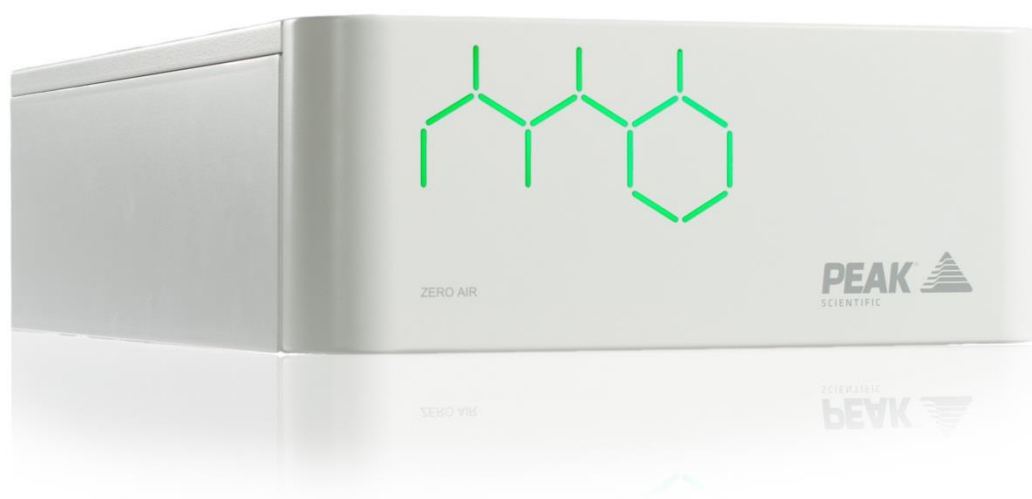


Precision Zero Air User Manual



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Change History

Rev.	Comment	Name	Date
1A	Fittings Kit Update	Liam Couttie	19/03/2015

How to use this manual

This manual is intended for end users and has been written so that it can either be read as a step by step guide to installation and usage; or as a reference document where you can skip to the relevant information.

Please review each of the following sections carefully.

Thank you for selecting Peak Scientific to meet your Gas Generation needs, should you require any further assistance or support please do not hesitate to contact Peak Scientific or the Peak Partner from which you purchased your Generator.

Introduction

Precision is a modular system with differing flow rates that allows you to add multiple generators as your gas and analysis demands change. The Precision Series will keep your gas flowing with consummate accuracy and reliability, whatever your needs, while fitting neatly into any lab space.

The Precision Zero Air Generator provides hydrocarbon free air, suitable as a Flame Support Gas at Trace and Standard detection limits.

Features include:

- Suitable for Flame Support Gas at Trace and Standard detection limits
- Generates Zero Air on demand from Compressed Air
- Catalyst chamber to remove Hydrocarbons (as methane) to <0.05ppm
- Minimum maintenance with only a filter change per annum.
- Small and Stackable




With the Precision Zero Air based on proven technology, it removes moisture and other gases to leave clean, dry, phthalate free Air.

To ensure this Generator model meets our high expectations with regards to reliability and performance, we have tested this new model extensively at our manufacturing plant and with end users around the world to ensure reliability and longevity of the system.

Safety Notices

Symbols

This manual uses the following symbols to highlight specific areas important to the safe and proper use of the Generator

	A WARNING notice denotes a hazard. It calls attention to an operating procedure, process or similar, which if not correctly performed or adhered to, could cause personal injury or in the worst case death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood or met.
	A CAUTION notice denotes a hazard. It calls attention to an operating procedure, process or similar, which if not correctly performed or adhered to, could cause damage to the Generator or the Application. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood or met.
	Caution, risk of electric shock. Ensure power to the Generator has been removed before proceeding.

Safety Notice to Users



These instructions must be read thoroughly and understood before installation and operation of your Peak Precision Zero Air Generator. Use of the Generator in a manner not specified by Peak Scientific MAY impair the SAFETY provided by the equipment.



When handling, operating or carrying out any maintenance, personnel must employ safe engineering practices and observe all relevant local health and safety requirements and regulations. The attention of UK users is drawn to the Health and Safety at Work Act 1974, and the Institute of Electrical Engineers regulations.



If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment maybe impaired.

Warranties and Liabilities

1. The Company warrants that it has title to the Goods.
2. Subject to the provisions of this clause the Company warrants that the Goods shall comply in all material respects with any specification referred to in the Order Confirmation (as the same may be amended) and shall, subject thereto, be free from defects in material and workmanship for the lesser of a period of twelve months from the date of delivery or thirteen months from the date of dispatch from the factory.
3. Save as provided in this clause and except where the Goods are sold to a person dealing as a consumer (within the meaning of the Unfair Contract Terms Act 1977) all warranties, conditions or other terms implied by statute or common law are hereby expressly excluded save to the extent they may not be lawfully excluded. When the Goods are sold to a consumer within the meaning of the Unfair Contract Terms Act 1977 their statutory rights are not affected by the provisions of this clause.
4. In the event of the Customer making a claim in respect of any defect in terms of clause 2 hereof the Customer must.
 - 4.1. Reasonably satisfy the Company that the Goods have been properly installed, commissioned, stored, serviced and used and without prejudice to the generality of the foregoing that any defect is not the direct or indirect result of lack of repair and/or servicing, incorrect repair and/or servicing, use of wrong materials and/or incorrect spare parts
 - 4.2. Allow the company to inspect the Goods and/or any installation and any relevant packaging as and when reasonably required by the Company.
5. Subject to the Company being notified of any defect as is referred to in sub-clause 2 hereof within a reasonable time of it becoming apparent and subject always to the terms of sub-clause 4 hereof, the Company shall, in its option, replace or repair the defective Goods or refund a proportionate part of the Price. The Company shall have no further liability to the Customer (save as mentioned in sub-clause 6 hereof).
6. The Company shall be liable to indemnify the Customer in respect of any claim for death or personal injury to any person in so far as such is attributable to the negligence or breach of duty of the Company or any failure by the Company to comply with the provisions of sub-clause 2 hereof.
7. Save as provided in sub-clause 2 hereof the Company shall not be liable in respect of any claim by the Customer for costs, damages, loss or expenses (whether direct, indirect, consequential or otherwise) or indemnity in any respect howsoever arising including, but not by way of limitation, liability arising in negligence (other than pursuant to clause 6 above) that may be suffered by the Customer or any third party.

2002/95/EC RoHS (Restriction of Hazardous Substances)

Peak Scientific Instruments Ltd fully complies with its obligations towards the European WEEE (Waste of Electrical and Electronic Equipment) Directive

Technical Specifications

Environment

	1500	3500
Min-Max Air Operating Temperature	5°C - 35°C / 41°F - 95°F	
Maximum Relative Humidity	70% Non-Condensing	
Maximum Altitude	2000 metres	
Min/Max Storage Temperature	-20°C - 60°C / -4°F - 140°F	

Inlet Conditions

Min/Max Air Inlet Pressure	6.2-10 bar / 90-145psi	
Minimum Air inlet Flow (l/min)	1.5	3.5
Minimum Air Quality	ISO8573-1:2010 Class 1.4.1	
Maximum Inlet CH ₄ Concentration	100ppm CH ₄	

Outlet Gas

Maximum Gas output Pressure	5.5/80 psi	
Maximum Outlet Flow Rate	1500cc	3500cc
Start-up time	60 minutes	
Outlet CH ₄ Concentration	<0.05ppm	
Particles	<0.01µm	
Phthalates	NONE	
Suspended Liquids	NONE	
Gas Outlets	1 x ¼" BSPP	
Drain Outlets	None	

Electrical Requirements

Voltage	115 VAC ±10%	230VAC ±10%
Frequency	50/60 Hz	50/60 Hz
Current	2A	1A
Input Connection	C14 Plug	
Power Cord	C13 Socket to Local Connection	
Pollution Degree	2	
Insulation Category	II	

General

Dimensions cm (inches) WxDxH	38.0 (14.9) x 54.0 (21.2) x 15.6 (6.14)
Generator Weight Kg (lbs)	16 (35)
Shipping Crate Dimensions cm(inches)	54.2(21.3) x 70.0(27.5) x 44.0(17.3)
Shipping Weight Kg (lbs)	19 (41.9)

Unpacking

Although Peak Scientific take every precaution with safe transit and packaging, it is advisable to fully inspect the unit for any sign of transit damage.

Check 'SHOCKWATCH' label for signs of rough handling prior to un-packing -



Any damage should be reported immediately to the carrier and Peak Scientific or the Peak Partner from where the unit was purchased.

Follow the unpacking instructions posted on the side of the crate. It will require one person to remove the unit from the shipping crate and lift the Generator onto the bench.

Please save the product packaging for storage or future shipment of the Generator.



After unpacking and a visual inspection, the unit should be placed in a ventilated area away from direct sunlight. Care should be taken not to obstruct the ventilation holes on the side of the unit. The Generator should be placed on a steady and level base.



Performance of the Generator (like all sophisticated equipment) is affected by ambient temperatures. Prolonged operation in temperatures exceeding 35°C will shorten the life of the unit.

Contents

Each shipping box should contain the following: -

Zero Air Generator

¼" Teflon Tubing

¼"x¼" & ¼"x⅛" Compression Fittings

UK Mains Cable

EU Mains Cable

US Mains Cable 6-15

US Mains Cable 5-15

Installation Guide- Precision Zero Air

User Manual CD- Precision Zero Air

Unpacking Instructions

The Precision Zero Air generator weights approximately 16Kg, and as such should only be lifted using safe lifting practice.

1. Remove the screws encircled in red around the bottom of the crate lid and lift upwards.
2. Next, position your hands underneath the unit on either side, ready to lift.
3. Ensuring your knees are bent and your back is straight, lift the unit to the desired location.

Installation

Generator Environment



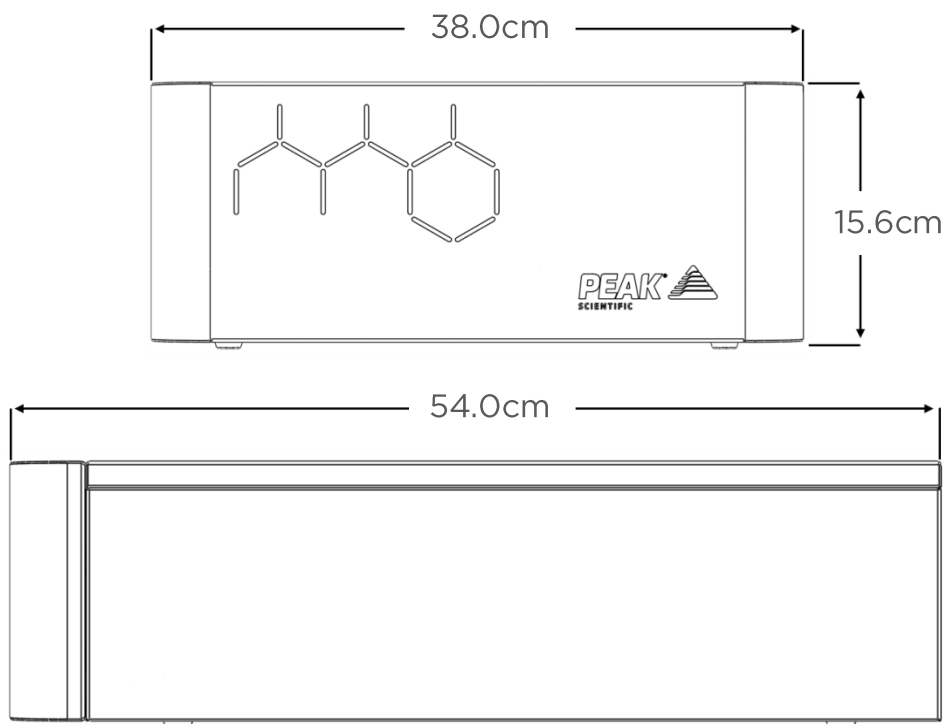
The Generator is designed for indoor use only. It should be installed adjacent to the application(s) it is supplying. If this is not convenient then the unit can be sited elsewhere, however, consideration should be made of the lengths of pipe runs as pressure drops can result from extended runs of pipe.



Performance of the Generator (like all sophisticated equipment) is affected by ambient conditions. Note should also be taken to the proximity of Air Conditioning outlets. These can sometimes give rise to “pockets” of air with high relative humidity. Operation of the unit within such a pocket could adversely affect its performance. Consideration should also be given to the air flow around the unit. It is recommended that an air gap of 75mm (3”) should be maintained down both sides and at the rear of the unit. Please refer to the drawing below for the general dimensions of the unit.

Maximum Ambient Conditions: 35°C (dry bulb) 70%RH (Max) Non-Condensing

General Dimensions



Air Purity

The Precision Zero Air Generator should be connected to an air supply that, as a minimum, meets ISO8753-1:2010 Class 1.4.1

Class 1 Particulate

In each cubic metre of compressed air, the particulate count should not exceed 20,000 particles in the 0.1 - 0.5 micron size range, 400 particles in the 0.5 - 1 micron range and 10 particles in the 1 - 5 micron size range.

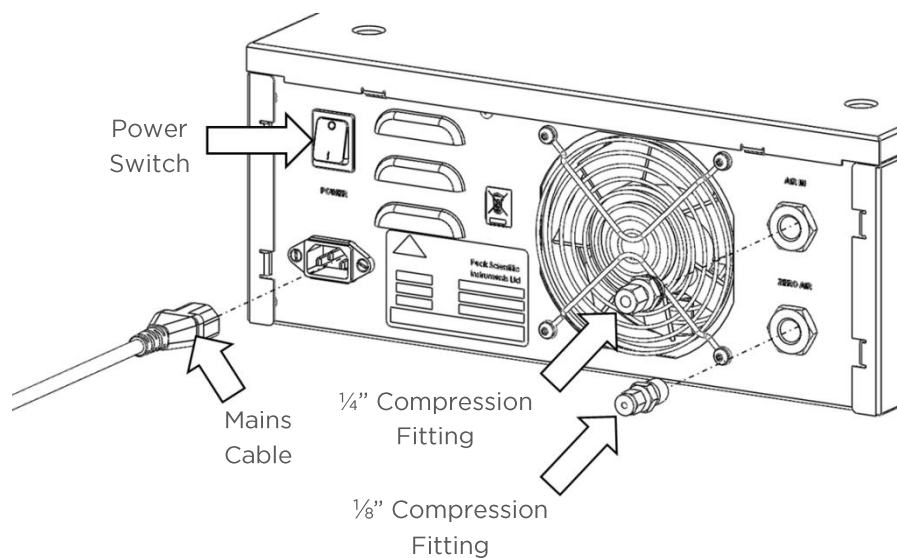
Class 4 Water

A pressure dew point (PDP) of +3°C or better is required and no liquid water is allowed.

Class 1 Oil

In each cubic metre of compressed air, not more than 0.01mg of oil is allowed. This is a total level for liquid oil, oil aerosol and oil vapour.

Rear Connections



Fittings Kit

Supplied in the Fittings Kit are all the fittings required to connect the Precision Zero Air Generator to the application. The contents of the Fittings Kit are as follows:

1.	1/8" Compression Fitting	x 1
2.	1/4" Compression Fitting	x 1
3.	1/4" Teflon Tubing	x 3m
4.	C13 Mains Cable (UK)	x 1
5.	C13 Mains Cable (Euro)	x 1
6.	C13 Mains Cable (US 6-15)	x 1
7.	C13 Mains Cable (US 5-15)	x 1
8.	Installation Guide–Precision Zero Air	x 1
9.	User Manual CD– Precision Zero Air	x 1

The Generator output port is located on the output panel at the rear of the Generator.

It is recommended that PTFE tape is applied to the thread on the fittings to ensure a leak-tight fit.

Air In

Any doubts as to the suitability of your compressed air supply should be referred to Peak Scientific or any of their authorised partners.

Electrical Connection

Connect the Generator to an appropriate 110 or 230 volt single-phase supply, refer to the generator serial plate for input specification and ensure your supply matches the requirements.

If the appropriate power cord is not supplied; a new plug, rated to at least 10 amps, can be fitted by a qualified electrician.



This unit is classified as SAFETY CLASS 1. THIS UNIT MUST BE EARTHED. Before connecting the unit to the mains supply, please check the information on the serial plate. The mains supply must be of the stated AC voltage and frequency.

EARTH/GROUND (E):-	Green & Yellow	or	Green
LIVE (L)/PHASE (P):-	Brown	or	Black
Neutral (N):-	Blue	or	White

Electrical requirements are 110 or 230VAC nominal +/- 10% depending on chosen model. However, running continuously at voltages outwith this is not recommended. Extended periods at extremes can have a detrimental effect on the operation and life of the Generator.

Cleaning

Clean the outside of the Generator only using warm soapy water and a clean damp cloth. Ensure the cloth is thoroughly rung out to remove excess fluid prior to use. Do not use decontamination or cleaning agents that could cause a HAZARD as a result of a reaction with parts of the Generator or material contained within it. If there is any doubt about the compatibility of decontamination or cleaning agents please contact your Peak Scientific Representative.



Cleaning should only be undertaken with the power switched off and the power cord removed from the rear of the Generator.



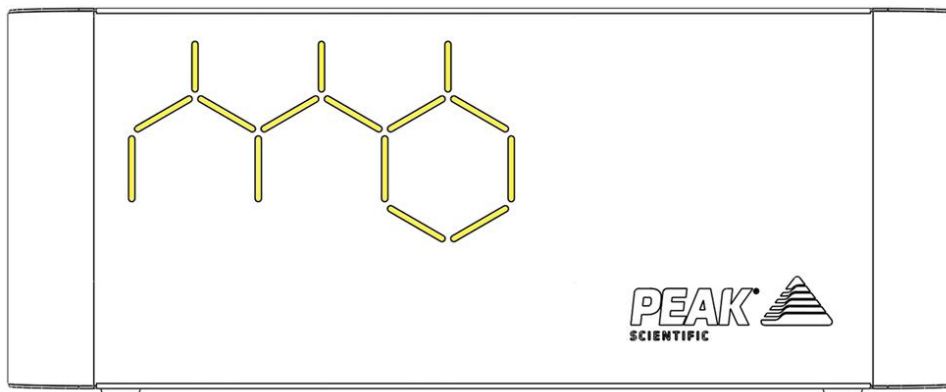
Under no circumstances should any solvents or abrasive cleaning solutions be used as these can contain fumes that could be harmful to the Generator.



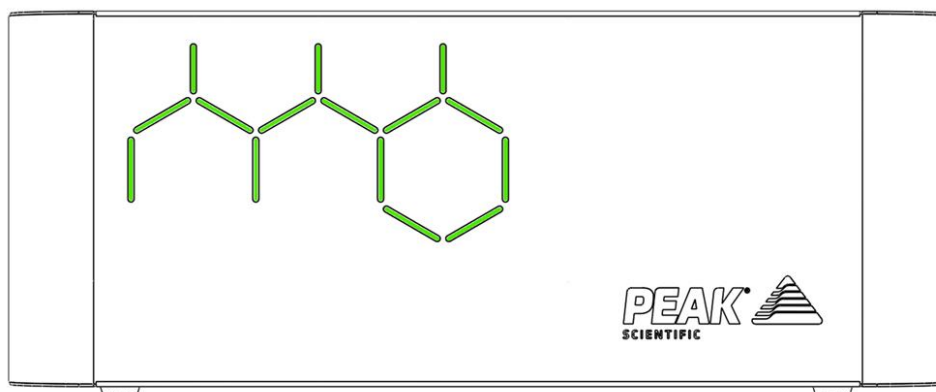
Care should be taken with Leak Detections Liquids.

Start-Up Sequence

Switch the generator on using the power switch on the rear panel of the unit.
The LED's on the front panel will illuminate YELLOW for the start-up period.



On completion of the start-up period, up to 60 minutes, the fascia will illuminate GREEN. The Generator is now ready to be used.



IMPORTANT DOCUMENTS



Warranty Entitlement

To register your generator for your warranty entitlement, send the completed form to Peak Scientific by:

- Email warranty@peakscientific.com
- Online http://www.peakscientific.com/service-and-support/warranty_registration
- Phone +44 (0)141 530 4185
- Fax +44 (0)141 812 8200

PRODUCT WARRANTY REGISTRATION	
COMPANY:	CONTACT NAME:
ADDRESS:	
	EMAIL ADDRESS:
CITY/TOWN:	GENERATOR SERIAL NUMBER:
POSTCODE:	
COUNTRY:	MODEL TYPE:
TELEPHONE:	INSTALLATION DATE (DD/MM/YYYY):

Important Please Note:

You have 1 month to register your Peak Scientific product from the date of shipment.

If you wish to defer installation of your generator you must notify Peak Scientific within 1 month of the shipment date. This can be done by emailing warranty@peakscientific.com Once registered the warranty will be honoured for a period of 12 months after the installation date.

For any generators that remain unregistered the warranty will begin from date of shipment.

Thank you on behalf of Peak Scientific.

Service Requirements



Servicing and/or repair of the Generator should only be undertaken by a **TECHNICALLY COMPETENT PERSON** with the Generator in a safely isolated condition.

Due to the simplicity of the design and the small number of moving parts, the Precision Zero Air Generator will have a long and trouble free life. However as with all scientific and technical equipment it should be regularly inspected and serviced as below.

Service Schedule



Service interval	Component	Part No.	Qty.
12 months	Element Filter 0.01µm	02-7011	1

Service Plans

Peak Scientific offer two service plans. The Complete Service Plan, specifically designed for Generators operated in critical environments, also includes full breakdown cover, guaranteed response times and Generator upgrades if available. Our Standard Service Plan, covering the basic needs of our Generators, features special deals on spare parts and breakdowns.

If you want to know more about our Service Plan options and how we ensure that your instrument can run with the maximum uptime and performance, please contact us at maintenance@peakscientific.com

Trouble Shooting

Problem	Possible Solution
The Generator will not switch on and the power switch does not illuminate.	<ul style="list-style-type: none">• Ensure power cord is plugged into the Generator and that the power socket is turned on.• Check the fuse in the power cord plug.• Contact your service provider. 
The fascia LED's have not illuminated but the power switch is illuminated.	<ul style="list-style-type: none">• Contact your service provider. 
The instrument is reporting low pressure.	<ul style="list-style-type: none">• Check for leaks between the generator and instrument.• Contact your service provider.
The fascia Yellow illumination does not change to green.	<ul style="list-style-type: none">• Contact your service provider.

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