ALTIMETERS

VISO II+™
MANUAL

WARNING

FAILURE TO FOLLOW ALL WARNINGS, INSTRUCTIONS, AND REQUIRED PROCEDURES MAY RESULT IN SERIOUS INJURY AND DEATH.

Always ensure your altimeter is adjusted to zero prior to jumping to account for any changes in barometric pressure.

Altimeters may give erroneous readings if you are tumbling or the altimeter is in a burble (wake), such as when sit flying or sky surfing. Chest mount altimeters are more vulnerable to this problem. If you are in doubt about how this limitation affects your skydiving, consult a licensed instructor.

DO NOT use this equipment unless you are in, or have passed an approved skydiving course.

Use the VISO II+™ at your own risk.

CONTENTS

INTRODUCTION

Congratulations on purchasing your new VISO II+™!

The VISO II+™ design is based upon the latest findings in microcomputer technology and freefall parameters. Please read ALL of the instructions prior to actual skydiving use. The VISO II+™ consists of three instruments:

1 Digital Altimeter

Stores detailed altitude information about the last jump for later review

2 Digital Speedometer

Stores detailed speed information about the last jump for later review

3 Digital Logbook

Electronic logbook, storing and displaying information about the last 200 jumps.

- Can be used as an aid to track the amount of jumps made.
- Can be reset at any time, but time and date for the last reset remains stored and cannot be erased.

4 Daily Jump Counter
- Displays number of jumps completed on last date and/or 9 other jump dates.

Features
- Digital altimeter or speedometer
- Electroluminescent backlight for night jumping. Can remain ON for several hours
- Automatic calibration to local elevation
- LCD screen for easy and intuitive operation and information review
- Logbook with playback of altitude/speed profile for the last jump
- Operational at sub-zero temperatures
- Switches OFF automatically after 14 hours

Software & functions

- Stores up to 10 minutes of data from the last jump
  Displays altitude and speed details from exit to landing
- Records and displays jump information about the last 200 jumps including exit altitude, deployment altitude, freefall time, max. speed in freefall and max. speed under canopy
- Choice of readings in feet or meter and mph or kmh

If you have any questions please e-mail us at info@LBAltimeters.com

DESCRIPTION

1 ∧ UP button

2 • Middle button

3 ∨ DOWN button

4 LCD display

5 Reset button
(on rear side)
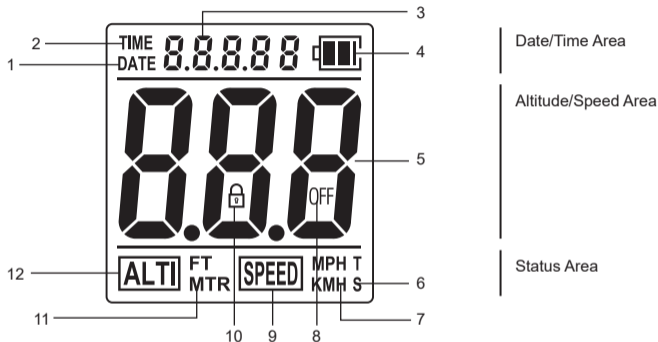
DISPLAY

The display has the following characteristics by default (normal usage):

Date/Time Area

1 Date icon

2 Time icon

3 Additional information, displaying:
   - current date/time
   - time in profile when in Profile Area
   - date/time when in Logbook Area
4 Battery status
   Battery Power Level icon – indicates the remaining battery capacity

Altitude/Speed Area
5 Main information, displaying:
   - altitude when VISO II+™ is set to Altimeter mode
   - speed when VISO II+™ is set to Speedometer mode
   - detailed profile information when in Profile Area
   - logbook information when in Logbook Area
   - various setup information

Status Area

6 True Airspeed (TAS) / Skydiver's Airspeed (SAS) status
7 Mph/Kmh status
8 OFF icon - Used to manually power OFF the VISO II+™
9 Speedometer indicator when VISO II+™ is set to Speedometer mode
10 Lock icon Used to indicate and control entrance to ACCESS mode
11 Feet/Meter status
12 Altimeter indicator when VISO II+™ is set to Altimeter mode

Power ON

The VISO II+™ has been powered OFF prior to shipping from our factory. To turn the power ON, press and hold any key until the VISO II+™ beeps, then release the button.

Auto OFF

The VISO II+™ automatically switches OFF 14 hours after the last jump or 14 hours after the last pressing of any key, whichever comes last.
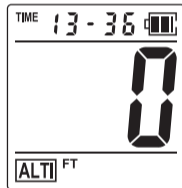
The VISO II+™ runs a self-test and displays all icons
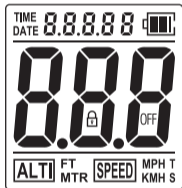
It then displays the firmware version number together with a factory reference number...

...and switches to a screen configuration referred to as the "Main Window".
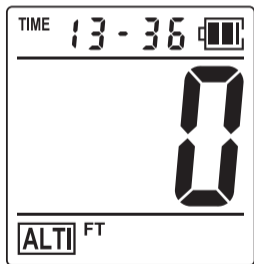

Main Window

This represents the starting point for all further actions and subsequent displays.

MAIN WINDOW

Explanation

The Main Window is the default window which displays current time, battery status and either Altitude or Speed.

Altimeter Mode

```
TIME  13-36  [■■■]
        0
ALTI  FT
```

When the VISO II+™ is set to Altimeter mode, the "ALTI" and "Feet/Meter" icons are ON.

The VISO II+™ will display the altitude during climb, in freefall and under canopy.

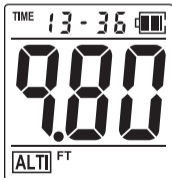The date/time information switches OFF during freefall and under canopy.

(When preset, press ⌒ to view the current date).

Altimeter Displays

In Altimeter mode the LCD may show 3 different displays, depending on what altitude value is shown.


If the altitude is below 1000 the altitude is displayed as normal. Altitude resolution is in 10 feet (5 meter) increments.

If the altitude is 1000-9999, the altitude is displayed as tens of feet or meter. Altitude resolution is in 10 feet (10 meter) increments

If the altitude is 10000 or higher, the altitude is displayed as hundreds of feet or meter. Altitude resolution is in 100 feet (100 meter) increments.
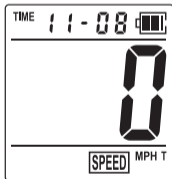
Speedometer Mode

When the VISO II+™ is set to Speedometer mode, the SPEED, "Feet/Meter", "Mph/Kmh" and "TAS/SAS" icons are ON.

The VISO II+™ will display the climb rate/speed during climb, in freefall and under canopy.

The date/time information switches OFF during freefall and under canopy.

Speedometer Display during the freefall

Speed resolution is in 1 Mph (1 Kmh) increments.

Important Notice about Speed Recordings

Experience has shown that when mounting the VISO II+™ on the hand or belly, different air pressures induced by hand or body movements may result in incorrect recordings of speeds.

ROAD MAP

It is recommended that you first familiarize yourself with the **VISO II+™ ROAD MAP** which is a helpful tool when using the VISO II+™.

The ROAD MAP comprises four areas:
- Backlight Setup (see page 38)
- Profile (see page 50)
- Setup (see page 19)
- Logbook (see page 43)

CUSTOMISE THE VISO II+™ SETTINGS

The VISO II+™ can be customised to your personal settings. Your settings will be stored and recalled after replacing batteries. When you first get the VISO II+™, we recommend you to go through the SETUP Selector to customise the VISO II+™ settings.

SETUP Selector

In the Setup Area the following options can be selected:

- Altimeter/Speedometer
- Feet/Meter when set to Altimeter
- Mph/Kmh when set to Speedometer
- Altitude offset
- Dive Type
- True Airspeed (TAS)/Skydiver's Airspeed (SAS)
- Set current year
- Set current date
- Set current time

- Preset jump counter
- Reset jump counter
- Turn the VISO II+™ OFF
- Lock window

Performing ACCESS:

Use ● to access Jump Profile, use ♥ to access Logbook information.

1 Press ● or ♥ and release quickly. The lock icon turns ON and OFF
2 When the lock icon turns ON again, immediately press the same button and keep it pressed (lock turns OFF)
3 When the lock icon turns ON again, release immediately

General note: The VISO II+™ goes out of ACCESS and back to the Main Window if no button has been pressed within 15 sec. ALL functions (except Power ON and backlight access) can be performed ONLY when the VISO II+™ is in ACCESS mode.
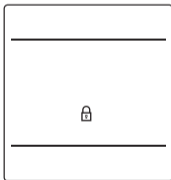
To enter the Setup Area

Press and hold ⊡ for 5 seconds from any jump profile or logbook information screen.

To leave the Setup Area

Wait until the display times out, or press ⊡ repeatedly until the lock window shows.
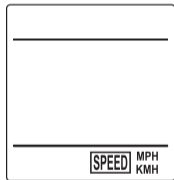Then press ⌃ or ⌄ to exit.

Lock Window

Altimeter/Speedometer Selector

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window

The VISO II+™ can be set to function either as an altimeter or as a speedometer.

Press $\wedge$ or $\vee$ to toggle between altimeter or speedometer mode.

The active selection flashes.

Press $\boxed{\bullet}$ to save setting and enter the Feet/Meter selector.

Feet/Meter Selector

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window

The VISO II+™ can display altitudes in either feet or meter.

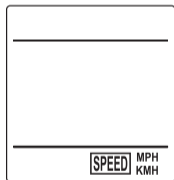Press △ or ▽ to toggle between feet or meter.

The active selection flashes.

Press ⊙ to save setting and enter the Mph/Kmh selector.

Mph/Kmh Selector

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window

The VISO II+™ can display the speed in either miles per hour or kilometers per hour.

Press $\triangle$ or $\triangledown$ to toggle between mph and km/h.

The active selection flashes.

Press $\boxed{\cdot}$ to save setting and enter Altitude Offset.

Note: Jump data is continuously stored in both mph and km/h. Stored information may be displayed in either unit of measurement by selecting the respective mode.

Altitude Offset

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • <mark>Altitude offset</mark> • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window

If the dropzone landing elevation differs from that of the aircraft take off elevation, offset the VISO II+™ prior to entering the aircraft as follows:

Press △ or ▽ to offset the current altitude.

Press ⊙ to save setting and enter the Dive Type selector.

Note: When performing altitude offset, the VISO II+™ enters Jump Mode and the altitude offset will be retained for 14 hours, if no jump is made. After 14 hours the VISO II+™ recalibrates to the field elevation where it is currently located. The selected Offset Altitude remains displayed in the Main Window after VISO II+™ goes out of ACCESS. When offsetting to a negative altitude the display will flash between minus (-) and the selected negative altitude. The altitude offset is not retained when the VISO II+™ is powered OFF.

Dive Type Selector

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window

The Dive Type mode can be used to change parameters when the VISO II+™ detects freefall exit and canopy deployment.
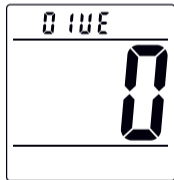

0: Default

1: Slow
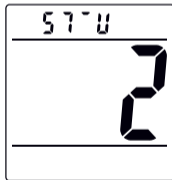
2: Student

Press ⌃ to scroll forward through the dive type list.

Press ⌄ to scroll backward through the dive type list.

Press • to save setting and enter the TAS/SAS Selector.

Dive type 0
This is the VISO II+™ factory default parameters.

Dive Type 1: SLO (Slow)
In SLO the exit fall rate and deployment calculation parameters are changed to fit very slow falling types of dives, like wing suit dives, etc.

Dive Type 2: STU (Student)
In STU the descent rate parameters are changed to allow detection of short freefalls, (2 sec).

True Airspeed (TAS)/Skydiver's Airspeed (SAS) Selector

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window

True Airspeed (TAS) and **Skydiver's Airspeed (SAS)** are two methods of calculating the airspeed of a moving, flying, or falling object.

TAS is a term used in aviation: It is the speed of an object relative to the surrounding air, regardless of the altitude.

SAS is a concept developed by LB Altimeters: SAS is the speed of a skydiver calculated from measurements of air pressure and temperature and converted to a fixed air pressure (875.3 mb) and a fixed temperature (+7.080 °C) which corresponds to 4,000 feet ASL.

See separate section on page 61 for more information about TAS and SAS.
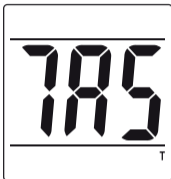
Press △ or ▽ to toggle between TAS and SAS.
The active selection flashes.

Press ⊙ to save setting and enter the Set Current Year
selector.
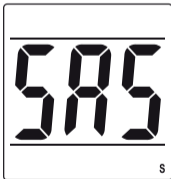
Note: Jump data is continuously stored in both TAS and SAS. Stored information may be displayed in either unit of measurement by selecting the respective mode.

Recommendation

When using the VISO II+™ as a speedometer in a big way base it is recommended to set it to SAS. SAS will show the same speed throughout the skydive (at the same body position), whereas TAS will show a different speed throughout the dive (the same body position, different air density).

Below are some recommendations and numbers for SAS:

A good base speed should be: 110-115 mph.
A high base speed should be: 120-125 mph (tendency to wobble when docking).
A slow base speed should be: 100-105 mph (jumpers start to go low).

See page 61 for more information about TAS and SAS.

Set Current Year Selector

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • `Set current year` • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window
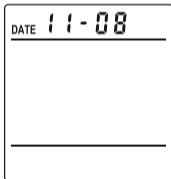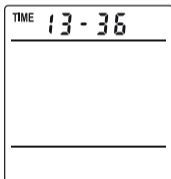
Press △ to increase year.
Press ▽ to decrease year.

Press ⊡ to save setting and enter the Set Current Date selector.

Set Current Date Selector

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window

DATE **11-08**

Press △ to increase date.
Press ▽ to decrease date.

Press ⊙ to save setting and enter the Set Current Time selector.

Note: Date format is MM:DD.

Set Current Time Selector

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window
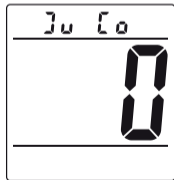
Press △ to increase time.

Press ▽ to decrease time.

Press ⊙ to save setting and enter the Preset Jump Counter selector.

Preset Jump Counter Selector

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window

The VISO II+™ can store up to 200 jumps in the logbook and numbers them starting from the jump number that you preset here. The counter can be used to keep track on the number of jumps and it can be reset at any time, but time and date for the last reset remains stored and cannot be erased.

Press △ to increase the jump counter.
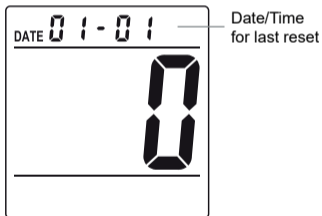Press ▽ to decrease the jump counter.

Press • to save setting and enter the Reset Jump Counter selector.

Reset Jump Counter Selector

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window


Date/Time for last reset

To reset the jump counter and delete the entire logbook, press and hold ⌃ and ⌄ at the same time for more then 10 seconds. Date and Time for the last reset is displayed together with the number of resets which have been made.

Press ⊙ to enter the Turn VISO II+™ OFF selector.

Note: Date, time and the number of resets which have been made are stored and there is no way to clear it. **There is no way to restore the logbook information!**

Turn VISO II+™ OFF Selector

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window

OFF
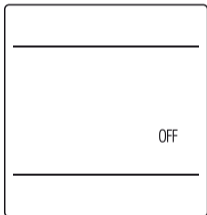
Press ⌃ and ⌄ at the same time and hold until the VISO II+™ turns OFF

Or, press • to enter the lock window.

We recommend that you switch OFF the VISO II+™ when traveling on commercial flights and when driving in mountainous areas.

Note: When switched OFF the VISO II+™ cannot be used for jumping. Customer settings are not lost when switched OFF. To power the VISO II+™ ON, see page 12.

Lock Window

Altimeter/Speedometer • Feet/Meter (Altimeter) • Mph/Kmh (Speedometer) • Altitude offset • Dive Type • True Airspeed (TAS)/Skydiver's Airspeed (SAS) • Set current year • Set current date • Set current time • Preset jump counter • Reset jump counter • Turn the VISO II+™ OFF • Lock window
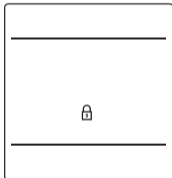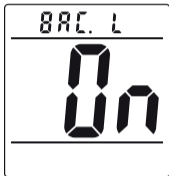
Press ⌃ or ⌄ to leave the Setup Area and return to the Main Window.

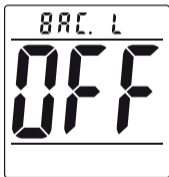Or, press ● to return to the Altimeter/Speedomter selector.

BACKLIGHT SETUP AREA

Press and hold ⌃ for 2 seconds to toggle between backlight ON and OFF.

Note: Backlight is specifically for night jumps.

Note: If the backlight is turned ON while the VISO II+™ is __not__ in Jump Mode, the backlight will automatically turn OFF after 30 minutes, if still not in Jump Mode.

If the backlight is turned ON while the VISO II+™ __is__ in Jump Mode, the backlight will remain ON until the unit goes out of Jump Mode.

See page 40 for more about Jump Mode.

ZEROING THE VISO II+™

The VISO II+™ continuously adjusts itself to the local elevation and displays 0 FT (MT) in the Altitude/Speed area. If the Altitude/Speed area does not display "0" prior to jumping, the unit has not yet adjusted itself to the local elevation and it must be manually zeroed.

To manually zero the unit either perform a reset or turn the unit OFF and then ON.

JUMP MODE

Shortly after takeoff the VISO II+™ switches to Jump Mode and displays the altitude or speed in the Altitude/Speed area.

- When the VISO II+™ is set to **Altimeter**, the ALTI and Feet/Meter icons are ON and it will display the altitude during climb, during freefall and under canopy.

- When the VISO II+™ is set to **Speedometer**, the SPEED, Mph/Kmh and TAS/SAS icons are ON and it will display the speed during climb, during freefall and under canopy.

DAILY JUMP COUNTER

The VISO II+™ can display the number of jumps made on last date and on 9 other jump dates.

In the Main Window, press and hold ⊡ for 2 seconds.
The unit displays the number of jumps completed on the last date.

Scroll using ⌃ and ⌄ to display number of jumps completed on other jump dates.

A maximum of 10 dates are stored.

JUMP DATA

After landing the jump data can be displayed on the LCD by accessing the **Logbook Area** and **Profile Area**.
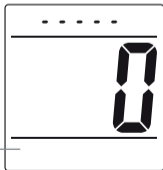
Logbook Area
The logbook can store up to 200 jumps, and be reset at any time.
It is not possible to delete a single jump.

Perform ACCESS with ▽ to enter the **Logbook Area**
(see page 20 for guide to performing ACCESS).

In the Logbook Area press ⦿ to toggle between

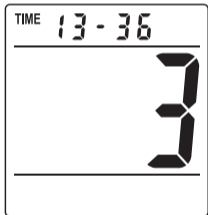|	
⦿ Jump number	⦿ Max. speed in freefall
⦿ Exit altitude	⦿ Max. speed under canopy
⦿ Deployment altitude	⦿ Padlock window
⦿ Freefall time	

Display when
logbook is empty

LOGBOOK AREA

Jump Number

Jump Number • Exit Altitude • Deployment Altitude • Freefall Time • Max. Speed in Freefall • Max. Speed under Canopy • Lock Window

```
TIME  13-36
      3
```

— Toggles between date and time

— Jump number

Press ⌃ or ⌄ to scroll in the jumps.

Date/Time information will switch accordingly in the "Date/Time Area".

Press ⦿ to go to Exit Altitude information.

Exit Altitude

Jump Number • Exit Altitude • Deployment Altitude • Freefall Time • Max. Speed in Freefall • Max. Speed under Canopy • Lock Window

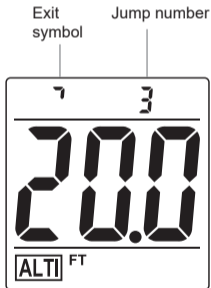Exit symbol   Jump number

20.0

ALTI FT

Press ⌃ or ⌄ to scroll through jumps in Exit Altitudes.

Press ⦿ to go to Deployment Altitude information.

Note: The LCD may show 3 different displays, depending on what altitude value is shown. See page 15.

Deployment Altitude

Jump Number • Exit Altitude • Deployment Altitude • Freefall Time • Max. Speed in Freefall
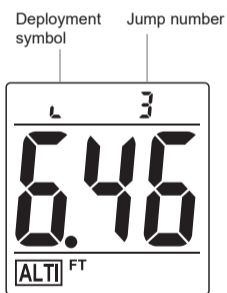• Max. Speed under Canopy • Lock Window

Deployment symbol   Jump number

Press ⌂ or ⌄ to scroll through jumps in Deployment Altitudes.

Press • to go to Freefall Time information.

Note: The LCD may show 3 different displays, depending on what altitude value is shown. See page 15.

Freefall Time

Jump Number • Exit Altitude • Deployment Altitude • Freefall Time • Max. Speed in Freefall
• Max. Speed under Canopy • Lock Window

Time   Jump number

```
TIME          3

92
```
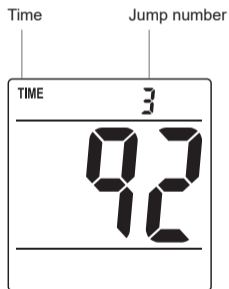
Press △ or ▽ to scroll through jumps in Freefall Times.

Freefall time is recorded in seconds.

Press ● to go to Max Speed in Freefall information.

Maximum Speed in Freefall

Jump Number • Exit Altitude • Deployment Altitude • Freefall Time • Max. Speed in Freefall
• Max. Speed under Canopy • Lock Window

Max. freefall speed symbol Jump number

TAS/SAS

Press △ or ▽ to scroll through jumps in Max Speed in Freefall.

Press ⊙ to go to Max. Speed under Canopy information.

Note: In the lower right hand corner of the display a "T" or an "S" will indicate whether the VISO II+™ is set to "TAS" or "SAS".

For more information about TAS and SAS, see page 60.

Maximum Speed under Canopy

Jump Number • Exit Altitude • Deployment Altitude • Freefall Time • Max. Speed in Freefall • Max. Speed under Canopy • Lock Window

Max. canopy speed symbol   Jump number

TAS/SAS
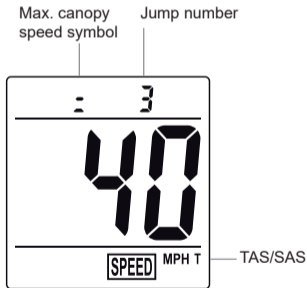
Press △ or ▽ to scroll through jumps in Max Speed in Freefall.

Press • to go to lock window.

Note: In the lower right hand corner of the display a "T" or an "S" will indicate whether the VISO II+™ is set to "TAS" or "SAS".

For more information about TAS and SAS, see page 60.

Lock Window

Jump Number • Exit Altitude • Deployment Altitude • Freefall Time • Max. Speed in Freefall • Max. Speed under Canopy • Lock Window
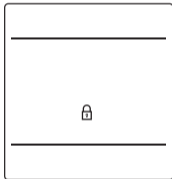
Press △ or ▽ to leave the Logbook Area and return to the Main Window, or press ⊡ to return to Logbook Area.

PROFILE AREA

The **Profile Area** features playback of the altitude/speed profile for the last jump.

Note: Speed information is available in playback mode, if freefall has lasted 6 seconds or more.

Perform ACCESS with ⦁ to enter the Profile Area. See page 20 for information about performing ACCESS.

In the Profile Area press ⦁ to display
- ⦁ Altitude playback information
- ⦁ Speed playback information
- ⦁ Lock window

Display when Profile Area is empty (no jumps stored)

Playback Altitude versus Time

Time in profile

```
00-28
1.28
ALTI FT
```

Scroll

Press ⌃ to playback the altitude profile at ¼ speed

Press ⌃ twice to playback in real time

Press ⌃ three times to playback at 2x speed

Press ⌃ four times to playback at 5x speed

Press ⌄ to playback the profile in reverse at ¼ speed

Press ⌄ twice to playback in reverse in real time

Press ⌄ three times to playback in reverse at 2x speed

Press ⌄ four times to playback in reverse at 5x speed

Press • to stop playback

Press ⌃ or ⌄ to resume playback or press • to go to Playback Speed Versus Time.

Playback Speed versus Time

Playback Altitude versus Time • Playback Speed versus Time • Lock Window

Time in profile

Scroll
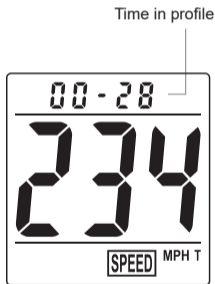
Press ⌃ to playback the speed profile at ¼ speed

Press ⌃ twice to playback in real time

Press ⌃ three times to playback at 2x speed

Press ⌃ four times to playback at 5x speed

Press ⌄ to playback the profile in reverse at ¼ speed

Press ⌄ twice to playback in reverse in real time

Press ⌄ three times to playback in reverse at 2x speed

Press ⌄ four times to playback in reverse at 5x speed

Press • to stop playback

Press ⌃ or ⌄ to resume playback or press • to go to Lock Window.

Important Notice about Speed Recordings

Experience has shown that when mounting the VISO II+™ on the hand or belly, different air pressures induced by hand or body movements may result in incorrect recordings of speeds.

For more information about using the VISO II+™ as a speedometer, see page 16.

Lock Window

Playback Altitude versus Time • Playback Speed versus Time • Lock Window
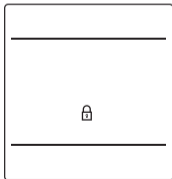
Press ⌃ or ⌄ to leave the Profile Area and return to the Main Window, or press ● to return to the Profile Area.

AIR FILTER

The VISO II+™ is water resistant.

The Air Filter is the white circular part mounted on the side of the unit. If it becomes wet, let the VISO II+™ dry in a warm place for 48 hours.

Note: The Air Filter must be replaced if jumping is resumed quickly or if the VISO II+™ has been submerged into water.

Air Filter removal tool kit is an accessory which can be purchased separately.

RESETTING THE VISO II+™

Insert a paperclip into the hole on the battery cover of the unit and release. The unit restarts.

After battery replacement or resetting, the system requires 2 minutes to calibrate itself before displaying the correct battery status.

While calibrating, the battery icon toggles between full and low.

Note: Reset the unit after battery replacement, when troubleshooting, and when verifying software version number.

BATTERY REPLACEMENT

⚠ **WARNING**

KEEP BATTERIES OUT OF REACH OF CHILDREN
Swallowing can lead to chemical burns,
perforation of soft tissue, and death.
Severe burns can occur within 2 hours of
ingestion. Seek medical attention immediately.

Carefully remove the screw from the battery cover and remove batteries. Install new batteries using the correct polarity. Use only Renata CR2325. Do not over-torque the screw

After battery replacement or resetting, the battery system requires 2 minutes to calibrate before showing the correct status. While calibrating, the battery icon toggles between full and low.

Note: Customer settings are not lost when removing batteries. However, the built-in clock may need to be reset to the current time.

BATTERY STATUS

Full capacity: Symbol shows two black bars inside the battery icon.

Half capacity: Symbol shows one black bar inside the battery icon.

Low capacity: Symbol shows no black bars, just an "empty" battery icon. Batteries should be replaced as soon as possible.The "Low bat" flashes once every 15 sec.

Caution: Do not make night jumps at sub zero temperatures when battery indicator shows low capacity.

Empty batteries: The battery icon flashes.
Replace batteries immediately.

FIRMWARE VERSION

Factory reference number
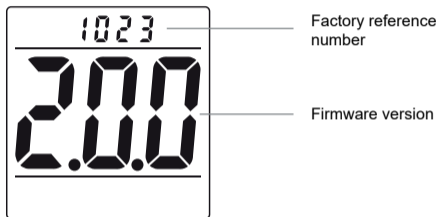
Firmware version

Perform a reset or turn the unit OFF and then ON.

The VISO II+™ runs a self-test and displays all icons.

The unit then displays the firmware version together with a factory reference number.

For information about how to perform reset, see page 55

TROUBLE-SHOOTING

When the VISO II+™ detects a fault, an error ("ERR") symbol and a trouble shooting number is displayed in the upper part of the screen. At the same time the unit beeps every minute. The "ERR" trouble shooting codes are as follows:

ERR 2:   transducer defective,
ERR 3:   transducer out of range,
ERR 4:   crystal defective,
ERR 5:   comm. error to flash,
ERR 100: flash defective.

Remedy: Perform a reset (see page 55).

If the unit still does not function correctly even after replacing the batteries and performing a reset, perform the following: Press and hold ⊡ while resetting.
The VISO II+™ resets to factory settings and beeps three times. ***Note: All logbook data will be lost***.

If the unit is still faulty, please contact your local dealer or LB Altimeters.

APPENDIX

TAS and SAS

Definitions

True Airspeed (TAS) and Skydiver's Airspeed (SAS) are two methods of calculating the airspeed of a moving/flying/falling object.

TAS is a term used in aviation: It is the speed of an object relative to the surrounding air, regardless of the altitude.

SAS is a new concept developed by LB Altimeters: SAS is the speed of a skydiver calculated from measurements of air pressure and temperature and converted to a fixed air pressure (875.3 mb) and a fixed temperature (+7.080 °C) which corresponds to 4,000 feet ASL.

TAS

A skydiver's True Airspeed (TAS) relative to the ground changes as a function of the altitude (air pressure) and temperature which makes it difficult to compare fall-rates. Example: A skydiver (in a fixed freefall position) who has a terminal fall rate of 62 meters/sec at 10,000 feet will have a terminal fall rate of 50 meters/sec at 3,000 feet.

It will be seen that the difference in altitude (air pressure) makes it difficult to compare the fall-rates when measured using TAS.

SAS

The SAS formula calculates airspeed (using the same metrics used with TAS) as though the complete skydive had been performed at a fixed air pressure and a fixed temperature which corresponds to 4,000 feet ASL. 4,000 feet is chosen as the reference altitude by LB Altimeters since this is the average altitude at which the working time of a skydive is normally ended.

Conclusion

Using SAS, skydivers in any body position can express their vertical speed by a number (SAS). This number remains virtually constant regardless of altitude with little or no variance due to temperature differences and can be compared with the airspeeds of other skydivers.

This means that regardless of the elevation of the DZ you are jumping at, Skydiver's Airspeed (SAS) will be the same for the same body position.

SAS is very useful when doing big formation skydiving. If using TAS, it will seem like the base is slowing down the fall rate during the entire skydive.

For information about using the VISO II+™ as a speedometer, see page 16.

SPECIFICATIONS

Mechanical

Dimensions:	55 x 40 x 13 mm (2.2" x 1.6" x 0.5")
Weight:	34 g (1.1 oz)
LCD area:	5 cm² (0.8 inch²)

Logbook

Maximum jumps:	200	
Logbook information:	Exit altitude	
	Deployment altitude	
	Freefall time	
	Max. speed in freefall	
	Max. speed under canopy	
Tolerances:	Exit altitude:	± 1.2%
	Deployment altitude:	± 1.2%
	Freefall time:	± 1 sec
	Speed (TAS/SAS):	± 3 mph (± 5 kmh)

Profile Storage

Continued storage of last jump

Maximum logging time: 10 minutes

Sampling rate: 4/sec.

Maximum logging altitude: 39,999 feet (12,191 m)

Factory default settings

Mode	Altimeter
Feet/Meter:	Feet
Mph/Kmh:	Mph
TAS/SAS:	TAS
Type of Dive:	0
Date:	2018:01:01 (year, month, date)
Time:	12:00:00 (hours, minutes, seconds)

Other

Present altitude:	± 10 ft (5 meters)
Operating altitude:	0 to 40,000 ft (0 to 12,191 m)
Clock:	± 4 min/month
Operating Temperature Range:	-30C to +60C (-22F to +140F)
Altitude Offset Range:	-9900 ft to +9900 ft
	-3000 meter to +3000 meter
Daily Jump Counter:	Max 10 dates
Battery type:	2 x Renata CR2325
Battery Life Time (at normal use):	approximately 2 years
LB Altimeters part no.:	205442
NATO Stock no.:	6605-22-613-6341

WARRANTY

The following conditions apply to the VISO II+™ warranty:
If within 24 months of the purchase of VISO II+™ a defect or damage is identified by faulty manufacture, LB Altimeters will repair the unit at no cost to the end user.

To make a claim under this warranty, send the unit to an authorized dealer or directly to LB Altimeters together with the dated purchase invoice or receipt.

The warranty becomes void if damage is caused by external circumstances or if the unit has been serviced or repaired by third parties unauthorized by our national agents or LB Altimeters.

All further claims, especially for defects after skydiving accidents, are excluded. LB Altimeters has no obligation to honor any extension of warranty granted by any national agent.

Waiver of Liability

The buyer and user of the VISO II+™ indemnify the manufacturer and vendor from any liability for damage incurred before, during and after skydiving with the instrument.

Visit lbaltimeters.com
for manual
and support

Instructional videos
and YouTube
channel