

Air
Monitoring
Solutions

AMS Personal
Sampling Pump

Technical Manual



About this Manual

This manual is available on the Air Monitoring Solutions website in an effort to help support your product. This manual provides information regarding the Technical Specification, maintenance/care of the product and Instruction Guide.

Support for Your Product

You will find any other available product information on the AMS website: www.airmonitoringsolutions.co.uk

Our service centre may be able to perform service and or repair of your product.

Contact:

info@airmonitoringsolutions.co.uk

Certification

Air Monitoring Solutions (AMS) certifies that this product met its published specifications at the time of manufacture and shipment. Every pump has been thoroughly tested at the factory to ensure reliability of the product, however, regular user checks and maintenance are recommended and/or required to maintain specifications published within this document.

Warranty

This air monitoring solutions product is warranted against defects in materials and workmanship for a period of one year from the date of shipment (excluding certain components – batteries, telescopic masts, external tubing and loose accessories supplied with the 16l static sampling pump). During the warranty period, AMS will, at its discretion either repair or replace products which prove to be defective.

For warranty service or repair, this product must be returned to an approved AMS service centre designated by AMS. Customer shall prepay shipping charges to AMS and AMS shall pay shipping charges to return the product, however, customer shall pay all shipping charges, duties and taxes for products returned to AMS from another country.

Limitations of warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate use or maintenance by the customer, customer supplied parts, unauthorised modification or misuse, operation outside the specifications of the product.

Assistance

Product maintenance agreements and other customer assistance agreements are available for AMS products.

For assistance, please contact us via the addresses printed at the back of this manual.

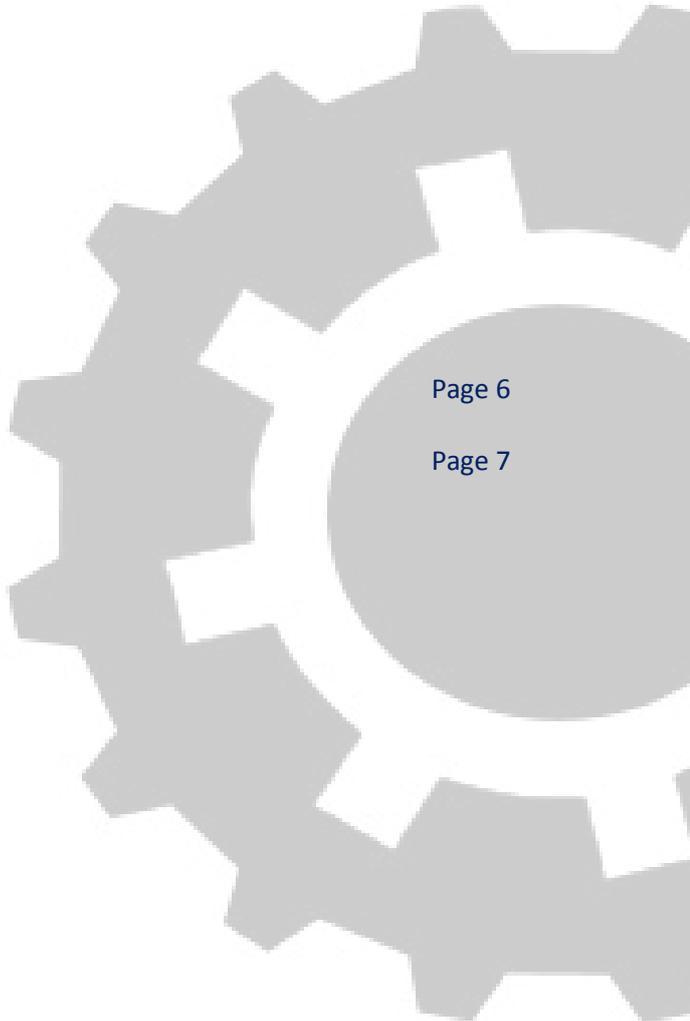
Alternatively visit www.airmonitoringsolutions.co.uk for further information.

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Warnings and Precautions

The following general safety precautions must be observed during all phases of operation, service, maintenance and repair of this product. Failure to comply with these precautions or other precautions printed elsewhere in this manual violates safety standards of design, manufacture and intended use of this instrument. AMS assumes no liability for the customer's failure to comply with these requirements.

Do Not Operate in an Explosive Atmosphere

Do not operate the instrument in the presence of flammable gasses, vapours, or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.

Keep Away From Live Circuits

Operating personnel should not be allowed to remove covers (doing so shall void warranty and may result in injury or damage). Component replacement and internal adjustment should be performed by qualified and approved maintenance personnel only. Do not replace components with the power cable or battery connected. Under certain conditions, dangerous voltages may exist. To avoid injuries and damage to the instrument, always disconnect power and discharge circuits before touching them.

Do Not Substitute Parts Or Modify Instrument

Because of danger of introducing additional hazards, do not adjust internal components, install substitute parts or perform any unauthorised modification to the instrument. Return the instrument to AMS for service and repair to ensure that safety features are maintained.

Battery Charger Safety

Use only the correct specified battery charger

Do not attempt to charge the product with any other power supply other than the one that was supplied with the pump (doing so shall void warranty and will result in injury or damage).

Ensure the Correct Ac Power Adaptor Is Fitted

Ensure that the correct power adaptor is fitted for the intended country of use and that it is fully and securely inserted into the charger.

Charger Power Supply Location

Never locate the charger near any source of combustible material.

Do not place in a location where liquid or metallic objects may be dropped onto the charger.

Charger

Ensure the charger power supply has adequate ventilation.

Indoor Use Only

The battery charger is intended for indoor use only do not use outdoors.

Do Not Use a Damaged Battery Charger

Never operate a damaged battery charger (doing so shall void warranty and may result in injury or damage).

Battery Safety Warnings

Avoid Short Circuits

Avoid accidental short circuiting of any battery. Short circuiting battery terminals could an explosion, fire, burns and serious injuries.

Do Not Use Damaged Battery Packs

Never attempt to charge a visibly damaged battery pack or one that has odours emitting from it. This product contains a li-ion battery which may be dangerous if damaged. Contact AMS for inspection.

Disposal

Always dispose of used batteries in accordance to local regulations or alternatively contact AMS for further advice.

Do not disassemble. Do not throw the battery into fire or heat. The battery may burst or generate toxic gasses if heated.

Charging Frequency

The battery should be charged after every shift. Do not store a li-ion battery for a prolonged period in a discharged state (doing so shall void warranty and will result in injury or damage).

Do not leave pumps turned on for a prolonged period once the battery has gone flat.

Contamination

Whilst the pump typically operates with a high internal positive pressure, it should never be assumed that the pump is contamination free. Do not remove covers without taking suitable precautions to prevent escape of contaminants.

Any products to be returned to AMS must be sent in a sealed labelled bag with a completed certificate of decontamination stating if and what types of hazardous materials the pump has been exposed to.

Quick Start Guide

AMS Personal Sampling Pump

Introduction

Your new AMS Personal Sampling Pump is a lightweight and robust adjustable flow rate air sampling pump. It has been primarily designed and tested to be compatible for use as an asbestos air sampling pump using 25mm diameter **nitro-cellulose filters 0.8µm-1.2µm**; however it may be suitable for other applications.

Note: AMS does not accept any liability for use in environments that may damage the integrity of the pump or 3rd party property.

Construction

The AMS Personal sampling pump is constructed from a tough two part; 2.5mm thick, lightweight die cast aluminium enclosure with rounded corners, internal strengthening ribs and an interlocking lid. It is protected to IP40 as standard (However, higher ratings are available with the use of optional gasket sets).

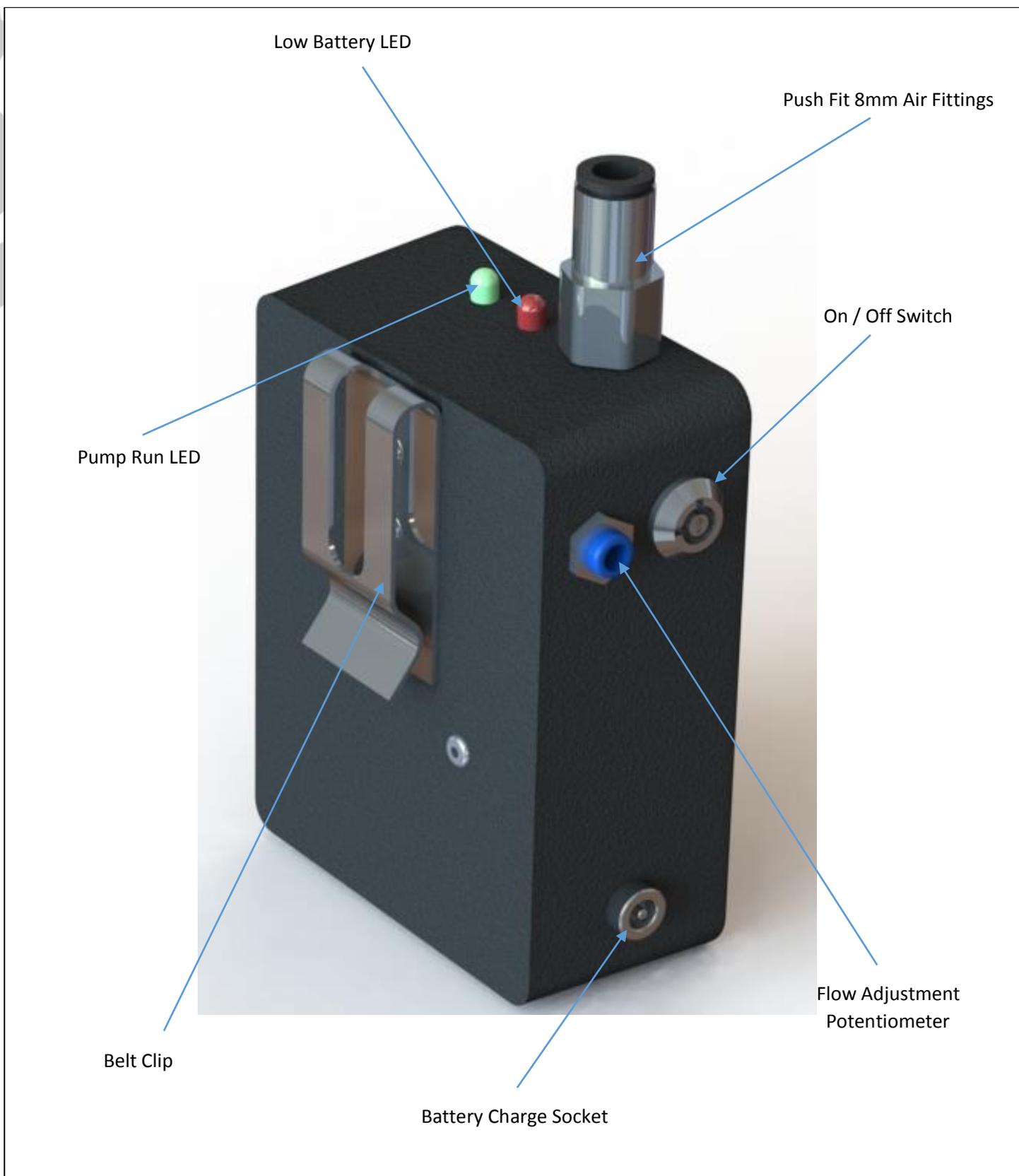
It is coated in Black Textured Polyester Powder Paint. All screws and fixings are countersunk into the case. This construction removes many of the sharp edges found on other similar samplers, whilst saving weight and producing a very tough hard wearing sampler.

Internally the sampler uses a compact rotary vane pump, li-ion battery technology and analogue control circuitry to allow for its compact size, flow stability and wide range adjustment.

The personal pump is designed to be low maintenance and is fitted with easy to use push fit tube connectors. A key operated on/off switch has been utilised to reduce wearer interference with the operation of the pump during tests. The air flow is adjusted via a familiar screwdriver adjusted potentiometer this provides a quick way for the operator to adjust the flow rate accurately when using a flow meter.

Pump timers and automatic time delayed shut offs can be fitted as optional extras – quote available upon request.

Equipment and Parts



Operation

Charging

Before first use ensure that the pump is fully charged. To do this insert the battery charger connector into the charge socket located on the pump and twist clockwise an audible click will be heard and the charger plug will be locked in place. Next turn the on the battery charger a status indicator will illuminate informing the user of the current charging state.

Do not turn off the battery charger whilst the pump is still connected as this will slowly discharge the battery and may result in battery damage.

If the error indicator LED illuminates contact AMS for service and repair there are no user serviceable parts inside.
(See battery indicator table located on the supplied charging adaptor)

Once the Battery charger indicates that the battery charging is complete the battery charger may be turned off and removed to do so locate the latch on the connector and pull it towards you then twist the connector anti clockwise and remove.

Connecting Air Tubing

The pump is designed with easy to use 8mm push fit connectors. To fit the air tubing simply insert the tubing into the connector until it clicks in place. To remove first push and hold the black plastic ring down then gently remove the air tubing.

Activating / Deactivating Pump

To turn the pump on observe which direction the arrow on the switch is pointing. Align the key with the arrow and gently twist clockwise, now remove the key.

To turn the pump off observe which direction the arrow on the switch is pointing. Align the key with the arrow and gently twist anti clockwise, now remove the key.

Battery Indicator

Once the battery starts to go flat the Battery indicator LED will begin to illuminate at about 50% charge remaining and then will flash when less than 20% battery capacity remains. If this warning is ignored the pump will turn itself off to protect the battery.

Do not leave the pump discharged for long periods of time as this may damage or reduce the battery life.

Before recharging ensure that the pump has been switched off.

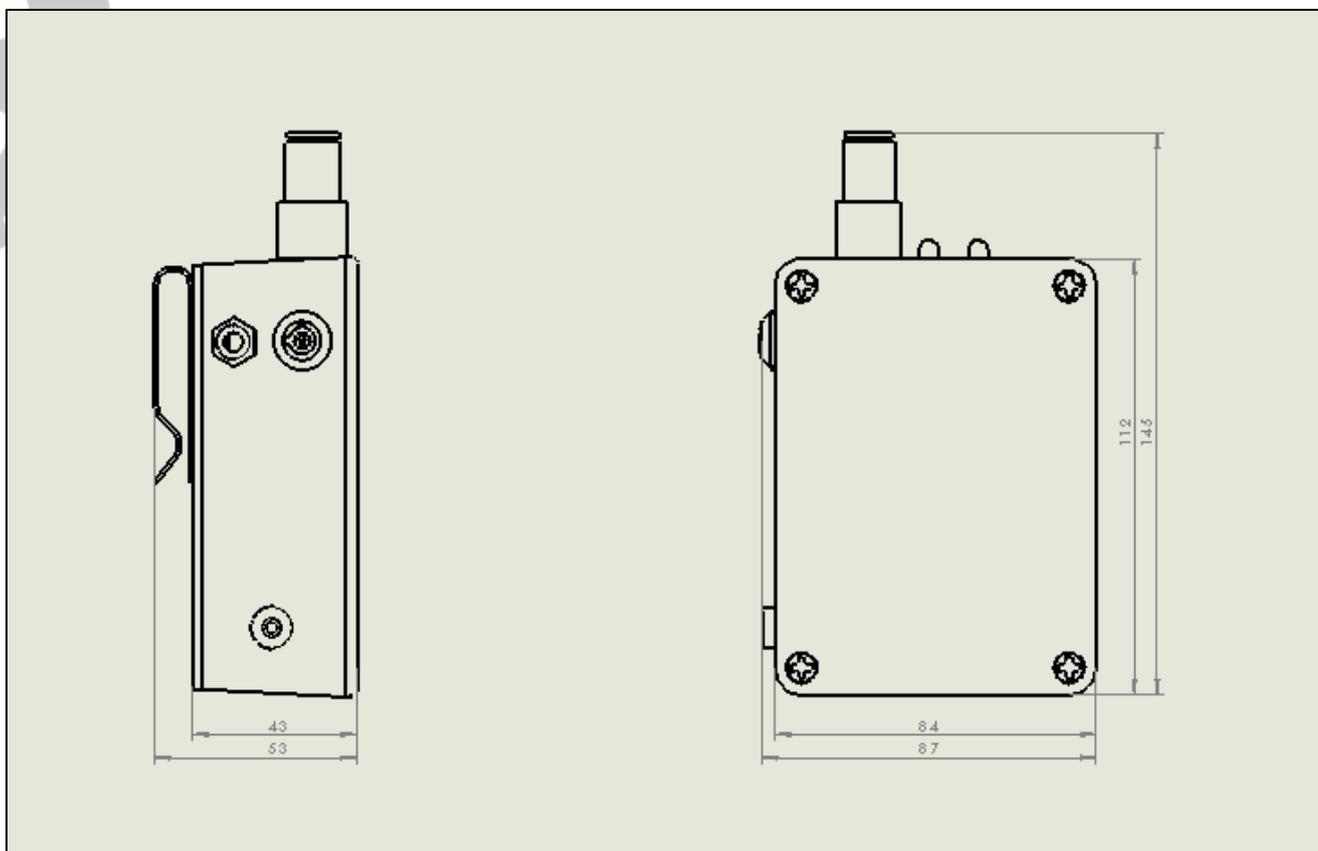
Adjusting Flow Rate

To adjust the sample rate of the pump insert a small potentiometer adjustment tool or small flat blade screwdriver into the hole located in the top of the flow adjustment potentiometer. Adjusting clockwise increases the flow rate turning anticlockwise decreases the flow rate.

Appendices

Technical Specifications

Dimensions



Weight	0.465kg	
Flow Rate	0.6 – 5.0 L/min (adjustable)	
Flow Stability	± 3%	
Battery	Li-Po 2 cell 7.4v 1200mAh	
Approximate Run Time	8 hrs.	
Environmental Requirements		
Ambient Temperature	+5C - +40C (operating)	+5C - +40C (storage)
Humidity:	25% - 75%	

Troubleshooting

Fault	Probable Cause	Solution
<p>The pump does not turn on and the LEDs do not illuminate.</p>	<ol style="list-style-type: none"> 1. Flat Battery. 2. Other internal fault. 	<ol style="list-style-type: none"> 1. Recharge the pump and test once the battery has recharged. 2. Return the pump to AMS for inspection and repair.
<p>The blue LED illuminates but the motor does not run.</p>	<ol style="list-style-type: none"> 1. Flow rate set too low. 2. Motor has been seized by foreign contaminants. 3. Other internal fault. 	<ol style="list-style-type: none"> 1. Try to adjust the flow rate by turning the flow adjuster clockwise. 2. Return the pump to AMS for inspection and repair.
<p>Motor can be heard running but low or no airflow.</p>	<ol style="list-style-type: none"> 1. Tubing not inserted fully. 2. Blocked filter or air tubing. 3. Internal fault. 	<ol style="list-style-type: none"> 1. Check air fittings are fully inserted. 2. Check for any obvious restrictions to the airflow. 3. Return the pump to AMS for inspection and repair.
<p>Battery fails to charge.</p>	<ol style="list-style-type: none"> 1. Poor connection to charger. 2. Pump or charger fault. 	<ol style="list-style-type: none"> 1. Check charger is connected to the pump and turned on. 2. Return the pump and charger to AMS for inspection and repair.
<p>Battery lasts only for a short time.</p>	<ol style="list-style-type: none"> 1. High backpressure and flow rate set. 2. Blocked filter or air tubing. 3. Battery worn out or damaged. 	<ol style="list-style-type: none"> 1. Reduce flow rate if possible. 2. Check for any obvious restrictions to the airflow. 3. Return the pump to AMS for inspection and repair.

