ascent

reach for the sky

MSL Alt **2,058**
Vert Speed **-1.2**
Ground Speed **38.9**
Heading **268°**
Glide Ratio **9:1**

ascent h1

v1.224

English Instructions

Thanks!

Thank you for your purchase of the Ascent wrist-mounted vario. This product was designed by engineers who also happen to be paragliding pilots. We wanted a product that would meet the following criteria:
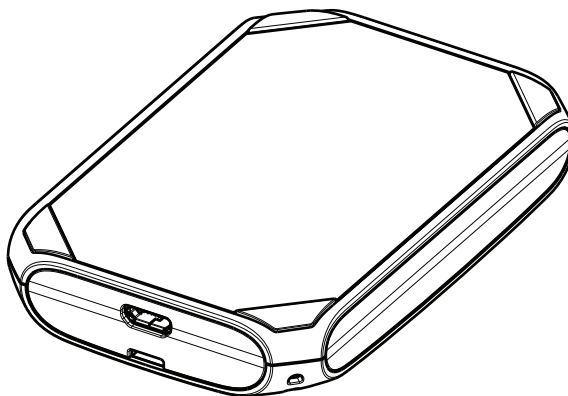
- Small
- Light Weight
- Easy to Operate

There was nothing currently available that satisfies each requirement so we sat down, rolled up our sleeves, and after many hours of hard work, prototype builds, programming, reliability testing, and test flights came up with what we believe is the best small, rechargeable variometer available.

This was our introduction in 2008 to our v1 unit. After selling thousands of varios, getting pilot feedback, and collecting lessons learned, we decided to do the whole thing again. We believe that this new product both improves on the original concept while retaining the ascent identity that made the v1 such a success.

We know that you will enjoy this product and wish you many safe and enjoyable flights.

Thank you again for your purchase.
Ascent Products

Safety Information

Warning; This product is not intended to be used as a precise measurement of altitude, velocity, or temperature.

Warning; This product contains a Lithium-ion rechargeable battery. The product must be disposed of properly. Use only in accordance with operating instructions.

Warning; This product and its components contain chemicals known to the State of California to cause cancer and birth defects, or reproductive harm. This notice is being provided in accordance with California Proposition 65. If you have further questions please contact Ascent Products.

Charging the Battery

Your vario operates on a rechargeable lithium-ion battery. The battery can provide power for at least 8 hours of flight time, or up to 1 year standby time when fully charged. The beep volume and mode have a noticable affect on battery life with louder and longer beeps requiring more power and reducing battery life.

To charge the battery, plug the micro-USB end of the cable into the product and plug the other end into the AC wall charger, car charger, or computer. The screen will display "USB Connected Charging". When the unit is completely charged the screen will change to "USB Connected Charged".
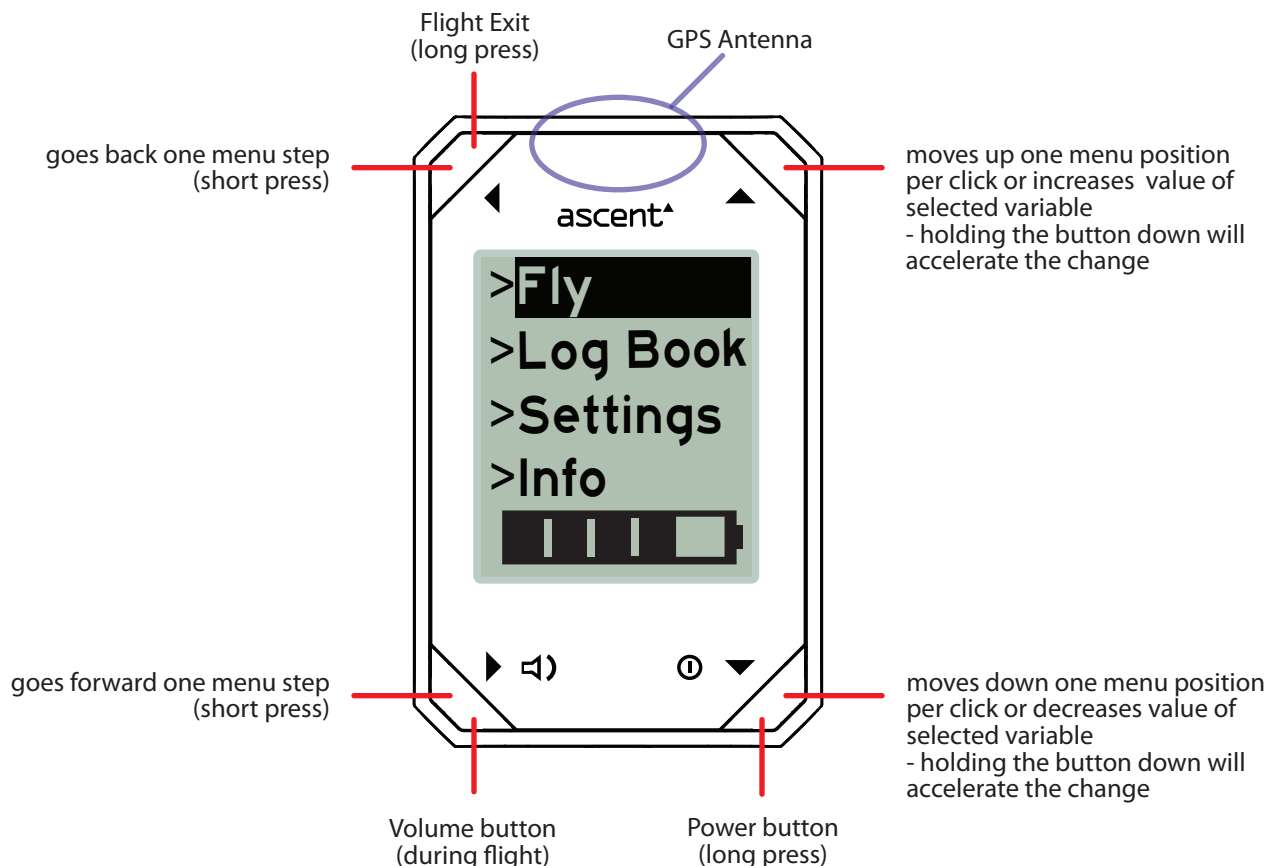
The product takes less then 2 hours to fully charge. Due to protection circuits it is not possible to over-charge. When fully charged, the icon on main menu will show full. Lithium-polymer batteries do not have a memory and there is no advantage to letting the unit run completely out of power prior to charging. Therefore you are advised to keep the unit fully charged so that it is ready to use when you are ready to fly.

If the battery becomes low during use, "Low Batt" will display at the bottom of the screen. If the battery becomes critically low, the unit will shut off and not turn on again. We recommend charging the battery as soon as possible to avoid possible permanant damage caused by over discharging the battery. Avoid storing and charging the battery in extreme hot (>40C) or cold (<0C) environments.

Product Overview

To get the most out of your new product we recommend that you read the entire manual. However, we believe that once you start using the menus you will find the operation of the product easy and intuitive.

The product has four push buttons for navigation and adjustment as shown below.

Flight Exit
(long press)

GPS Antenna

goes back one menu step
(short press)

moves up one menu position
per click or increases value of
selected variable
- holding the button down will
accelerate the change

◀   ▲

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>Fly
>Log Book
>Settings
>Info

goes forward one menu step
(short press)

▶ ◁)   ⏻ ▼

moves down one menu position
per click or decreases value of
selected variable
- holding the button down will
accelerate the change

Volume button
(during flight)

Power button
(long press)

Turning the vario on and off

Press and hold the ⏻ button until the prompt appears (2 seconds), then press the ▼ button (again) to scroll to "Yes" and press the ▶ button to turn the unit on.

As soon as the unit is turned on, it will attempt to start aquiring satellites. Please make sure that the antenna has a clear view of the sky during use and especially during the calibration process. This process should take less than 3 minutes.

To turn the unit off, press and hold the ⏻ button for 2 seconds. Note that it is not possible to turn the unit off while in fly mode.

To extend the battery life, after 30 minutes of inactivity the vario automatically turns itself off. This will not happen in the fly mode.
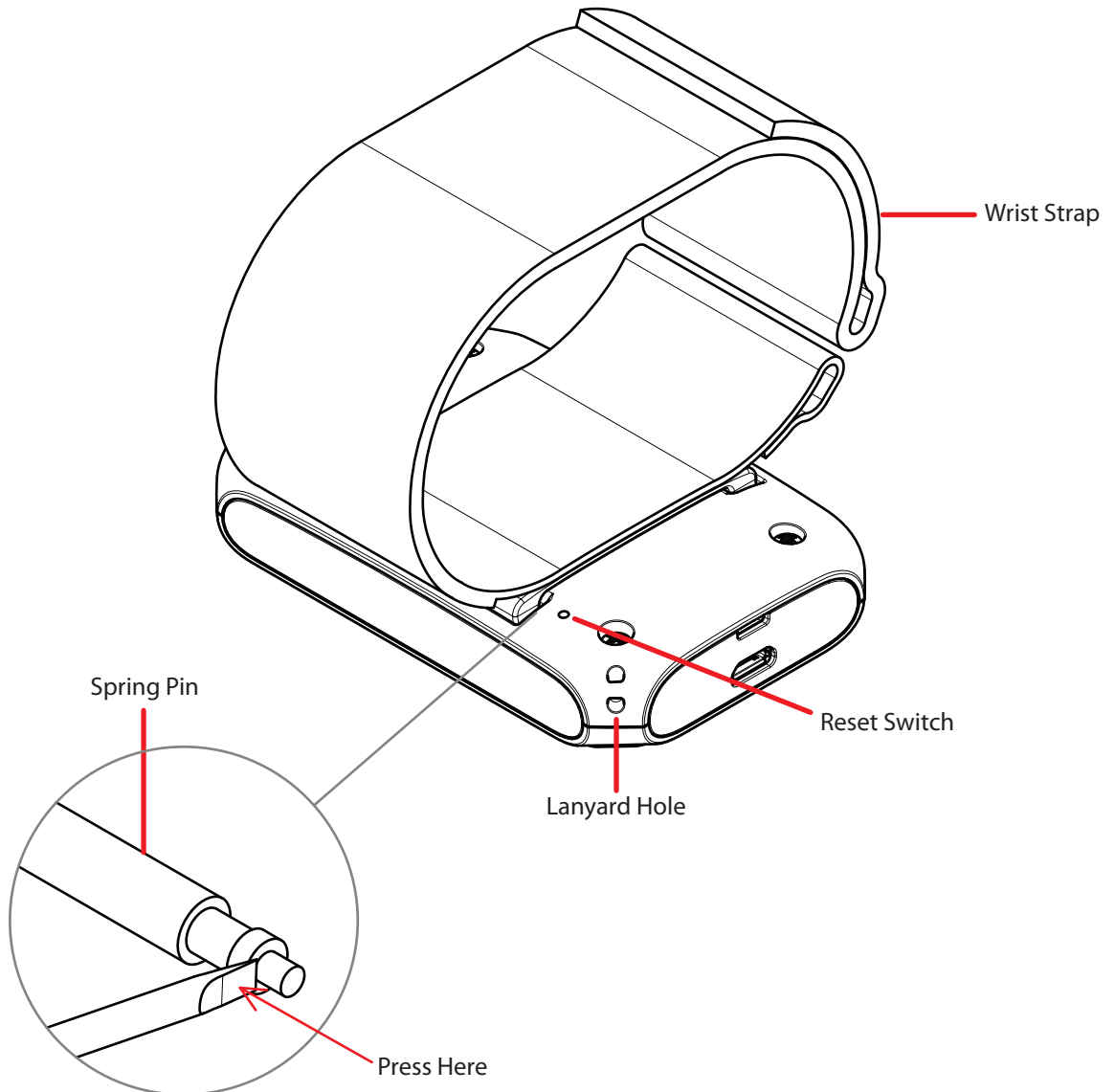
When the unit is turned on, the main menu is displayed (shown above). This screeen has four options: Fly, Log Book, Settings, and Info. Use the ▲ and ▼ buttons to highlight your choice and press the ▶ button to select. This page also displays an estimate of the current battery charge using an icon at the bottom of the screen.

Starting and Ending a Flight

Use the ▲ and ▼ buttons to highlight Fly and then press the ▶ button to enter Fly Mode. The unit will not start recording a flight (and by default not beep) until the velocity threshold has been crossed. This thresholds can be adjusted in the Settings menu. To exit the flight, press and hold the ◀ button.

Wrist Strap

The wrist strap is secured to the vario body by two spring pins (similar to those used on a typical watch). To remove the strap place the vario face down on a non scratching surface and with a small screwdriver or similar tool place the end between the spring pin shoulder and the vario body. Carefully compress the spring pin several mm and the pin should disengage from the body. Repeat on the other side. Installation of the strap is done by installing the spring into the strap hole and aligning one end of the pin into one of the holes in the back cover. Carefully compress the other end of the spring pin while aligning the tip with the other hole in the body. Release the pin and be sure to give the strap a good pull to make sure that the pins are well seated and engaged.

Wrist Strap

Spring Pin

Reset Switch

Lanyard Hole

Press Here

Reset Switch

The reset switch is used to reset the vario. This may be necessary if the vario is not responding to button presses or by charging. To manually reset the vario, place it face down on a non scratching surface. Then, insert a paper clip or other similar pin into the hole on the back of the unit and gently press. You should feel a slight depression like you do when you press one of the other buttons (it is not necessary to hold it down). The screen will go blank and the vario will reset. The date and time will be reset, however the flight logs will not be erased.

Fly Mode

The main fly screen is shown below. By briefly pressing any of the four buttons during the flight, the screen will temporarily display other flight information for 5 seconds and then return to the default screen.

Pressing the ◁) button will display the current volume. Press the ▲ or ▼ button to adjust the volume. Remember that a long press of the ◀ button will exit the Flight Mode completely and stop the recording of flight data.

Flight Exit
(long press)

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MSL Alt	4,730	True (MSL) Altitude (or Altitude Relative to launch depending on settings)
Vert Speed	+ 850	Averaged Vertical Speed (default = 5 second average)
Ground Speed	20.3	Ground Speed (Instantaneous)
Track	315°	Heading (Instantaneous)
Glide Ratio	20:1	Glide Ratio (fixed at 5 second average)

◀ Page

Time	13:24	Time
Duration	1:56	Duration of Flight (h:mm)
Dist. and	6.3	Distance from Launch (mi. or km)
Direction from Start	NW	Direction from Launch
Temp	76.5°	Temperature (F or C)

▲ Page

Max Alt	4,730	Maximum Altitude this flight (ft or m)
Rel Alt	1,290	Altitudue Relative to launch (ft or m) (or True (MSL) Altitude depending on settings)
Max Lift	850	Maximum instantaneous lift this flight (non-averaged) (fpm or m/s)
Avg Lift	620	Maximum averaged lift this flight (fpm or m/s)
Max Sink	-730	Maximum instantaneous sink this flight (fpm or m/s)

Log Book

Use the ▲ and ▼ buttons to highlight Log Book and then push the ▶ button to enter the Log Book. This unit can store flight summary data for up to 200 flights. Pushing the ▲ and ▼ buttons will scroll through the recorded flights. Pressing the ▶ button will allow you to see additional flight details. Note that the data in the log book will be saved, even if the battery is completely discharged or the unit is reset.

Flight #059	Log Number
Date: 29/01/2011	Launch Date
Start Time: 15:36	Launch Time
Flight Duration: 1:40	Flight Duration
Max Dist: 12.5mi	Maximum distance from Launch
Max Temp: 80°F	Maximum temperature
Min Temp: 60°F	Minimum temperature

Flight # 059	Log Number
Start Alt: 12,083	Start (Launch) Altitude
Max Alt: 18,522	Max Altitude
End Alt: 175	End (Land) Altitude
Max Lift: + 520	Max Lift (instantaneous)
Avg. Lift: + 480	Max Lift (averaged)
Max Sink: - 510	Max Sink (instantaneous)

Flight # 059	Log Number
Start	
Lat: 33.82087	
Long: ·116.95718	Launch GPS Coordinates
End	
Lat: 33.81973	
Long: ·116.96423	Landing GPS Coordinates

Flight # 059 — Flight Number

> Delete Flight?
● No
o Yes

Use the ▼ button to highlight Yes and then push the ▶ button to delete this flight. Note: this action permanently deletes this flight number from the log book and the remaining flights will not be re-numbered.

Settings

To enter the Settings Menu, highlight Settings on the main menu and press the ▶ button. All of these settings are saved even if the battery is completely discharged however, if the firmware is upgraded, some of these may be lost. From this page you can select which catagory of settings you wish to modify. There are currently seven choices: Altimeter, GPS, Beep, Flight, Date & Time, Units, and Memory.

Altimeter

Altitude Calibration
● GPS
o Known Altitude
>   1,752 ft

Use the GPS to calibrate the Altitude prior to Launch
Set the altitude manually

Flight Mode
● True (MSL)
o Relative to Launch

This setting selects what altitude is displayed on the main fly screen. The Relative to Launch altitude is automatically reset to zero for every flight when you first enter the fly mode.

GPS

GPS Units
● DDD.DDDDD
o DD,MM.MM
o DD,MM,SS

This setting selects the units for GPS display
Decimal Degrees
Degrees, Decimal Minutes
Degrees, Minutes, Seconds

Beep

Beep Style
● Standard
o Classic

The Standard beep has been optimized for performance and long battery life (16-30 hours). The Classic may be a more familiar sound, however the battery life is reduced (8-22 hours).   The battery life is affected by beep volume. The higher the volume, the shorter the battery life.

Sink Alarm
● Alarm On
o Alarm Off

It is possible to turn the "Sink Alarm" on and off.

Sink Rate
>   590 ft/min

This is the instanteanous negative vertical speed required for the sink alarm to go off.

Flight

Vertical Speed Avg.
> 05 seconds

This is the number of seconds that the displayed vertical speed is averaged. The "beep" always uses the instantaneous vertcial speed.

Start Flight
> 10 kph velocity

After entering Fly Mode, the unit waits until this customized velocity threshold is crossed. A series of beeps will play to indicate that the flight has initiated.

Preflight Beep
● Off
o On

Prior to a flight being initiated the "preflight beeps" can be suppressed. This prevents the unit from making annoying and battery wasting beeps prior to launching.

Date & Time

Time: 14:19
UTC Offset:
> +02

Date
20/07/2012
Date Format
● DD/MM/YYYY
o MM/DD/YYYY

The time is set automatically using the GPS signal, however you need to enter the UTC offset manually.

The date is set automatically using the GPS signal, however you can choose which format you would prefer the date displayed.

Units

Altitude
● m, m/s
o ft, ft/min
Distance
● km, kph
o mi, mph
Temperature
● °C
o °F

On this page, you can customize the displayed units.

Memory

Track Logs (IGC)
3.6 hours
10% Full
> Clear Track Logs?

Flight Log Book
125 Flights
62.5% Full
> Clear Log Book?

This shows the current memory used by the detailed track logs. These logs can be downloaded to a PC in IGC or KML format. There is 50 hours of logging memory available (1-second intervals). It is not necessary to erase the Flight Log book when doing this. If the memory is full, it will not record new tracks.

This shows the current memory used by the Summary Flight Log Book. It is possible to erase the entire Flight Log at once, however it is not expected that you will do this very often.

Info

To enter the Info screen, highlight "Info" on the main menu and press the ▶ button.

Ascent h·1
Software: v1.222
Serial# FFFF0008
20/07/2012
10:38:05

Altitude: 71.3m
Lat: 0.00000
Long: 0.00000

Ascent hardware version
Ascent software version
Unit Serial Number
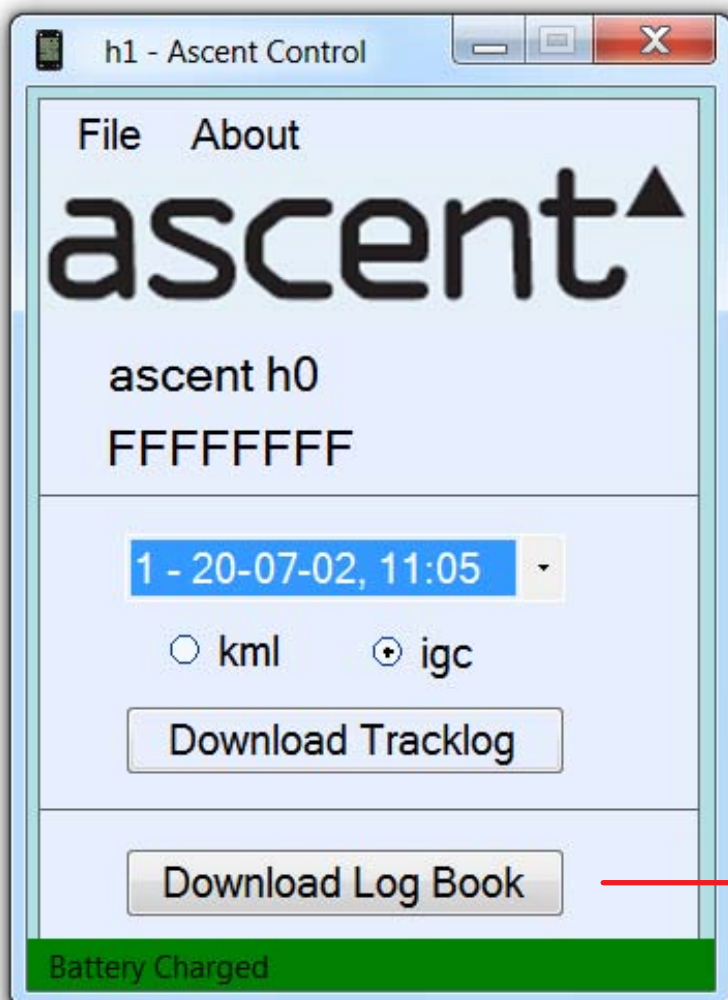Date
Time

Altitude
Latitude
Longitude

Connecting to a Computer

Please visit www.ascentvario.com to download and install "h1 ascent control" software from the support page. The h1 vario uses completely new software that is not compatible with the "v1 ascent control" software. This software currently works only on a Microsoft PC.

To connect your variometer to a computer plug the micro USB end of the supplied cable into the product. Plug the other end of the cable into a computer USB port.

If using for the first time and the h1 ascent control software does not recognize your h1 vario, you may need to manually install the driver.

1. Open the Device Manager, this can be found by typing "device manager" into the start menu search.
2. Select "Ports (COM & LPT)
3. The h1 should appear (perhaps under the name Alti)
4. Right click on whichever appears and click "Update Driver Software..." This will open the hardware wizard.
5. When prompted to connect to Windows Update to search for the software, select No
6. Then select install from a specific location
7. Click the Include this location in the search and select the Ascent folder C:\Program Files\Ascent\h1 - Ascent Control
8. Click Next
9. If a window pops up that says that the driver has not passed Windows Logo Testing. Click on Continue Anyway.
The driver should install and the Ascent Control should now recognize your h1 vario.

To upgrade the firmware on the unit, use File->Upgrade Firmware and select the new firmware to be uploaded. This process takes about 1 minute during wich the unit and the software will be unresponsive.

To perform a factory reset, use File->Factory Reset. Please note that this will also erase the complete Log Book memory.

Pressing "About" will display the current Device Firmware, Application GUI Firmware, and DDS Version.

To download IGC or KML data, select the flight that you would like to download using the drop down menu, select the format, and press the "Download Tracklog" button. This will prompt what directory to use and download the flight data.

Press this button to download the complete Log Book summaries in .csv format to the directory that the Ascent software is located. This file can be viewed in any spreadsheet program (such as Excel).

Care of Product

Your product is constructed of high quality materials and does not require maintenance other than cleaning. Clean the product using a soft cloth dampened with a mild detergent solution and then wipe dry. AVOID chemical cleaners and solvents that may damage plastic and braided nylon components.

Do not store the product where prolonged exposure to sun, heat, rain, snow, or extreme cold may result in permanent damage.

Do not store the unit where the buttons can be depressed as this may lead to the battery being drained.

The product is not waterproof so do not immerse it in water.

Specifications

Altimeter:
Temperatue corrected, gps or user calibrated altitude
True and Relative (to launch) altitude
Display in meters or feet with 1 meter (3 ft) resolution

GPS:
48 Channel GPS Receiver

Variometer:
Customizably averaged digital display with 0.1 m/s (20 ft/min) resolution
Instantaneous audio with adjustable volume
Sink alarm with user selectable threshold

Temperature:
Ambient temperature in Fahrenheit or Celsius with 1 degree resolution

Memory:
Automatically records Flight Log summary data for up to 300 flights
Automatically records up to 50 hours of 1-second interval detailed tracklog data in igc or kml format

Display:
Black & White Transflective Graphic LCD with 128 x 128 pixel resolution

Battery:
Custom 830 mAh rechargable lithium-ion battery with Sanyo cell

Physical Properties:
83.4mm (3.28") x 54mm (2.13") x 14.9mm (0.59")
93g (3.3 oz)
PC/ABS housing with PMMA display window

Software License Agreement

By using you Ascent Products variometer you agree to be bound by the terms and conditions of the following software license agreement.

Ascent Products grants you a limited license to use the software embedded in this device in the normal operation of the product. Title, ownership rights, and intellectual property rights of the software remain Ascent Products.

Your product's software is property of Ascent Products and is protected under the United States copyright laws and international copyright treaties. The structure, organization, and code of the software are valuable trade secrets to Ascent Products and shall remain so. You agree not to decompile or reverse engineer the software to be used in any other way. You agree not to export or re-export the software to any country in violation of the export control laws of the United States

Limited Warranty

Your Ascent Products vario is warranted to be free of defects in materials or workmanship for two years from the date of purchase. Within this period Ascent Products at its sole option may repair or replace any parts that fail in normal use. These repairs or replacement will be made at no charge to the customer. The customer is responsible for shipping and handling of the item.

The warranty does not cover failures due to abuse, misuse, accident, liquid ingress, or unauthorized alterations or repairs.

To obtain warranty service, contact Ascent Products by e-mail or phone. Do not return the unit without first contacting Ascent Products.

Contact Us

For questions or assistance with your vario please contact

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Please also "like" our facebook page (http://www.facebook.com/ascent.vario) for occasional updates.