Safely using your Nano altimeter and how to dispose of it

Altimeter Cloud

Please read these safety instructions carefully before using your Nano V1 altimeter. Retain this information for future reference.

CHILDREN AND YOUNG PEOPLE

Keep the Nano V1 out of reach of babies, toddlers, and young children. The altimeter is very small and is a choking hazard, and it contains a lithium polymer battery. It is not a toy and should never be given to a young child to hold or play with. If you think a child may have swallowed the device or the battery, seek medical help or contact your local emergency services straight away, even if the child appears unharmed.

Intended use

The Nano V1 is a barometric altimeter and data logger designed for use in unmanned model rockets and high-power rockets. It is not designed or certified for use in manned aircraft, safety-critical systems, or any application where failure could result in injury or loss of life. Do not rely on this device as a sole safety system.

This product is not designed to be used by children under the age of 16 without adult supervision. Use of this product involves configuring electronic systems and handling model rocket components. Flight logs can be uploaded to altimetercloud.com without an account, although users may wish to register an account to manage their devices and keep track of their logs.

Battery safety

This product contains a small rechargeable single-cell (1S) lithium polymer (LiPo) battery (20 mAh) soldered to the board. Charging is managed and current-limited automatically by the onboard charge controller. The battery cell itself does not have a protection circuit, so please observe the following to reduce the risk of fire, burns, or battery damage:

- Charge the altimeter using a standard micro-USB cable only. Do not use damaged or frayed cables.
- Switch the altimeter off when not in use and recharge it promptly after a flying session. The altimeter automatically shuts down into a deep sleep when the battery falls to 2.92 V to protect the cell, but deep sleep still draws a small current. The only way to isolate the battery completely is to turn the power switch off.
- For the longest battery life, do not leave the battery empty or at a low charge for long periods. If you are not planning to fly for a while, store it at around half charge rather than full or empty. From empty, around 20 minutes on charge gets it close to that, then switch it off. If it is already fully charged, for example when you put it away for the winter, switch it on in flight mode for about 2 hours and then switch it off, and it will be near half charge.
- Do not charge the battery below 0 °C or above 45 °C.
- Take the altimeter out of your rocket to charge it. Charge the device on a hard, non-flammable surface, not on carpet, bedding, paper, or other combustible materials, and in a location where you can keep it in view. Do not leave it charging unattended, and disconnect it once the charge LED turns off.
- Do not puncture, crush, disassemble, or expose the battery to fire or extreme heat.
- Check the battery after a crash or a hard landing. If it is dented, punctured, or has taken a heavy knock, do not

charge or fly it. Leave it in a safe, non-flammable place, ideally outside, for 12 hours before handling it further, and contact us if you are unsure.

- Stop using the altimeter immediately if the battery appears swollen, deformed, or is emitting heat or odour, and dispose of it safely at a battery recycling point.
- The Nano V1 is supplied with a bay cover, SLS printed in nylon, that screws onto an electronics bay sled with the Nano held underneath. For the best protection, install the Nano in a payload section or electronics bay under its supplied cover, or a mount of your own making, with the focus on protecting the battery from being punctured. Secure it in place, ideally inside an electronics bay, which shields the board and battery from impact during flight and recovery. It can also be attached to a shock cord, but do not fly it on a shock cord in wet or damp conditions, as moisture may damage the board and battery on landing.
- Mounting on the shock cord is supported, but keep the Nano out of the bulk of the ejection gases when it shares the space with the motor ejection. Installing it above the parachute helps, or wrap it in a non-flammable but breathable material such as Nomex.
- If you are travelling by air, check your airline's rules on devices with lithium polymer batteries before packing the altimeter in your luggage, and keep it switched off.

IF THE BATTERY OVERHEATS

If the battery becomes unusually hot, smokes, or catches fire, disconnect the charger if it is safe to do so and move the device away from people and flammable materials without touching it with bare hands. Allow it to cool and stabilise in a well-ventilated area, avoid breathing any fumes, and once it is cool and stable, dispose of it at a battery recycling point.

The battery is soldered to the board and is not user-replaceable. Do not attempt to remove or replace it yourself. If your battery becomes faulty, swollen, or no longer holds a charge within 5 years of the date of manufacture, please contact us at info@modelrockets.co.uk and we will arrange to replace it free of charge.

Charging

The Nano V1 charges via micro-USB. The onboard charge controller manages the charging process automatically, limiting the charge current to suit the cell and terminating the charge when the battery is full. The charge LED illuminates while charging and turns off when charging is complete. Charge the device on a non-flammable surface where you can observe it, and do not charge in extremely hot or cold environments.

It is good practice to fully charge your altimeter before each flying session. If the battery falls to 3.05 V during a flight, the altimeter stops recording and saves what it has recorded, so a low battery can cut a flight log short.

Operating environment

- Operating temperature: -10 °C to 60 °C in flight mode, where the power draw is very low, the board barely warms and the battery is not charging. In USB mode, where the board runs warmer and the battery charges, 0 °C to 45 °C. While connected to USB or charging, the altimeter shuts itself down if the board gets too hot, to protect the battery and components. This never happens in flight mode, so heat from an ejection charge can never stop a flight.
- Do not expose the altimeter to water, rain, or excessive moisture.
- Do not use the altimeter in environments with corrosive gases or liquids.
- Avoid prolonged exposure to direct sunlight when not in use.

Local regulations

The user is responsible for complying with all applicable local, national, and international laws and regulations regarding model rocketry, high-power rocketry, and the use of pyrotechnic devices. Regulations vary significantly by country and region. Rocketry Ltd makes no representation that the use of this product is lawful in any particular jurisdiction and accepts no liability for any breach of local regulations by the user.

Modifications

Any modification to the hardware, firmware, or software of the Nano V1 that has not been authorised by Rocketry Ltd will void all warranties and may invalidate the product's regulatory compliance certifications. The device has been tested and certified as supplied. Unauthorised modifications may also create safety hazards.

Third-party accessories

Rocketry Ltd is not responsible for any damage, malfunction, or safety hazard caused by the use of non-genuine accessories, cables, batteries, or components. Use only accessories and replacement parts recommended or supplied by Rocketry Ltd.

Disposal and recycling

This product is electrical and electronic equipment and must not be disposed of with general household waste.

The crossed-out wheelie bin symbol on the product indicates that it falls within the scope of the Waste Electrical and Electronic Equipment (WEEE) Directive. At the end of its useful life, please dispose of this product at an appropriate collection point for the recycling of electrical and electronic equipment, or return it to the retailer when purchasing equivalent new equipment.

To find your nearest recycling point:

- **United Kingdom:** Visit recycleyourelectricals.org.uk for a recycling locator with nearly 30,000 drop-off locations across the UK.
- **European Union:** Contact your local municipality or visit your local household waste recycling centre. Most EU member states provide free collection points for small electrical equipment.

The lithium polymer battery contained within this product must be recycled separately. Many local authorities and retailers provide battery recycling facilities. Do not dispose of the battery in general waste or by incineration.

Correct disposal helps protect the environment and human health from potential hazards arising from uncontrolled waste disposal, and supports the recovery and recycling of materials.

WEEE Producer Registration: WEE/MM6411AA

Questions or concerns

If you are unsure whether the Nano V1 is suitable for your intended application, or if you have any questions about configuring the altimeter safely, please contact us at info@modelrockets.co.uk before flying. If you have any doubt about your configuration or the suitability of the altimeter for your rocket, do not fly until your concerns have been resolved.