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ALTITRACK is a trademark of Larsen & Brusgaard, Denmark.

Larsen & Brusgaard 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.

CE

WARNING!

FAILURE TO FOLLOW ALL WARNINGS, INSTRUCTIONS, AND REQUIRED PROCEDURES MAY INCREASE THE RISK OF 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 on, or have passed an approved skydiving course.

Use the ALTITRACK™ at your own risk.

INDEX

Introduction

Analog Display with Digital Accuracy

At first glance, the ALTITRACK™ looks like many of the more common analog altimeters used throughout the world... but look a little closer. The ALTITRACK™ is the only sport altimeter with an analog face, but utilizes the most high tech and durable digital components for accuracy that surpasses every other mechanical sport altimeter currently available.

Imagine a visual altimeter that records your jump information from exit to landing, has the ability to download jump information to a computer, has an ergonomic fit, is both shock and water resistant, has upgradeable software... and most of all... is extremely easy to use. You just found the answer you've been looking for...ALTITRACK™.

1 - Introduction

1.1 Features

- 45 deg. offset scale for easy line of sight viewing when mounted on the hand/ wrist
- Electroluminescent backlight for night jumping
- Smooth, none erratic pointer movement... stepper motor controlled
- Automatic calibration to local elevation
- Freefall and canopy flight computer
- Scratch proof, antiglare lens made from high-impact etched glass
- Shockproof and water resistant
- LCD screen for easy and intuitive operation and information review
- Powerful electronic logbook packed with advanced features – easy access by simply turning over the altimeter
- Operational at sub-zero temperatures

1.2 Software & functions

- Storing up to 15 minutes of data of each jump with a total of 6.5 hours recording time (e.g. 200 jumps with two minute profiles)
- Records and displays jump details from exit to landing, date, jump number, exit altitude, opening altitude, freefall time and complete speed statistics for maximum and average speeds in TAS or SAS
- Choice of readings in feet or meters, mph or kmh
- Accumulates the total number of jumps up to 19,999 jumps
- Compatible with Jump-Track for download of data to PC or Mac via USB. (Jump-Track and USB-Track sold separately)
- Replay of any jump stored in the logbook with true pointer movement and display of speeds, altitudes, etc.
- Long lasting ½ AA battery
- Velcro strap for fast and easy mounting

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2 - Description

Fig. 1 – Analog face

2.1 Analog Face

1. Right Front Button
   - Power ON
   - Enable / Disable backlight
   - Power OFF

2. Left Front Button
   - Power ON
   - Perform ACCESS
   - Adjust altitude if the DZ elevation differs from that of the airport of take-off
   - Enable IrDa

3. “ACCESS” indicator
4. “LOW BAT” indicator
5. Data Port

2.2 Digital Face

Fig. 2 – Digital face

6. Rubber support
7. Battery compartment
8. LCD display
9. Left button
10. Mode button
11. Right button
12. Reset button (below battery cover)

2.3 PC Connection

Fig. 3 – PC Connection

13. Connector for PC data download and firmware upgrade (under rubber cover) (Jump-Track and USB-Track required)

2.4 Display

15. Jump Number in logbook

    Shows year when displaying date

    Shows hours when displaying time

16. Date / Time icons

17. Freefall and Canopy log indication

18. Exit Altitude in logbook

19. Freefall time in logbook

    Shows month when displaying date

    Shows minutes when displaying time

20. Dive Type icon

21. Jump Mode indicator

    Flashes when the ALTITRACK is in Jump Mode

22. Deployment altitude in logbook

    Displays current altitude when in “Altitude Screen”

23. Battery status

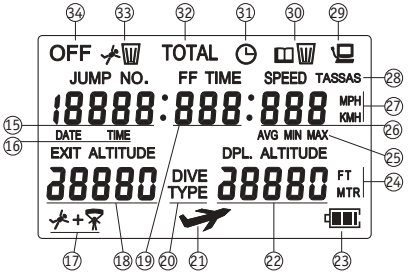


Fig. 4 – Digital face

24. Feet / Meter status
25. Average / Minimum / Maximum speed in logbook
26. Speed in logbook

    Shows day when displaying date

    Shows seconds when displaying time
27. MPH / KPH status
28. True Airspeed / Skydiver´s Airspeed status
29. PC status

    ON when connected to a PC
30. Delete logbook icon
31. Clock icon

    Used when displaying current time and total freefall time
32. Total icon

    Used when displaying total jumps and total freefall time
33. Delete current jump icon
34. OFF icon

    Used when turning the ALTITRACK OFF

3 - Power ON

NOTE: *The ALTITRACK must be switched ON prior to entering the airplane*

Press Right or Left Front Button until “ACCESS” and “LOW BAT” flashes. Then release the button.

The ALTITRACK can be used for jumping, if:
- The pointer moves from “6” to “0”.
- Battery capacity is sufficient.

The ALTITRACK **MUST NOT** be used for jumping, if:
- The LCD on the rear side displays an Error code (ex.: ERR2, ERR3, ERR4, ERR5, ERR100).
- The unit sounds a beep every minute.
- Battery capacity is insufficient.

Fig. 5 – Power ON

The unit displays “Logbook screen # 1”. (Main information)” on the LCD.
The LCD automatically switches OFF after 15 sec. To switch ON the display, press any of the three buttons below the LCD.

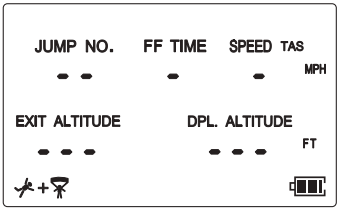


Fig. 6 - Logbook screen #1. No data stored

3.1 Before night jumping:
Verify that the backlight is functioning.

4 - Jump Mode

- Entering Jump Mode: Shortly after take-off (at approx. 1,000 feet/300 meters) the ALTITRACK switches to Jump Mode and the pointer moves to the present altitude. On the rear side LCD the “airplane icon” starts to flash.

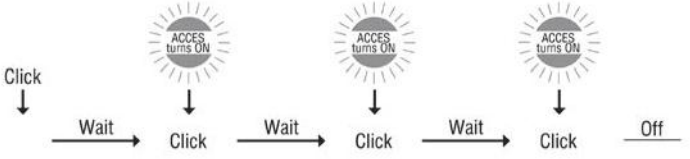
- Exiting Jump Mode: The ALTITRACK exits Jump Mode automatically within one minute after it senses ground level again. If the ALTITRACK has been preset to a different altitude it exits Jump Mode as described in paragraph 6.

5 - Power OFF

1. Press and let go of Right Front Button
2. When “ACCESS” lights, press immediately and let go again
3. When “ACCESS” lights, press immediately and let go again
4. When “ACCESS” lights, press immediately and let go again
   The pointer moves to “6” and unit switches OFF

Fig. 7 – Power OFF

NOTE: *If the ALTITRACK is not manually switched OFF, it will automatically switch OFF 14 hours after the last jump or 14 hours after the last pressing of any button (28 hours in case adjustment of altitude has been performed without jumping with the ALTITRACK).*



6 – Zeroing and Altitude Offset

6.1 Zeroing the ALTITRACK

The ALTITRACK continuously adjusts to the local elevation and the pointer is at the zero "0" position. If the pointer is not at "0" prior to jumping, the unit has not adjusted itself to the local elevation and it must be manually zeroed.
Turn the unit OFF and then ON.

6.2 Altitude Offset

If the elevation at the DZ is different from that of the airport of take-off, then adjust the ALTITRACK before entering the airplane by activating the "Altitude Offset" mode which is called "ACCESS" :

1. Press Left Front Button and release quickly
2. When "ACCESS" lights, press the button immediately and keep it pressed
3. When "ACCESS" lights again, release the button immediately

4. Press the Right Front Button (+) or the Left Front Button (-) to move the pointer to the DZ altitude. Range: -3,000 ft / -1000 m to +21,000 ft / 6000m.

The selected altitude is displayed on the screen on the rear side of the altimeter as well.

When adjusting to a negative altitude on the ground, use the inner negative scale indication or the value displayed on the rear side of the altimeter.

The ALTITRACK exits "Altitude Offset" mode if no button is pressed within 5 seconds.

NOTE: *If the DZ elevation is higher than 3,000 ft / 1000 m from that of the airport of take-off, then use this procedure:*

- The airplane must fly level at the same altitude as that of the DZ.

- At that altitude switch the ALTITRACK OFF and the ON again and let it calibrate to "0" before continuing climbing.

NOTE: *When performing a manual adjustment of altitude, the ALTITRACK enters "Jump Mode" and the altitude is stored in the memory for 14 hours if no jump is made.*

After 14 hours the ALTITRACK calibrates to the new elevation and displays "0"
The ALTITRACK switches OFF automatically 14 hours after the recalibration.
The altitude offset is not retained when the ALTITRACK is switched OFF.

7 - Backlight

Enable: Press and hold Right Front Button until "ACCESS" flashes two times.

Disable: Press and hold Right Front Button until "ACCESS" lights.

Note: The backlight is automatically disabled when manually switching OFF the ALTITRACK.

NOTE: *If the backlight is turned ON while the ALTITRACK is not in Jump Mode, the backlight will automatically turn OFF after 2 hours.*
If the backlight is turned ON while the ALTITRACK is in Jump Mode, the backlight will remain ON until the unit exits Jump Mode.

8 - Battery Status


Full capacity: Symbol shows two bars inside the icon.
The ALTITRACK can be used without any restrictions.
The two bars correspond to a battery capacity between 100 and 10%.


Low capacity: Symbol shows one bar inside the icon.
Replace battery as soon as possible, however the ALTITRACK can still be used for jumping as long as it is not used for night jumping or at temperatures below zero deg. C.


Very low capacity: Symbol shows no bars inside the icon.
The “Low Bat” light flashes every 15 sec on the ALTITRACK scale.
Do not jump with the ALTITRACK. Replace battery.


Empty battery: The battery icon flashes.
Do not jump with the ALTITRACK. Replace battery.

9 - Customize the ALTITRACK

The ALTITRACK can be customized to your personal settings. Your settings will be stored and recalled also after replacing batteries. When you first get the ALTITRACK, we recommend you to go through the SETUP Selector to customize the unit.

9.1 SETUP Selector

In the SETUP Selector the following options can be selected:
- Main Setup display
- Turn the ALTITRACK OFF
- Delete jump
- Set total number of jumps
- Set total freefall time
- Set current date
- Set current time
- Delete logbook
- MPH / KMH

- Feet / Meter
- (TAS) True Airspeed / (SAS) Skydiver's Airspeed
- Canopy log Enable / Disable
- Dive Type
- Celsius / Fahrenheit
- Beep ON / OFF

To enter the SETUP Selector

Press and hold ● for 3 seconds.

To exit the SETUP Selector

Wait until the display times out or, press ◀ or ▶ repeatedly until returning to the Main Setup Display, then press ● to exit.

NOTE: *If no button has been pressed within 5 minutes after choosing any SETUP window, the ALTITRACK will return to the Main window (showing Time, Temperature inside instrument and Altitude).*

10 - Main Setup Display

The Main setup display accesses to the following functions:
Turn the ALTITRACK OFF- Delete Jump - Set total number of jumps - Set total freefall time - Set current date - Set current time - Delete logbook - MPH / KMH - Feet / Meter - (TAS) True Airspeed / (SAS) Skydiver's Airspeed - Canopy log Enable / Disable - Dive Type - Celsius / Fahrenheit - Beep ON / OFF

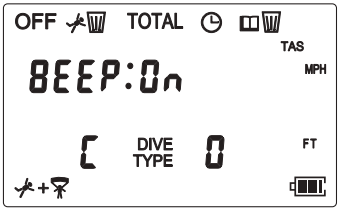


Fig. 8 - Main display
Displays all current settings

Press ▶ to move forward in setup options
Press ◀ to move backward in setup options
To return to "Logbook screen # 1", press ◀ or ▶ repeatedly to return to this screen, then press ●

Main Setup Display - **Turn the ALTITRACK OFF** - Delete Jump - Set total number of jumps - Set total freefall time - Set current date - Set current time - Delete logbook - MPH / KMH - Feet / Meter - (TAS) True Airspeed / (SAS) Skydiver's Airspeed - Canopy log Enable / Disable - Dive Type - Celsius / Fahrenheit - Beep ON / OFF

10.1 Turn the ALTITRACK OFF

Press ▶ to select OFF

This is a secondary method.
To turn the ALTITRACK OFF, use recommended method described in paragraph 5.

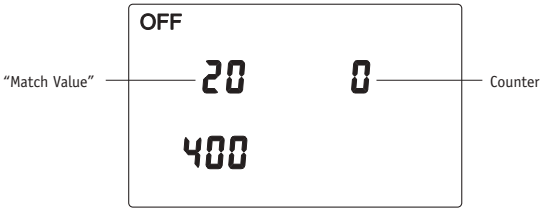


Fig. 9 - Turn the ALTITRACK OFF

Press ● (“OFF” flashes)
Press ▶ to increase the counter “Match Value”
Press ◀ to decrease the counter “Match Value”

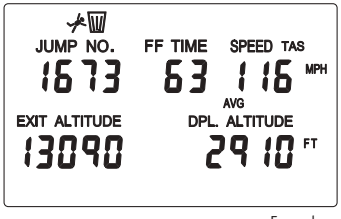
At “Match Value” press ● The pointer moves to “6” and the unit switches OFF.

NOTE: *When switched OFF the ALTITRACK cannot be used for jumping. Customer settings and clock are not lost when switched OFF.*

Main Setup Display - Turn the ALTITRACK OFF - **Delete Jump** - Set total number of jumps - Set total freefall time - Set current date - Set current time - Delete logbook - MPH / KMH - Feet / Meter - (TAS) True Airspeed / (SAS) Skydiver's Airspeed - Canopy log Enable / Disable - Dive Type - Celsius / Fahrenheit - Beep ON / OFF

10.2 Delete Jump

Press ▶ again to select Delete Jump



Example

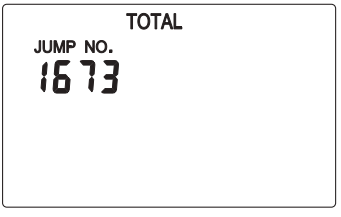
Fig. 10 - Delete Jump

Press ▪ ("Delete Jump Icon" flashes)
Press ▶ to increase the counter to "Match Value"
Press ◀ to decrease the counter "Match Value"
At "Match Value" press to delete current jump
If you press ▪ before you select the match value, the delete jump action is cancelled

NOTE: *At the same time the accumulated number of jumps and freefall time are updated if the deleted jump is the last jump logged.*

10.3 Set Total Number of Jumps

Press ▶ again to select TOTAL



Press ■ ("TOTAL" flashes)
Press ▶ to increase the jump total
Press ◀ to decrease the jump total
Press ■ to store the new total number of jumps and end

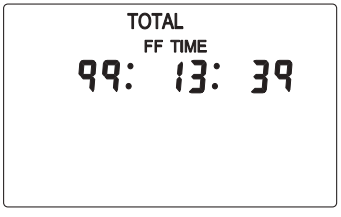
Example

Fig. 11 - Set Total Number of Jumps

NOTE: *Total number of jumps cannot be set to a value below the highest stored jump number.*

10.4 Set Total Freefall Time

Press ▶ again to select TOTAL FF TIME



Press ■ ("TOTAL" flashes)
Press ▶ to increase total freefall time
Press ◀ to decrease total freefall time
Press ■ to store the new total number of jumps and end

Fig. 12 - Set Total Freefall Time

10.5 Set Current Date

Press ▶ again to select "DATE"

Press ● ("Clock" icon flashes)
Press ▶ to increase date value
Press ◀ to decrease date value
Press ● to store the new date and end

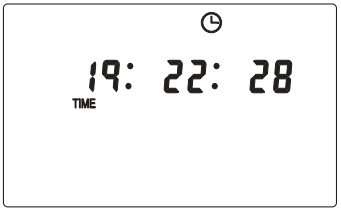
Fig. 13 - Set Current Date

NOTE: *Date format is YYYY:MM:DD.*

Main Setup Display - Turn the ALTITRACK OFF - Delete Jump - Set total number of jumps - Set total freefall time - Set current date - **Set current time** - Delete logbook - MPH / KMH - Feet / Meter - (TAS) True Airspeed / (SAS) Skydiver's Airspeed - Canopy log Enable / Disable - Dive Type - Celsius / Fahrenheit - Beep ON / OFF

10.6 Set Current Time

Press ▶ again to select "TIME"



Press ● ("Clock" icon flashes)
Press ▶ to increase time value
Press ◀ to decrease time value
Press ● to store the time and end

Fig. 14 - Set Current Time

NOTE: *Time format is 24 hours*

Main Setup Display - Turn the ALTITRACK OFF - Delete Jump - Set total number of jumps - Set total freefall time - Set current date - Set current time - **Delete logbook** - MPH / KMH - Feet / Meter - (TAS) True Airspeed / (SAS) Skydiver's Airspeed - Canopy log Enable / Disable - Dive Type - Celsius / Fahrenheit - Beep ON / OFF

10.7 Delete Logbook

Press ▶ again to select "Delete Logbook"

Fig. 15 - Delete Logbook

Press ▪ (“Delete Logbook” icon flashes)
Press ▸ to increase the counter “Match Value”
Press ◂ to decrease the counter “Match Value”
At “Match Value” press ▪ to delete logbook

CAUTION: *The accumulated number of jumps and freefall time are also erased.*
WARNING: *Once ▪ is pressed at match value, there is no way to restore the information.*

Main Setup Display - Turn the ALTITRACK OFF - Delete Jump - Set total number of jumps - Set total freefall time - Set current date - Set current time - Delete logbook - **MPH / KMH** - Feet / Meter - (TAS) True Airspeed / (SAS) Skydiver's Airspeed - Canopy log Enable / Disable - Dive Type - Celsius / Fahrenheit - Beep ON / OFF

10.8 MPH / KMH Selector

Press ▶ again to select "MPH/KMH"

Fig. 16 - MPH / KMH Selector
Press • to toggle between MPH and KMH.

NOTE: *Jump data are continuously stored in mph and kmh. At any time stored information may be displayed in either unit of measurement by selecting the respective mode.*

Main Setup Display - Turn the ALTITRACK OFF - Delete Jump - Set total number of jumps - Set total freefall time - Set current date - Set current time - Delete logbook - MPH / KMH - **Feet / Meter** - (TAS) True Airspeed / (SAS) Skydiver's Airspeed - Canopy log Enable / Disable - Dive Type - Celsius / Fahrenheit - Beep ON / OFF

10.9 Feet / Meter Selector

Press ▶ again to select "FT/MTR"

Fig. 17 - Feet / Meter Selector

Press ● to toggle between FT and MTR.

NOTE: *Jump data are continuously stored in both feet and meters. At any time stored information may be displayed in either unit of measurement by selecting the respective mode.*

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

Press ▶ again to select "TAS/SAS"

Fig. 18 - (TAS) True Airspeed / (SAS) Skydiver's Airspeed
Press ● to toggle between 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 LARSEN & BRUSGAARD: 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 (+7.080C) 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 fallrate of 62 meters/sec at 10,000 feet will have a terminal fallrate 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.

See paragraph 18 for more information about TAS and SAS.

NOTE: *Jump data are continuously stored in both TAS and SAS. Stored information may be displayed in either unit of measurement by selecting the respective mode.*

10.11 Canopy Log Enable / Disable

Press ▶ again to select "Freefall+Canopy"

: Logging freefall profile

+ : Logging freefall and canopy profiles

Fig. 19 - Canopy Log Enable / Disable

Description
Choice of storing freefall profile, or freefall and canopy profiles. More jumps can be stored in memory when choosing freefall profile only.

Press ● to enable / disable canopy profile log

Main Setup Display - Turn the ALTITRACK OFF - Delete Jump - Set total number of jumps - Set total freefall time - Set current date - Set current time - Delete logbook - MPH / KMH - Feet / Meter - (TAS) True Airspeed / (SAS) Skydiver's Airspeed - Canopy log Enable / Disable - **Dive Type** - Celsius / Fahrenheit - Beep ON / OFF

10.12 Dive Type Selector

Press ▶ again to select DIVE TYPE

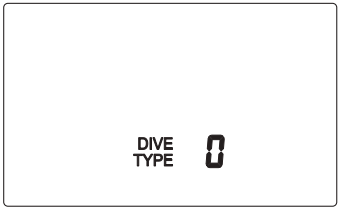


Fig. 20 - Dive Type Selector

Description

This mode can be used to:

1. Store the Dive Type to be performed on the next jump
The selected Dive Type is displayed in the Logbook Screen #3
2. Change freefall sensitivity
Only when Dive Type is set to STu or SLO.

Press ▪ (“DIVE TYPE” flashes)
Press ▸ to scroll forward through the Dive Type list
Press ◂ to scroll backward through the Dive Type list
Press ▪ to store your selection before moving to another menu

Dive Types:
0 = (factory default)
1 = 1 (User selectable in JUMP-TRACK)
2 = 2 (User selectable in JUMP-TRACK)
AFF = (Accelerated Free Fall)
TAn = (Tandem)
STu = (Student)*
PHO = (Photo)
4 = (4-way)
8 = (8-way)
FrE = (Freestyle)
SLO = (Slow) **

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

NOTE: *The ALTITRACK freefall detection is very sensitive in this mode and may log if the airplane descends.*

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

Main Setup Display - Turn the ALTITRACK OFF - Delete Jump - Set total number of jumps - Set total freefall time - Set current date - Set current time - Delete logbook - MPH / KMH - Feet / Meter - (TAS) True Airspeed / (SAS) Skydiver's Airspeed - Canopy log Enable / Disable - Dive Type - **Celsius / Fahrenheit** - Beep ON / OFF

10.13 Celsius / Fahrenheit Selector

Press ▶ again to select "C"

Fig. 21 - Celsius / Fahrenheit Selector

Press ● to toggle between Celsius and Fahrenheit

Main Setup Display - Turn the ALTITRACK OFF - Delete Jump - Set total number of jumps - Set total freefall time - Set current date - Set current time - Delete logbook - MPH / KMH - Feet / Meter - (TAS) True Airspeed / (SAS) Skydiver's Airspeed - Canopy log Enable / Disable - Dive Type - Celsius / Fahrenheit - **Beep ON / OFF**

10.14 Beep ON / OFF

Press  again to select "BEEP"

Fig. 22 - Beep ON / OFF

Press  to toggle between BEEP ON / OFF

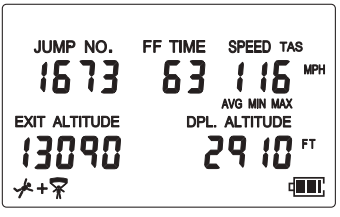
11 - MAIN Selector

In the MAIN SELECTOR press ▪ repeatedly to scroll through the menu functions in this order:

- ▪ logbook screen # 1. (Main information)
- ▪ logbook screen # 2. (Playback, Jump Profile)
- ▪ logbook screen # 3. (Date, Time and Dive Type)
- ▪ Main Display (Time/date, temperature and altitude)

Press ▪ (only necessary when in Jump Mode)

11.1 Logbook Screen # 1. (Main information)



Example

Fig. 23 - Logbook Screen # 1. (Main information)

The information includes:
- Jump number
- Freefall time
- Speeds (scrolls automatically through AVG, MAX and MIN)
- Exit altitude
- Deployment altitude

To scroll through the previous jumps, press 
To scroll forward, press 
To go to highest jump #, press and hold  for 3 seconds
To go to lowest jump #, press and hold  for 3 seconds

The ALTITRACK will display three different terminal speed informations in mph and kmh.

1. Average speed, 2. Max speed, 3. Min speed
All speeds are calculated from 15 sec after exit to 7 sec before deployment.

If the freefall lasted between 20 and 30 sec. the display only shows:
- Min speed
- Max speed

If the freefall lasted more then 30 sec. the display shows:
- Average speed
- Min speed
- Max speed

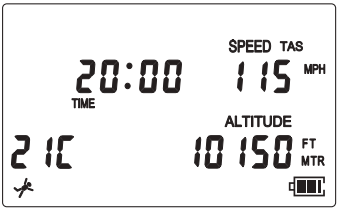
NOTE: *If the freefall lasted less than 20 sec. the display shows no speed information. Speed information is available in scroll mode, if freefall lasted more than 6 sec.*

11.2 Important Notice About Speed Recordings

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

Press ■ again

11.3 Logbook Screen # 2. (Playback, Jump Profile)



Example

Fig. 24 - Logbook Screen # 2. (Playback, Jump Profile)

The information on the display includes:
- Time after exit in seconds
- Speed at time
- Temperature inside instrument at exit and then updated every 30 sec.
- Altitude at time
- Freefall and canopy status

Press ▶ to playback the jump 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 jump 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

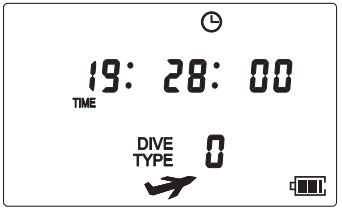
Press ◀ and ▶ to playback jump on analog face.
Wait for pointer to go to EXIT point, then press "Left Front Button" to start playback.

Press "Right Front Button" to stop playback.

NOTE: *For safety reasons, playback is disabled when in Jump Mode.*

Press ▪ again

11.4 Logbook Screen # 3. (Date, Time and Dive Type)



Example

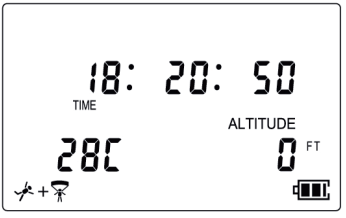
Fig. 25 - Logbook Screen # 3. (Date, Time and Dive Type)

The information on the display includes:
- Jump Date
- Jump Time
- Dive Type

To scroll through the previous jumps press ◂
To change direction, press ▸

Press ▪ again

11.5 Logbook Screen # 4. (View Current Time/Date, Temperature and Altitude)



Example

Fig. 26 - Logbook Screen # 4. (view current time/date, temperature and altitude)

The information includes:
- Current time (24 hours' format) or current date (yyyy:mm:dd)
- Current temperature inside instrument in Celsius or Fahrenheit
- Altitude
- Freefall and canopy log status

Press ◀ or ▶ to toggle between current time and date

12 - Remaining Logbook Storage

The ALTITRACK flash memory can store 400 minutes of data (e.g. 200 jumps with two minute profiles or 26 jumps with 15 minute profiles).

The ALTITRACK flash storage is organized in ½ minute sectors; meaning that a 20 sec. profile will fill up ½ minutes storage and a 61 second profile will fill up 1½ minutes storage.

When the storage is full, the ALTITRACK automatically erases the first jump(s) stored to make sure it always has 15 minutes of storage for the next jump.

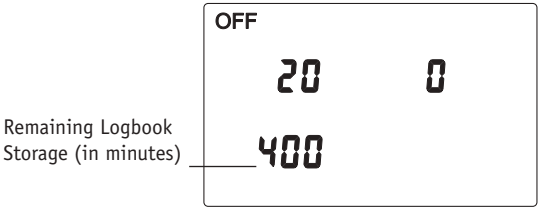


Fig. 27 - Remaining Logbook Storage

13 - Replacing the Battery

Fig. 28 – Battery cover with screws

Fig. 29 - Battery

1. Unscrew and remove battery cover
2. Remove old battery
4. Install new battery noting polarity. Use SAFT LS 14250 (3.6V) or equivalent
5. Press a paperclip into the tiny (Reset) hole next to the battery and release
   The unit restarts
6. Put battery cover back into place and fasten the 2 screws

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

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

14 - Resetting the ALTITRACK

The reset button is located inside the battery compartment.
To gain access to the reset button, remove the battery cover.

Fig. 30 - Resetting

1. Unscrew and remove battery cover.
2. Press a paperclip into the tiny (Reset) hole next to the battery and release. The unit restarts.

3. Put battery cover back into place and fasten the 2 screws.

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

15 – Battery cover

Fig. 31 - Battery cover with Air Filter

The ALTITRACK is water resistant and the battery cover functions as an air filter, preventing water get inside the unit. In case the ALTITRACK becomes wet, please check the air filter on the battery cover. If it is wet, dry it up using a hair dryer or replace the battery cover.

16 - Firmware Version

Perform reset or turn the unit OFF and then ON
The version number is displayed in the upper part of the screen.
The number displayed in the lower part of the screen is the scale type

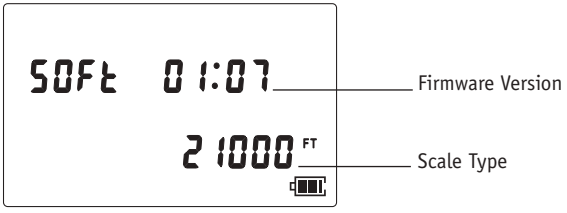


Fig. 32 - Firmware version

17 - Operational Hints and Trouble-shooting

When the ALTITRACK detects a fault, an error (“ERR”) symbol and trouble shooting numbers 2 to 5 and 100 are displayed in the upper part of the LCD 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 (memory communication error)
ERR 100 (memory defective)
Remedy: perform reset

If the unit still does not function correctly even after performing reset and replacing the battery, then perform following:
Press and hold - while resetting.
The ALTITRACK resets to factory settings and sounds three beeps.
If the unit is still faulty, please contact LARSEN & BRUSGAARD.

18 - 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 LARSEN & BRUSGAARD: 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 (+7.080C) 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 fallrate of 62 meters/sec at 10,000 feet will have a terminal fallrate 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 LARSEN & BRUSGAARD 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.

To set TAS / SAS see paragraph 10.10.

19 - Mounting The Rubber Support

Step 1.

Bend the closing flap slightly and hold it next to the connector port (Fig. 33) and fit the right corner into the guide on the right corner of the Altitrack. Fig 34.

Fig. 33

Fig. 34

Step 2.

Continue pressing the rubber support into the guide (Fig. 35) until reaching the two side buttons. Fig. 36.

Fig. 35

Fig. 36

Step 3.

Fit and press the left corner into the left corner of the Altitrack (Fig. 37) and press remaining rubber into place towards the two side buttons. Fig. 38.

Fig. 37

Fig. 38

Step 4.

Carefully align and press the end of the sealing into the end of connector port (Fig. 39) and continue until the sealing is completely fitted into port. Fig. 40.

It may be necessary to adjust and press several times on the sealing to make a good fit. Fig. 41 shows the sealing fitted correctly in the port.

Fig. 39

Fig. 40

Fig. 41

Step 5.

Close the sealing flap by first pressing at the buttom of the flap (Fig. 42), then finishing by pressing on the top with a fingernail. The flap must be flush with the surrounding surface. Fig. 43.

Fig. 42

Fig. 43

20 - Mounting The Finger Loop

The Finger Loop comprises one Velcro Strap and one Rubber Band. Fig. 44.

Note: The velcro strap has one part of soft material on one side and one part with hooks on one side.

Fig. 44

Step 1.

Guide the velcro strap through the opening on the front of the Altitrack with the soft material part facing towards the scale. Adjust the strap so it has equal length on each side of the bar. Fig. 45.

Fig. 45

Step 2.

Route the hook part up through the rubber band top opening. Fig. 46.

Fig 46

Step 3.

Continue and loop the hook part down through the second opening and pull the rubber band to the Altitrack bar. Fig. 47.

Fig 47

Step 4.

Put the soft part through the big hole. Fig. 48.

Fig 48

Step 5.

Turn the Altitrack upside down. While holding the hook part tight towards the Altitrack (Fig. 49), press the soft part into the second opening with your index fingertip while paying attention that it does not connect with the hook part until it has been fully put through the opening. Fig. 50.

Fig. 49

Fig. 50

Step 6.

Close the hook part around the soft part and press firmly. Fig. 51.

Fig. 51

21 - Mounting The Wrist Strap

General: The wrist strap is delivered in its closed position (Fig. 52) and before mounting, it must be opened fully (Fig. 53)

Fig. 52

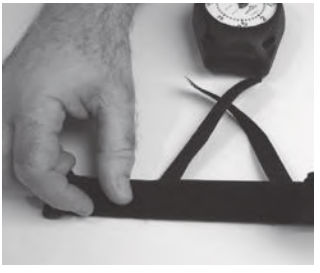


Fig. 53

Step 1.

Route the left strap through the left side opening in the Altitrack (Fig 54) and align it parallel with itself (Fig. 55).

Fig. 54

Fig. 55

Step 2.

Adjust the cut angled end of the strap to be flush with the outer edge of the wide velcro band and press into place. Fig. 56.

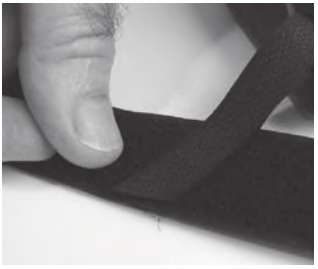


Fig. 56

Step 3.

Route the right strap through the right opening in the Altitrack, align it parallel with itself and adjust the cut angled end of the strap to be flush with the outer edge of the wide velcro band and press into place. Fig. 57.

Fig. 57

Step 4.

For storage purpose, put the velcro strap end through the buckle (Fig. 58) and close. Fig. 59.

Fig. 58

Fig. 59

22 - Specifications, ALTITRACK

Mechanical
Dimensions: 81 x 69 x 23 mm
Weight: 130 g
LCD viewing area: 9.5 cm2

Logbook
Maximum display indication:
Profile storage: 400 minutes
Accumulated number of jumps: 19,999
Exit altitude: 39,999 feet (12,191 m)
Accumulated freefall time: 999 hours

Tolerances:
Exit altitude: +/- 1.2%
Deployment altitude: +/- 1.2%
Freefall time: +/- 1 sec
Speed (TAS/SAS): +/- 3 mph (+/- 5 kmh)

Datalogger
Continued storage of freefall profiles: Last 400 minutes
Maximum logging altitude: 39,999 feet (12,191 m)
Maximum logging time: 15 minutes per jump
Sampling rate: 4/sec.
Minimum freefall time to log jump in normal mode: 8 sec.
Minimum freefall time to log jump in Stu (Student) mode: 2 sec.

Other

Present altitude: +/- 10 ft
Operating altitude: 0 to 40,000 ft
(0 to 12,191 m)
Maximum negative adjustment: 3,000 ft (1,000 meter)
Clock: +/- 4 min/month
Storing Temperature: -20C to +70C
Operating Temperature Range: -30C to +60C (-22F to +140F)
Function Period: 14 hours
Battery type: SAFT Lithium LS 14250 (3.6V) or equivalent
Battery Life Time (at normal use): approximately 2 years
L&B part no.: 205340
NATO Stock no. 6605-22-609-1691
Meets or exceeds EN/(IEC) 61326-1:2006

JUMP-TRACK™ offers jump analysis, the ability to synchronize freefall video, time placing of pictures on a freefall curve and comparison/tracking of skydives by integrating a graphical analysis tool with an easy to use, highly detailed electronic logbook.

Detailed JUMP-TRACK™ information includes freefall jump profile, vertical speed profile, exit altitude, freefall time, deployment altitude, freefall speeds, accumu lated number of jumps and freefall time, and much more.

The logbook has advanced search and print options and can sort many types of skydives such as Tandem, AFF, freefly, etc.

The JUMP-TRACK™ / ALTITRACK™ combination is an invaluable tool for all skydivers to study their performance in the air.

For more information, please visit,
http://www.L-and-B.dk/jumptrack3.html

23 - Warranty

The following conditions apply to the ALTITRACK warranty:
If within 12 months of the purchase of ALTITRACK a defect or damage is identified by faulty manufacture, LARSEN & BRUSGAARD will repair the unit at no cost the the end user. To make a claim under this warranty, send the unit to an authorized dealer or directly to LARSEN & BRUSGAARD 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 LARSEN & BRUSGAARD.
All further claims, especially for defects after skydiving accidents, are excluded.
LARSEN & BRUSGAARD has no obligation to honor any extension of warranty granted by any national agent.

Waiver of Liability
The buyer and user of the ALTITRACK indemnify the manufacturer and vendor from any liability for damage incurred before, during and after skydiving with the instrument.