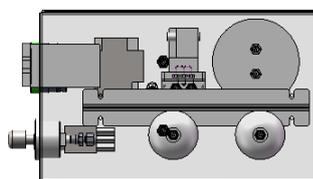
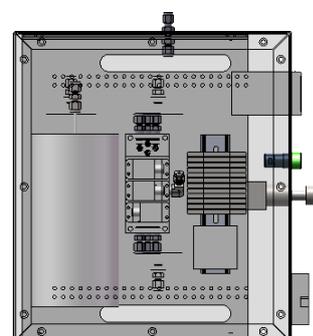
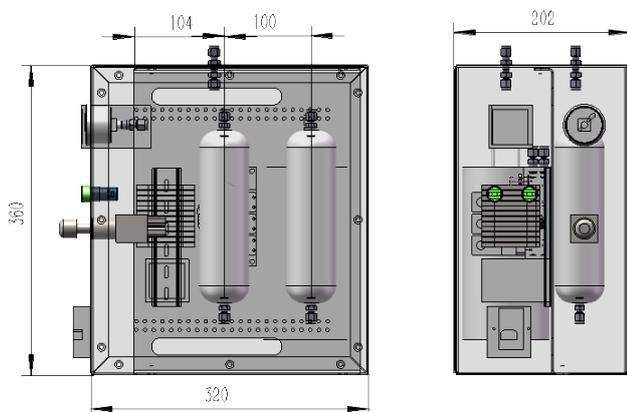
The AGC NovaG-6000 Zero Air Generator is designed for producing pure zero air, which meets the requirements of 40 CFR Part 1065. This instrument supplies a continuous source of pure air (zero air) for use in gas analysis equipment such as the renowned Flame Ionisation Detector from AGC Instruments. The NovaG-6000 is easy to install and only requires AC power and a source of compressed air. Therefore, it removes the requirement for zero air cylinders and provides a constant supply, thereby giving more control whilst reducing costs.

With a quiet operation and convenient wall mount configuration, the NovaG-6000 can seamlessly be integrated into existing operations. This will in turn, provide a steady source of Zero Air at a flow rate of up to 6 Litres per minute. Once installed and running, no consumables and servicing is required, making it a cost-effective solution for your operations.

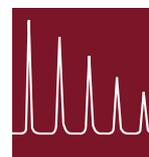
The principle of this system is both straight forward and highly effective. Air contains CnHm, CO, NOx, CO<sub>2</sub>, H<sub>2</sub>O and in order to obtain a pure zero air source, these components need to be removed to meet the needs of gas analysis instruments. Different principles and methods are used to remove different components. Firstly, CnHm, CO and NOx in compressed air are removed by means of high temperature catalysis. Then H<sub>2</sub>O and CO<sub>2</sub> are removed by molecular sieve. The end result is top quality Zero Air to satisfy a range of applications.

No.	Parameters	
1	Working Principle	Catalytic combustion & molecular sieve adsorption
2	Input Air	12 L/min @ 80 psig ± 10 psig and dew point ≤3°C
3	Output flow	Max. 6.0 L/min *
4	Output pressure	15-60 psig based on inlet pressure
5	Output Dew Point	-73°C (-100°F)
6	Maximum Outlet Concentration	0.02 ppm NO <sub>x</sub> 0.05 ppm N <sub>2</sub> O 0.05 ppm THC ( C <sub>1</sub> equivalent ) 1.0 ppm CO 10.0 ppm CO <sub>2</sub>
7	Ambient Temperature	5-45°C
8	Ambient Relative Humidity	RH<90%
9	Warm-up Time :	60 mins
10	Connections:	1/8" Swagelok® Fitting (or similar) *
11	Dimensions:	360 (H) x 320 (W) x 202 (D) mm
12	Weight:	17 Kg

\*Please see the Specifications Table for options



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## Principle of Operation

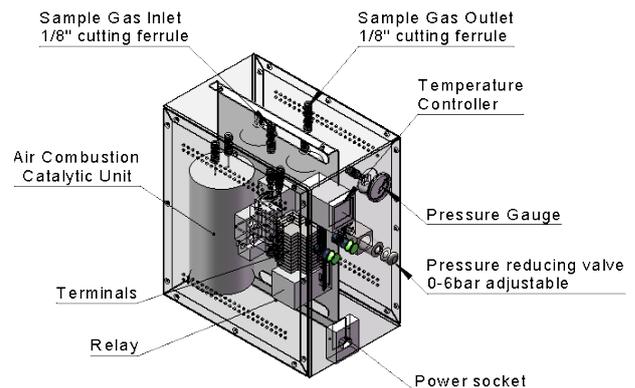
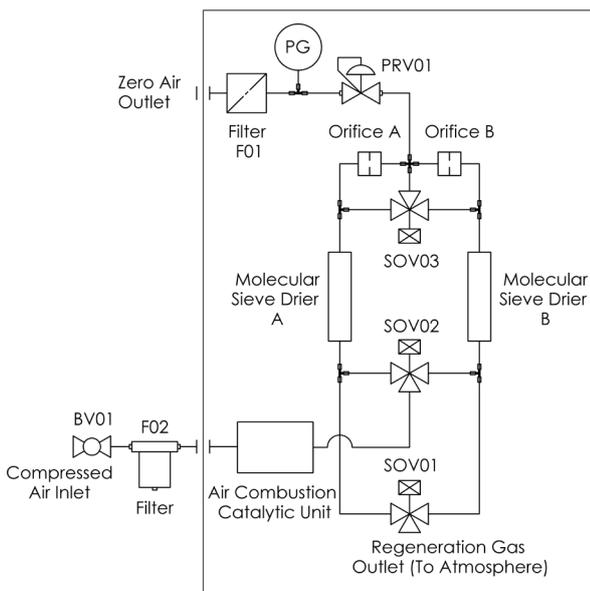
The NovaG-6000 Zero Gas Generator has a low cost of ownership with no consumables and no maintenance. It is both easy to use and simple to operate by just turning on the power supply, and then feeding the compressed air to the generator inlet which has an internal automated processing procedure. Then, the zero air outlet can be connected to the process that requires the zero air source.

The specific working principle is shown in the diagram below whereby compressed air passes through the ball valve BV01 into the filter F02 which then goes into an Air Combustion Catalytic Unit which removes the CO, total organic hydrocarbons and nitrogen oxides. Then the air is passed through the electromagnetic valve SOV02 into the Molecular Sieve Drier A, removing both H<sub>2</sub>O and CO<sub>2</sub>. The next stage is where the gas then passes through the electromagnetic valve SOV03, reducing valve PRV01, pressure gauge PG and air filter F01 to the Zero Air outlet where it exits as Zero Level Air.

Part of the zero air behind solenoid valve SOV03 enters molecular sieve drier B through Orifice B, and then flows into the atmosphere through solenoid valve SOV01, then the molecular sieve drier B is regenerated.

The Solenoid Valves SOV01, SOV02, SOV03 have a synchronous action function, using a timing switch to achieve the timing regeneration of the molecular sieve drier A and molecular sieve drier B. This ensures the uninterrupted use of the zero air generator. The air source is connected to the sample inlet, and the compressed air enters the Air Combustion Catalytic Unit. After the catalytic combustion, the compressed air enters the molecular sieve and the molecular sieve drier switches automatically when finished.

## Zero Air Generator



## Utilities

### ■ Air Requirements:

1. Air supply should be at least 80 psig ( $\pm 10$  psig) at 25 CFH (12 LPM) and have a maximum dew point of 3.0°C (37.5°F).
2. Filtration of solids, liquids, water and oil particles shall be less than 1 micron (1.0 PPM weight/weight maximum remaining oil content).

### ■ Power Requirements:

110V-120V / 220V-240V (optional).



Specification	Options
Power Supply	<ol style="list-style-type: none"> <li>110V-120V</li> <li>220V-240V</li> </ol>
Outlet Flow Regulating Device	<ol style="list-style-type: none"> <li>With Flow Meter</li> <li>Without Flow Meter</li> </ol>
Outlet Pressure Signal Transmission Device	<ol style="list-style-type: none"> <li>With outlet pressure transmitter</li> <li>Without outlet pressure transmitter</li> </ol>
Accessories	<ol style="list-style-type: none"> <li>With inlet ball valve</li> <li>Without inlet ball valve</li> <li>With inlet filter</li> <li>Without inlet filter</li> <li>With molecular sieve (water must be removed)</li> <li>Without molecular sieve (water doesn't need to be removed)</li> <li>Other requirements (user defined)</li> </ol>
Compressed Air Inlet Connection	<ol style="list-style-type: none"> <li>1/8" Swagelok® Fitting (or similar)</li> <li>1/4" Swagelok® Fitting (or similar)</li> <li>Other requirements (user defined)</li> </ol>
Zero Air Outlet Connection	<ol style="list-style-type: none"> <li>1/8" Swagelok® Fitting (or similar)</li> <li>1/4" Swagelok® Fitting (or similar)</li> <li>Other requirements (user defined)</li> </ol>
Location of Compressed Air Inlet / Zero air outlet	<ol style="list-style-type: none"> <li>Front of Box</li> <li>Rear of Box</li> <li>Top of Box</li> </ol>
Location of Power Cable Inlet and Outlet	<ol style="list-style-type: none"> <li>Front of Box</li> <li>Rear of Box</li> </ol>

\* Example: NovaG-6000-2111351111:

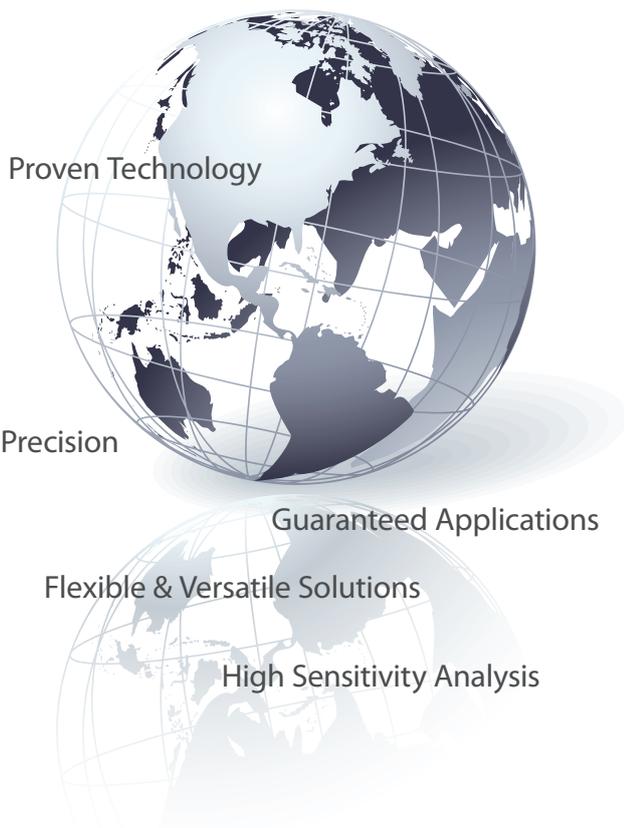
- 2 220V-240V Power Supply
- 2 Without Flow Meter control function (the maximum output flow is 6.0 NL/min)
- 1 With Outlet Pressure Transmitter with pressure gauge only
- 2 Without Inlet Ball Valve
- 4 Without Inlet Filter
- 5 With Molecular Sieve (the application must remove water)
- 1 1/8 " Swagelok® Fitting (or similar) for Compressed Air Inlet
- 1 1/8 " Swagelok® Fitting (or similar) for Zero Air Outlet
- 1 Front of the Box location for Compressed Air Inlet
- 1 Front of the Box location for the Power Cable Inlet and Outlet.

## Company Profile

### AGC Instruments Ltd.

AGC Instruments is a leading manufacturer of Gas Analysis Solutions to all users requiring a Quality Control or identification of their gas stream. We have over 50 years experience in providing our customers with their "Total Gas Analysis Solutions". We work closely with all customers to ensure they obtain the analytical solution that meets their needs and a system that is easy to use and understand. All AGC distributors are extremely experienced and factory trained to the highest standards, offering you a complete after sales support service.

The wide range of Detectors available can be customised to measure unique gas streams and we place an emphasis on the continuous development of our analytical solutions. Our worldwide reach with strategic partners ensures that you have peace of mind and after sales care that are important to your operations.



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For further information please contact:

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