



ARES II MANUAL



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LB Altimeters operates a policy of continuous development
Therefore, we reserve the right to make changes and improvements to any of the products described in
this guide without prior notice

WARNING

The **ARES II**, even when used as your primary means of maintaining altitude awareness, may fail. Always use your eyes to determine your approximate altitude.

Altimeters may give erroneous readings if you are tumbling or the altimeter is in a burble (wake). Chest mount altimeters are more vulnerable to this problem compared to hand/wrist mounted altimeters. If you are in doubt about how this limitation affects your skydiving, consult a licensed instructor

DO NOT use this equipment unless you are currently participating in, or have successfully passed, an approved parachuting or free fall course

Please read ALL instructions carefully prior to use

The **ARES II** must be switched **ON** prior to entering the airplane

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INTRODUCTION

The **ARES II** is the most high-end, accurate, and reliable visual digital altimeter to be developed by LB Altimeters to date. The **ARES II** software includes second-to-none error correction to ensure correct live altitude readings in any application

Features

- Large high contrast, non-flicker, LCD display
- Electroluminescent backlight for night jumping
- Waterproof and shock resistant aluminum casing with hardened glass
- Quick buttons for access to primary functions
- Jump profile playback
- Basic logbook and daily jump counter

Functions

- Calibration to the local elevation
- User selection of feet / meter and mph / kmh
- Stores up to 10 min of data from last jump
- Log book stores up to 200 jumps including:
 - o Date / time
 - o Exit / opening altitudes
 - o Free fall time
 - o Max / average speed

DESCRIPTION

- 1 Altitude Offset / Up
- 2 Main
- 3 Back light / Down
- 4 Display
- 5 Battery cover
- 6 Reset button



DISPLAY

Startup

When turning ON ARES, the unit will display the following during the startup self-test



Full display



Air pressure reading (mbar)
Firmware version



Temperature (Celsius)
Battery voltage (V)



Self-test control number

Main window

The main window is the default window after the unit is turned ON, and starting point for any further actions

- 1 Time/date indicator
- 2 Time/date display
- 3 Altitude display (flashing when negative)
- 4 Battery indicator
- 5 Backlight indicator
- 6 Feet / meter indicator



4

5

6

3

Altitude window

Shortly after take-off, the main window will automatically display altitude readings
The displayed altitude increments (feet / meter) depend on the current altitude



0 - 990
Altitude display: Normal
Increments of 10 feet / 5 meters



1.000 – 9.990
Altitude display: 10s
Increments of 10 feet / 10 meters



10.000 and above
Altitude display: 100s
Increments of 100 feet / 100 meters

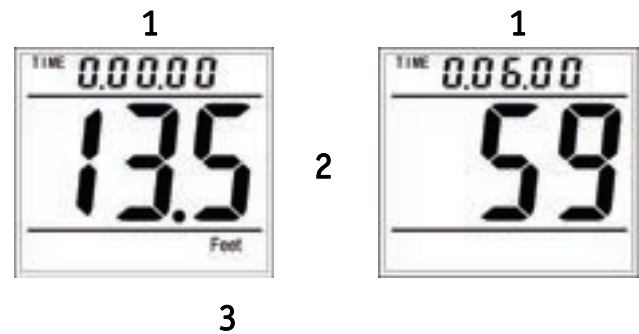
Logbook and Jump Info / Settings

Display examples, after performing ACCESS, are shown in the separate sections

Jump Profile





The jump profile window is used when playing back the last jump

- 1 Time display
- 2 Altitude display / Speed display
- 3 Feet/meter indicator



Battery Indicator

The battery indicator shows the current battery status

- | | | |
|-------------------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------------------|
|  | Full capacity: | Two black bars are shown inside the battery symbol |
|  | Half capacity: | One black bar is shown inside the battery symbol |
|  | Low capacity: | The battery symbol is empty. The batteries must be replaced as soon as possible |
|  | Empty: | The battery symbol is flashing. Do not continue jumping. Replace batteries immediately |

Warning: Do not perform night jumps, or jumps in sub-zero temperatures (Celsius) when the battery symbol shows low capacity

MENU OVERVIEW

The ARES II menu system consists of 3 separate areas, which include the following (use road map for reference)

Quick Buttons	Logbook and Jump Info	Settings
<ul style="list-style-type: none"> Turn ON unit Altitude Offset Daily Jump Counter Backlight 	<ul style="list-style-type: none"> Daily Jump Counter Total Jumps Exit Altitude Opening Altitude Freefall Time Average Freefall Speed Maximum Freefall Speed Altitude Profile - Last Jump Speed Profile - Last Jump 	<ul style="list-style-type: none"> Year Date Time Jump Counter Units - Altitude Units - Speed Dive Type Delete Last Jump Delete Logbook Turn OFF

PERFORMING ACCESS

In order to access each of the individual areas, the following steps must be performed from the main window (Use road map for reference)

Quick Buttons

Press and hold the designated button for 5 seconds

Logbook and Jump Info



Press and release



Press



----- hold button down -----



Release



Logbook and Jump Info window

Settings



Perform ACCESS to Logbook and Jump Info



Press



--- hold for 5 seconds ---



Release



Settings window

QUICK BUTTONS

Quick Buttons are accessible from the Main Window and do not require ACCESS

Turn ON unit

Turn ON **ARES II** on the ground before use. The unit runs a self-test and calibrates to the current ground level
The **ARES II** will stay turned ON for 14 hours after the last jump or after last ACCESS performed

With the unit OFF, press and hold any button for 5 seconds

If **ARES II** is turned on during flight, the present altitude must be adjusted manually.



Altitude Offset


Use Altitude Offset to adjust for altitude difference between landing zone and take-off elevation


To ensure proper ground reference on landing zone:

Select a **positive** offset, if take-off elevation is **HIGHER** than the landing zone
Select a **negative** offset, if take-off elevation is **LOWER** than the landing zone



Press and hold  for 5 seconds

Press  to increase altitude

Press  to reduce altitude

Press  to confirm Altitude Offset setting

The Altitude Offset will now be displayed in the main window
(flashing when negative)




Altitude Offset must be confirmed within 15 seconds following an altitude change
Altitude Offset is cancelled if no button is pressed within 15 seconds


Note: If using Altitude Offset during flight either use the aircraft altimeter for reference

Daily Jump Counter

Display daily jump counter for individual dates

Press and hold  for 5 seconds

Press  to select later date(s)


Press  to select earlier date(s)

(Press  to exit Daily Counter)



Daily Jump Counter will exit if no button is pressed within 15 seconds after ACCESS

Backlight

 Indicates if backlight is ON or OFF

Enable/disable backlight:

Press and hold  for 5 seconds

Backlight will turn OFF automatically after 10 min, if **ARES II** is not in Flight Mode
Backlight will remain ON while **ARES II** is in Flight Mode



LOGBOOK AND JUMP INFO

Logbook and Jump Info contain detailed information regarding previous jumps

Perform **ACCESS** to enter the first entry of **Logbook and Jump info**

Press **▲** to scroll through all the entries

ARES II exits **Logbook and Jump info** if no button is pressed within 15 seconds

Daily Jump Counter

Displays daily jump counter for individual dates

Press **▲** to select later date(s)

Press **▼** to select earlier date(s)

Press **■** to continue



Total Jumps

Displays total number of jumps

Select jump number to display more information

Press **▲** to select next jump

Press **▼** to select previous jump

Date and time for the selected jump is shown at the top of the screen

Press **■** to continue



Exit Altitude

Displays exit altitude for selected jump

Press **▲** to select next jump

Press **▼** to select previous jump

Selected jump number is shown at the top of the screen

Press **■** to continue



Opening Altitude

Displays opening altitude for selected jump

Press **▲** to select next jump

Press **▼** to select previous jump

Selected jump number is shown at the top of the screen

Press **■** to continue



Freefall Time

Displays freefall time registered for selected jump

Press **▲** to select next jump

Press **▼** to select previous jump



Selected jump number is shown at the top of the screen

Press **■** to continue



Average Freefall Speed

Displays average speed for selected jump

Press  to select next jump
Press  to select previous jump



Selected jump number is shown at the top of the screen

Press  to continue



Maximum Freefall Speed

Displays maximum speed for selected jump

Press  to select next jump
Press  to select previous jump





Selected jump number is shown at the top of the screen

Press  to continue



Altitude Profile - Last Jump

Displays the altitude profile, at a given time, for the last jump

Press  to scroll forward in time (seconds)
Press  to scroll backwards in time (seconds)
Holding down either  /  will fast scroll





Time is shown at the top of the screen

Press  to continue




Speed Profile - Last Jump

Displays the speed profile, at a given time, for last jump performed

Press  to scroll forward in time (seconds)
Press  to scroll back in time (seconds)
Holding down either  /  will fast scroll


Time is shown at the top of the screen

Press  to continue



Note: Freefall time must be minimum 6 seconds to store a speed profile

Exit Logbook and Jump Info

 is flashing

Allows manual exit from menu

Press  or  to exit from menu


Press  to start from the beginning



SETTINGS

Settings are used to customize the ARES II


Perform ACCESS to enter the first entry of Settings

Press  to scroll through all settings

ARES II will exit Settings if no button is pressed within 15 seconds


Year

Sets current year

Press  to select next year


Press  to select previous year

Year is displayed at the top of the screen

Press  to continue


Date

Sets current date

Press  to select next date

Press  to select previous date


To change month:
Scroll DAY until reaching 31 or 1, then ARES II will scroll MONTH up/down


Press  to continue




Time

Sets current time in 24-hour format

Press  to add minutes/hours

Press  to subtract minutes/hours

Holding down either  /  will fast scroll time


Press  to continue



Jump Counter

Sets the current total number of jumps

Press  to add jumps

Press  to subtract jumps

Holding down either  /  will fast scroll

Press  to continue



Units - Altitude

Sets altitude display in either feet or meters

Press  or  to switch units


Press  to continue



Units - Speed

Sets altitude display in either miles/hour or kilometers/hour

Press  or  to switch units



Press  to continue




Dive type

Sets the current dive type used for logging data:

- 0: Standard
- 1: Slow The exit and deployment parameters are designed to fit very slow fall rates, such as wingsuiting
Freefall detection is very sensitive, and may register jumps if the airplane descends
- 2: Student The descent rate parameters are changed to fit very short free falls (2 seconds)

Press  or  to switch between Dive Types

Press  to continue




Delete Last Jump

Deletes the last jump in the logbook

To avoid unintentional deletions, the counter at the top of the screen must be set to '5'

Press  and  to match counter to '5'
Press  to accept deletion of last jump

WARNING:

If the counter is set at '5',  cannot be used to scroll through settings and will delete last jump. Once deleted, the jump data is lost




Press  to continue




Delete Log Book


Deletes the entire logbook

To avoid unintentional deletions, the counter at the top of the screen must be set to '19'

Press  and  to match counter to '19'
Press  to accept deletion of entire logbook

WARNING:

If the counter is set at '19',  cannot be used to scroll through settings and will delete the entire logbook. Once deleted, the logbook data is lost




Press  to continue



Turn OFF


Turns **ARES II** OFF


To avoid unintentionally turning the **ARES II** OFF, the counter at the top of the screen must be set to '5'

Press  and  to match counter to '5'
Press  to accept turning **ARES II** OFF




Warning:

If the counter is set at '5',  cannot be used to scroll through settings and will turn **ARES II** OFF

Press  to continue

Exit Settings

 is flashing

Allows manual exit from menu

Press  or  to exit from menu

Press  to start from the beginning



FUNCTIONALITY

Automatic Calibration / Flight Mode

After the **ARES II** is turned ON, it will continue to automatically calibrate itself to the field elevation where it is currently located. This will continue after each jump / landing, to ensure the unit is always zeroed before jumps are made and will take into account weather related pressure changes

After take-off, the **ARES II** will enter Flight Mode.

Altitude Offset

When performing Altitude Offset, the **ARES II** enters Flight Mode and will retain any offset for 14 hours if no jump is made. After 14 hours the unit calibrates itself to the field elevation where it is located.

To exit Flight Mode, turn the unit OFF, then ON.

Manual Zeroing

If the unit does not display the correct altitude when arriving at the drop zone, it must be manually zeroed

Turning the unit OFF, then ON, will clear any Altitude Offset and re-enter automatic calibration

Automatic OFF

The **ARES II** automatically switches OFF if no jump has been made within 14 hours, no button has been pressed within 14 hours, or the unit has not been in Flight Mode within 14 hours

MAINTENANCE

Reset ARES II

A reset may be necessary for troubleshooting and firmware verification

*Locate the small hole on the side of the battery cover
Insert a paper clip or similar into hole, press and release
Battery system calibrates*

The firmware version will be displayed after reset



Battery Change

Only use Renata CR-2325 batteries (2 ea.)

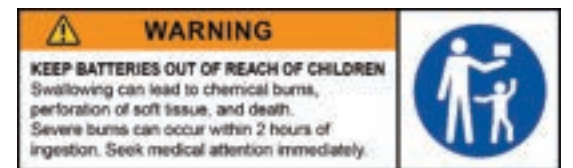
Battery cover screw specs: M3/T6 head (4.5mm length)

*Remove the screws and battery cover
Remove both batteries and note the polarity
Install 2 new batteries
Install battery cover, and ensure rubber seal is in correct placement
Place and tighten screws, using a torque screwdriver set at 0.3 Nm*

*Reset **ARES II** after battery replacement*

All settings and logbook is kept in a non-volatile memory and will not be lost, however time may need to be set again after battery change

WARNING: The battery cover and seal must be installed correctly, using correct screws and torque, before any water jumps are made



Air Filter Change

The **ARES II** is waterproof to a depth of 3 feet, for 2 hours

If the **ARES II** is submerged into water, allow the unit and air filter to dry in a warm place for 48 hours
The air filter must be replaced if jumping is to be resumed immediately, or if the air filter is suspected to be contaminated

*Remove the screws and battery cover
Install new battery cover and ensure rubber seal is in correct placement
Place and tighten screws using a torque screwdriver set at 0.3 Nm*

*Reset **ARES II** after battery cover replacement*

Air filter, and filter removal tool, are accessories that can be purchased separately



Trouble Shooting

If the **ARES II** detects an issue, an error symbol is shown (ERR) with a number at the top of the screen

Error codes:

- 1: Transducer defective
- 2: Transducer out of range
- 3: Transducer Time Out too long
- 4: Crystal defective
- 5: Communications error to flash
- 100: Flash defective

*Always restart **ARES II** to attempt to remedy a single ERR code*

If the ERR code persists, then also perform battery change

After unsuccessful restart of the **ARES II**, a Factory Reset is necessary:

Press and hold  during reset, to perform Factory Reset

WARNING: All logbook data will be lost with Factory Reset

If the **ARES II** is still faulty after Factory Reset, it must be serviced by an LB Altimeters Service Center

SPECIFICATIONS

Mechanical:

Casing:	Rugged and precision machined aircraft aluminum
Screen glass:	2mm thickness - Hardened glass lens
Dimensions:	64mm x 44mm x 15mm
Weight:	68g
LCD viewing area:	34mm x 29.5mm
Backlight intensity steps:	1 - fixed

Altitude Adjustment:

Altitude in feet /meter offset:	Yes
Altitude feet /meter offset range:	-19900 ft. to +19900 ft. (-6000 m to +6000 m)
Present altitude steps:	+/- 10 ft. (5 meters)

Tolerances:

Altitude display:	+/- 1%
Exit altitude:	+/- 1.2%
Deployment altitude:	+/- 1.2%
Freefall time:	+/- 1 sec
Speed:	+/- 3 mph (+/- 5 km/h)

Logbook:

Minimum freefall time for logbook generation in Normal mode:	8 seconds
Minimum freefall time for logbook generation in Student mode:	3 seconds
Maximum logging altitude (Normal mode):	30,000 ft. (9,150 m)
Maximum logging altitude (Student mode):	40,000 ft. (12,200 m)
Maximum Profile storage (last jump):	10 minutes. Sampling rate: 4/sec.
Accumulated number of jumps:	999
Exit Altitude, Deployment, Freefall Time, Speed:	200 Jumps
Storage principle:	First In First Out

Factory default settings:

Feet / meter:	Feet
Mph / kmh:	Mph
Type of Dive:	0
Date:	2018:1:1 (year : month : date)
Time:	12:00:00 (hours : minutes : seconds)

Other:

Operating altitude:	0 to 40,000 ft. (0 to 12,200 m)
Clock:	+/- 4 min/month
Storing Temperature:	-20C to +70C
Operating Temperature Range:	-20C to +60C continuous operation
Will operate at -50C for:	10 minutes
Storing Pressure:	200 to 1075 mbar
Maximum allowable humidity:	Up to 99,9% relative humidity
Waterproof:	3 feet for 2 hours
Function Period:	14 hours
Maintenance:	4, 8 and 12 years, from date of manufacture
Battery type:	2 x Renata CR 2325
L&B part no.:	295929
NATO Stock no.:	6675-22-630-2343

WARRANTY

The following conditions apply to the **ARES II** warranty:

If within 12 months of the purchase of **ARES 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 **ARES II** indemnify the manufacturer and vendor from any liability for damage incurred before, during and after skydiving with the instrument



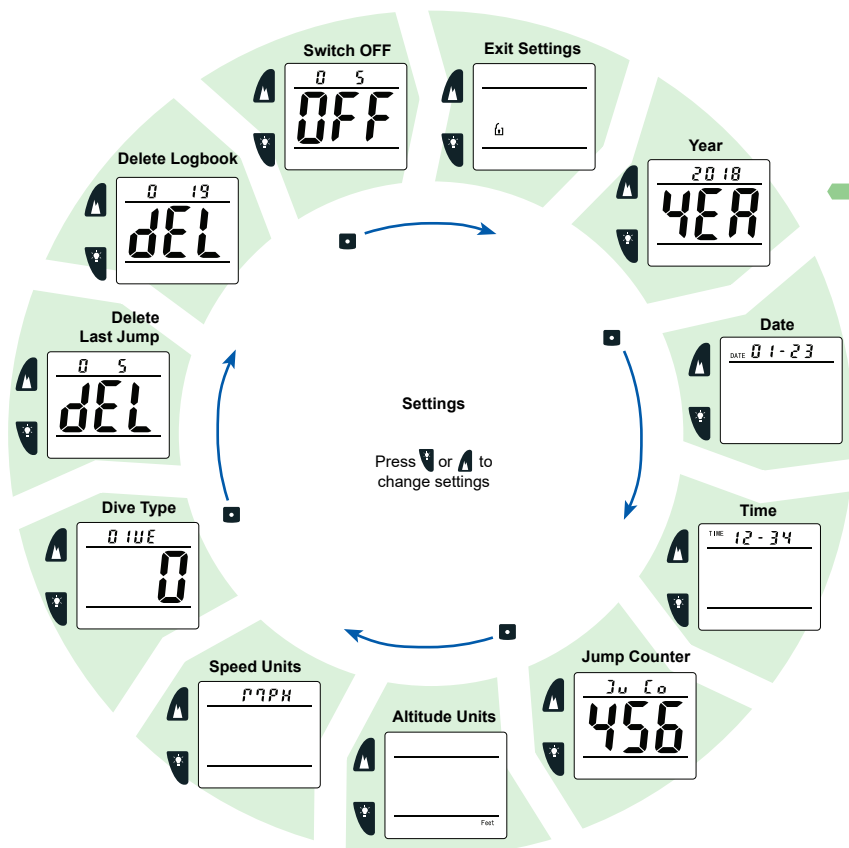
For download and support visit
www.LBAltimeters.com

ROAD MAP

ACCESS

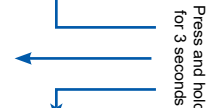
- 1 Press and release the **mode** button – the lock icon turns off
- 2 When the lock icon reappears, immediately **press and hold** the **mode** button – the lock icon turns off again
- 3 When the lock icon appears again, **release** the **mode** button . - The ARES II™ is now in **ACCESS** mode to Logbook and Jump Info.

Note: The ARES II™ exits ACCESS and returns to the Main Window if no button has been pressed within 5 seconds. ALL functions (except Power ON) can be performed ONLY when the ARES II™ is in ACCESS mode.



Daily Jump Counter

Altitude Offset

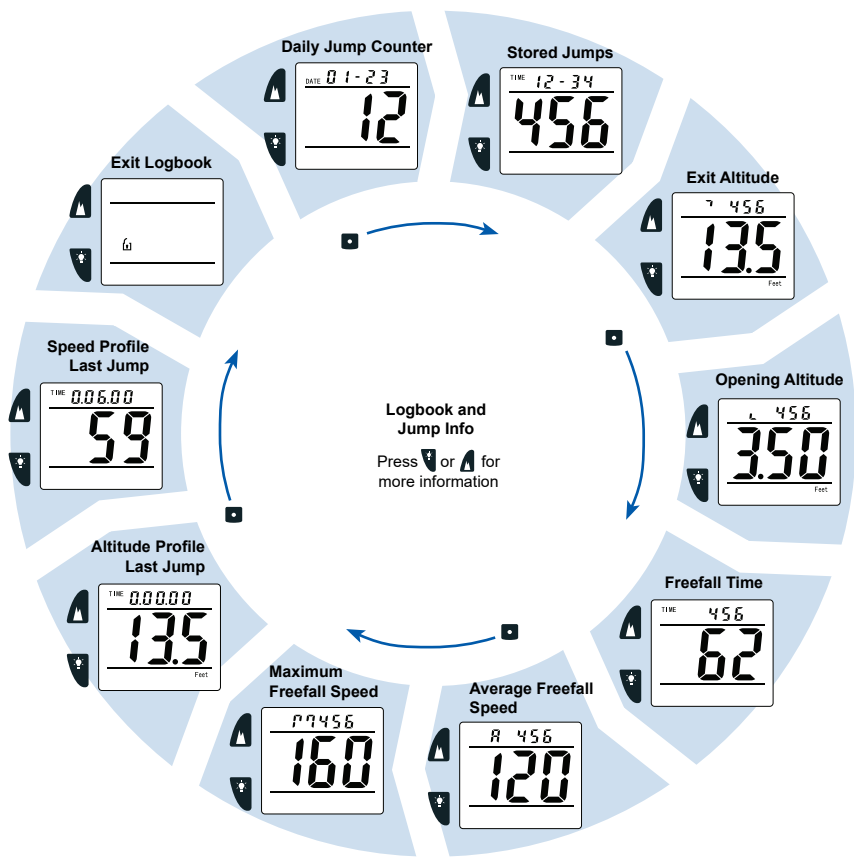


The ARES II™ has been powered OFF prior to shipping from our factory. To turn the **power ON**, press and hold any key for 5 seconds.



To save battery power, the ARES II™ will switch OFF after 14 hours of inactivity. Turn the unit ON before using it for skydiving.

ACCESS



Hold for 5 seconds