SPORTS ALTIMETER
USERS MANUAL

SPORTS INSTRUMENTS®
ALTITUDE TECHNOLOGY

ALTA™

SPORTS ALTIMETER

ENGLISH
FRENCH
GERMAN
ITALIAN
SPANISH

Table of contents

I. *Introduction*

Congratulations on your purchase of your Sports Instruments® ALTA™ sports altimeter. Designed with the needs of skiers, hikers and cyclists in mind, the ALTA™ is the most accurate wristwatch altimeter that you can own.
Thanks to Sports Instruments "Programming Window™" (pat. pend.) the ALTA™ is also the simplest altimeter in the world to operate. The "Programming Window" functions like On-Line Help telling you which window you are viewing and what keys you need to press next. The ALTA™ also includes features never before found in personal altimeters, like a long term memory that tells you how many feet that you have climbed and descended during the year and fast calibration "way-points" that allow you to quickly recalibrate the ALTA™ to your home or favorite ski resort.

II. *Warnings and cautions*

CAUTION: Your ALTA™ sports altimeter is designed to be water-resistant. It can be used for most outdoor activities. While the ALTA™ can be worn while swimming and showering, this is not recommended, as there is always the chance that water will enter the unit through the pressure sensor port.

The ALTA™ should not be used for snorkeling or scuba diving. THE ALTA™ IS NOT DESIGNED TO MEASURE UNDERWATER DEPTHS. USING THE ALTA™ FOR THIS TYPE OF APPLICATION WILL DAMAGE THE UNIT AND VOID THE WARRANTY.

CAUTION: If you are using your ALTA™ sports altimeter in a wet environment, you should be careful not to press any buttons while the unit is wet or submerged as this may allow water into the unit.

CAUTION: The ALTA™ sports altimeter is **NOT** designed to be used for flying, skydiving, hang gliding or other sports where major sudden changes in altitude may occur.
The ALTA™ should **NOT** be used when there is a need for industrial precision.

III. *How an altimeter works*

The Sports Instruments ALTA™ sports altimeter uses a sophisticated pressure sensor to detect changes in atmospheric pressure. A computer chip then processes the pressure information and your altitude is displayed on the screen in feet or meters. This is similar to the way that an aircraft altimeter works. Because the ALTA™ relies on pressure changes to determine altitude, its readings will be affected by changes in barometric pressure (weather), even if you have not actually changed altitude. Small atmospheric pressure changes experienced during a day of use will usually have only a minor effect on the accuracy of the ALTA™, however the arrival or departure of a weather front can change the current altitude display by 200 feet or more.

Because of this the ALTA™, like any altimeter, will need to be regularly calibrated to a known altitude. Sports Instruments exclusive Way Point Calibration System (WACS) found in the ALTA™ is designed to make the recalibration of the unit quick and easy. The altitude sensor of the ALTA™ is temperature compensated to allow the unit to automatically adjust its altitude reading to compensate for changes in ambient temperature. Although the ALTA™ sports altimeter is temperature compensated, it does not have an on screen temperature display. This is because the temperature sensor measures the ambient temperature of the unit itself, not the outside air temperature. The difference between the ambient and outside may be greater than 20 degrees F.

IV. *Technical information*

BATTERY

The ALTA™ uses a common #2032 3v Lithium battery as its power source. These are available at most camera shops, bicycle shops and electronic stores.

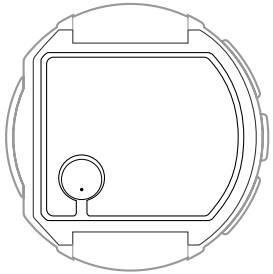
We recommend that the battery in the ALTA™ be changed by someone familiar with changing batteries in watches such as a jeweler. The ALTA™ is self-calibrating. Changing the battery will not affect the accuracy of the unit.

The battery life of the ALTA™ is determined by the amount of use that the unit receives.

Note: While in the SLEEP mode the battery consumption is dramatically reduced. For optimal battery life your ALTA™ should be placed in the PAUSE mode if it is not going to be used for extended periods of time.

SENSOR MODULE

The access for the sensor of the ALTA™ is located on the back metal plate of the watch. Care should be taken that the openings in the plate are kept clear and clean.



Caution: Do not put anything sharp or pointed into the sensor openings as this may damage the sensor and void the units warranty.

Important: The sensor is sealed against the inside of the backplate with a small rubber O-ring. When changing the battery it is absolutely imperative that the O-ring be in its proper location. Failure to properly install the O-ring will destroy the ALTA™'s water-resistant seal and will cause the unit to fail and void its warranty.

V. *Getting started*

THE KEYS

The ALTA™ sports altimeter has four operating keys. Each key has a primary function, as well as secondary functions prompted by the Programming Window.

MODE key— Advances the unit through the main windows and stores information during programming

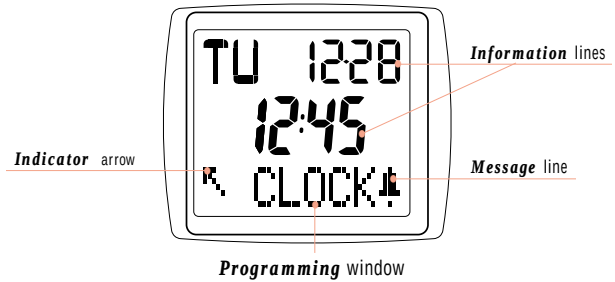
LAP key— Advances the unit to the next lap in the Lap Chronograph mode and adjusts the settings during programming

START/STOP key— Starts and stops the Lap Chronograph and adjusts the settings during programming.

HELP/EL key— Activates the Help Screens and operates the NightGlow™ display backlight.

THE DISPLAY

The ALTA™ features a three-line display.
The top two lines display information such as altitude, time of day, stopwatch and memories.
The bottom line is Sports Instruments exclusive dot-matrix "Programming Window" (Pat. Pend.).



THE "PROGRAMMING WINDOW"

Central to the simplicity of the ALTA™ is Sports Instruments "Programming Window" (Pat. Pend.).

Every screen of the ALTA™ has a "Programming Window" that consists of two parts;

THE MESSAGE LINE

which tells you about the operation being performed and;

THE INDICATOR ARROWS

that point to the key(s) to be pressed to perform the desired operation.
All functions of the ALTA™ are prompted by the by the words and arrows of the "ProgrammingWindow".

The actions of the "Programming Window" are automatic once a programming or operation sequence has been started. All you have to do follow the directions and press the key indicated by the arrows.

THE "PROGRAMMING WINDOW"

The "Programming Window" also shows the secondary HELP functions for the main screens.

Pressing and holding the **HELP/EL** key for 2 seconds in any screen except CLOCK will access that window's HELP sequence.

When the HELP function is activated the "Programming Window" will display the programming options for that screen.

Once it is activated, a screen's HELP sequence will repeat itself 3 times and then return to the main screen. HELP screen functions can only be activated from their HELP screen sequence. The only exception to this is Starting and Stopping the Lap Chronograph, which can be performed at any time from the Current Altitude/Lap Chrono screen.

PRIMARY COMMANDS

The "PROGRAMMING WINDOW" of the ALTA™ has several commands that are common to all programming sequences. They are as follows:

ADJ	Press the **LAP** *key* to adjust the portion of the display that is currently flashing. Hold to Fast Advance the display.
SET +	Press the **MODE** *key* to set the portion of the display that is currently flashing and advance to the next screen in the programming sequence.
ADJ UP	Press the **LAP** *key* to increase the value of the digits currently flashing on the screen.
ADJ DN	Press the **START/STOP** *key* to decrease the value of the digits currently flashing on the screen.
NEXT	Press the **LAP** *key* to advance to the next screen in the sequence
END +	Press the **MODE** *key* to cancel the view of the current display and return to the main screen
MEM +	Press the **MODE** *key* to access the Memory Recall Sequence
HOLD	Continue to press the current key
	Indicates that the daily alarm is active

VI. *How to use this manual*

We have attempted to make this manual as simple to use and as easy to understand as possible. Worded instructions have been kept to a minimum and pictures have been used wherever possible.

Each function of the ALTA™ is listed with its own heading in the Table of Contents. Look up the function for which you need information and proceed to the page indicated.

On the indicated page you will find a brief description of the function, including performance ranges and any other necessary information.

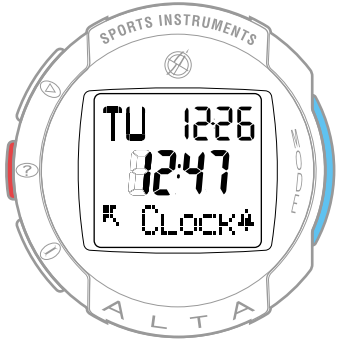
Following the description, are a series of drawings that show the sequences of screens that you will encounter as you operate the unit. Beneath each drawing, are the options that will appear in the "Programming Window" for each screen.

The keys in the drawings are color coded to show the appropriate key to press to perform the desired operation. Simply follow the drawings and you can't go wrong.

RED indicates that you should *Press and Hold* the indicated key for 1 second for the function to take place.

BLUE indicates that you should *Press and Release* the indicated key for the function to take place.

Press and hold



Press and release

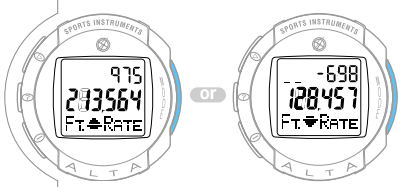
VII. *Main Screens*

THE ALTA™ HAS FOUR MAIN SCREENS

CLOCK
ALARM

Press and release **MODE** *key*
Shows the Time, Date and Day of the Week

FEET or METERS / RATE
FEET or METERS / RATE

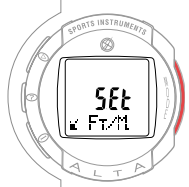


Press and release **MODE** *key*
Shows the daily accumulation of Feet or Meters up or down along with the rate at which you are travelling up or down. The Rate is expressed in either Feet or Meters per Minute depending on which unit the ALTA™ is programmed to display

LAP/ALT1 or 2

Press and release **MODE** *key*
Shows the Lap Chronograph (LAP), Current Altitude (ALT) and the Current Altitude WayPoint Setting (1 or 2).

SEt



Press and hold **MODE** *key*
This screen controls the main programming options (SEt Feet or Meters, SEt Daily Alarm, SEt Time/Calendar and SEt WayPoints) of the ALTA™. Enter or exit the SEt window by pressing and holding the MODE key for 2 seconds from any screen.

The SEt screen has two escape features that make it easy to return to the main operating screens of the ALTA™.

At any time, during any SEt screen programming sequence simply press and hold the MODE key for 2 seconds. The unit will store any changes made up to that point and return to a main operating screen.

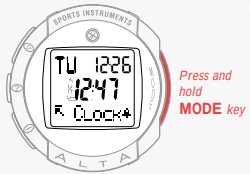
If you are in the SEt screen, and the ALTA™ does not see any programming activity for more than 30 seconds. It will automatically change back to its original screen.

VIII. *Programming from the SEt screen*

SEt TIME

Activation: From the **SEt** screen by *pressing and releasing the* **LAP** *key.*

The ALTA™ is programmed with a digital clock that will display in either 12 or 24 hour formats. It is also programmed with a 20-year calendar for the years 1998 to 2018. The calendar will calculate and display the date and day of the week and automatically compensate for months with 30 or 31 days and leap years.



Set 12/24

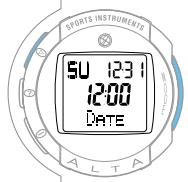
Set hours

Set minutes

Set year

Set month

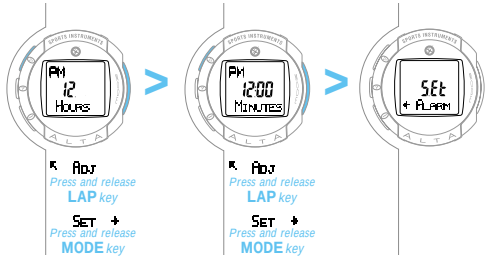
Set date

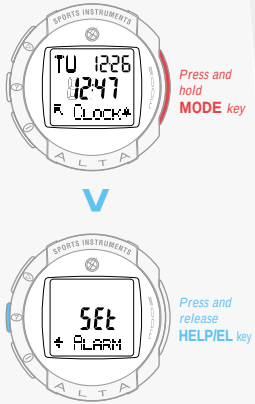


SET DAILY ALARM

Activation: From the **SEt** screen by *pressing and releasing the* **HELP/EL** *key.*

The ALTA™ is equipped with a daily alarm that can be set to the minute





ACTIVATING THE DAILY ALARM

Activation: Activate and disable the daily alarm from the main **CLOCK/ALARM** screen by pressing and holding the **LAP** key for 1 second. When the daily alarm is on, the alarm symbol (🔔) will appear in the programming window along with the word CLOCK. While the **LAP** key is being pressed the "Programming Window" will display the action taking place ((ALRM OFF)if the alarm is being turned off) and the display will show the current alarm setting.

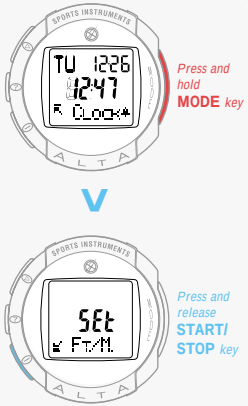
CHECK CURRENT ALARM SETTING

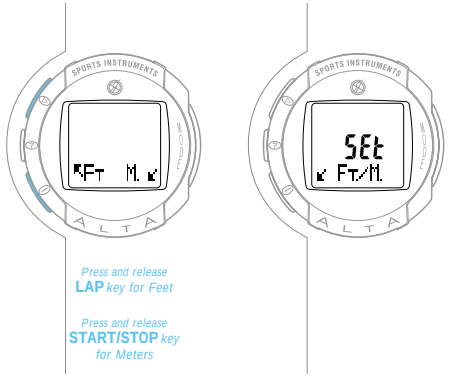
Activation: Pressing the **START/STOP** key while in the **CLOCK/ALARM** screen will show the current alarm setting whether or not the alarm is active. Releasing the **START/STOP** key will allow the unit to return to the **CLOCK/ALARM** screen.

SET FEET OR METERS

Activation: From the **SEt** screen by *pressing and releasing the* **START/STOP** *key.*

The ALTA™ can be programmed to display either feet or meters.
The altitude resolution of the ALTA™ is 3 feet or 1 meter depending on which unit of measure is programmed.
The ALTA™ will accurately measure altitudes from **-1,250 to +30,180Ft. or -381 to +9200M.**
Setting the ALTA™ for Feet or Meters also determines the units for the calculation of Rate of Ascent or Descent.





IX. *Using the Way-Point Automatic Calibration System*

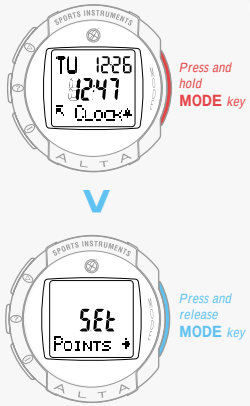
The ALTA™ is equipped with Sports Instruments exclusive Way-Point Automatic Calibration System (WACS).
The WACS system allows you to pre-program two known altitudes into the memory of the ALTA™. These altitudes allow you to easily compensate for altitude drift caused by changes in atmospheric pressure. The two altitudes could be the altitudes of your home and the top of your favorite ski hill or of any other known altitudes. Once programmed, a simple press of two keys is all that is required to recalibrate your ALTA™ sports altimeter to one of the two preset altitudes.
The WACS system has 3 parts:

A. Setting Altitude WayPoints One and Two.

B. Choosing WayPoint 1 or 2.

C. Calibrating the ALTA™ using the WACS system.

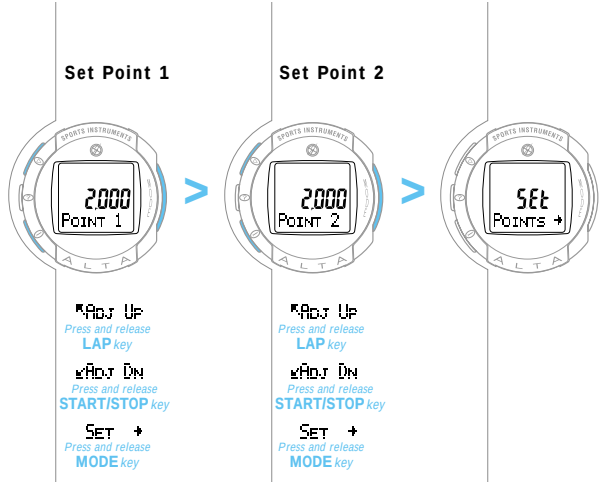
You can also set the current altitude of the ALTA™ without using the WACS system.
(See SETTING CURRENT ALTITUDE)



A. SETTING THE 2 ALTITUDE WAY POINTS

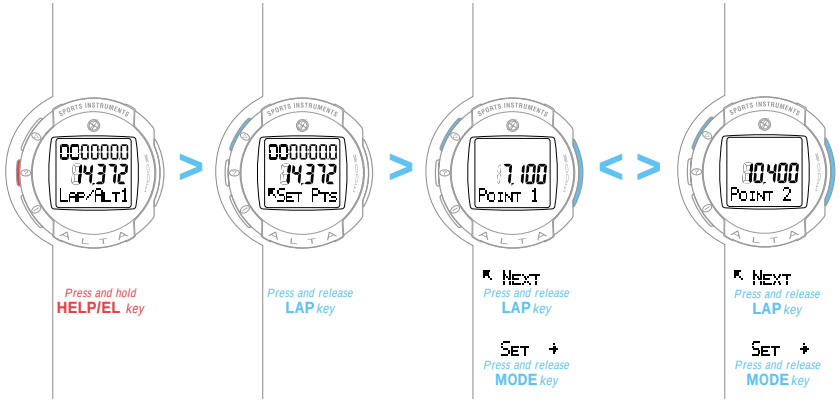
Activation: From the **SEt** screen by *pressing and releasing the* **MODE** *key.*

Program the 2 altitude waypoints with the altitudes of two locations that you visit often. For example, your home and the top of your favorite ski hill.



B. CHOOSING WAY-POINT 1 OR WAY-POINT2

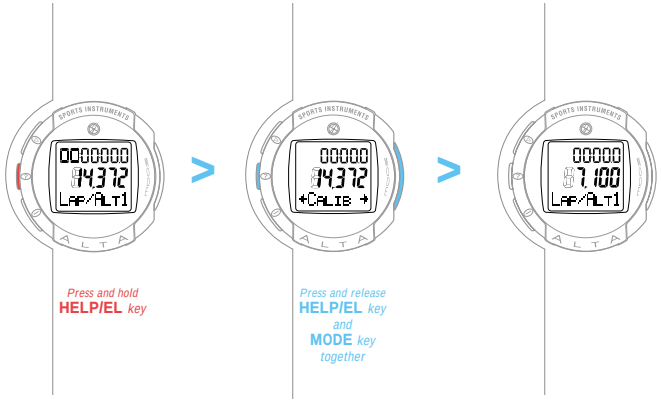
Activation: From the help sequence of the **LAP/ALT** screen, by *pressing and releasing the* **LAP** *key.*



The numeral 1 or 2 shown in the "Programming Window" of the **LAP/ALT** screen informs you which WayPoint the ALTA™ is currently set for.

C. CALIBRATING THE ALTA™ USING THE WACS SYSTEM

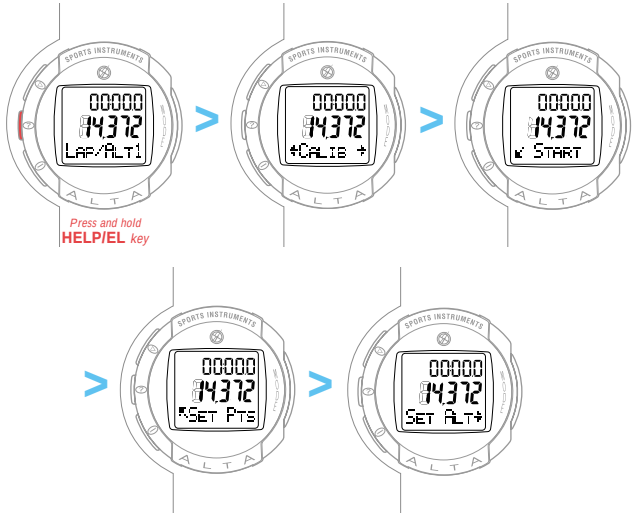
Activation: From the HELP sequence of the **LAP/ALT** screen, by *pressing and releasing the* **MODE and HELP/EL** *keys at the same time.*



Important: The WACS system is a simple memory function. For it to work properly you MUST be at the location for which the unit is set (Point 1 or Point 2). If you are not at the correct location and you use the WACS system, the unit will be improperly calibrated and will not show the correct altitude.

X. *Using the help functions of the LAP/ALT screen*

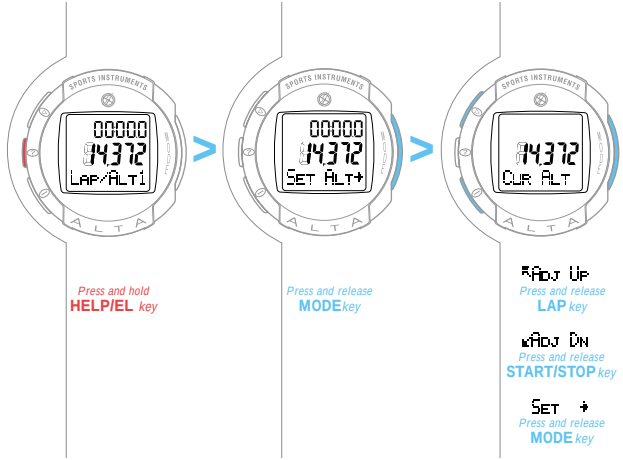
LAP/ALT SCREEN HELP SEQUENCE



ADJUSTING THE CURRENT ALTITUDE

Activation: From the HELP sequence of the **LAP/ALT** screen, by *pressing and releasing the* **MODE** *key.*

The ALTA™ allows you to easily adjust the current altitude at any time, without using the WACS system. Use this function to calibrate the ALTA™ when you are at any location where you know the altitude.



OPERATING THE LAP CHRONOGRAPH

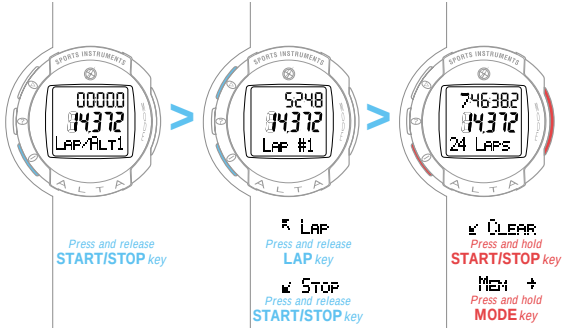
Activation: At any time in the **LAP/ALT** screen by *pressing and releasing the* **START/STOP** *key.*

The ALTA™ is equipped with a Lap Chronograph that is capable of recording up to 99hours 59minutes and 59 seconds worth of information and up to 34 Laps

The Lap Chronograph is a stand-alone function. It is not tied to any other function of the ALTA™.

Once the Lap Chronograph is activated, the "Programming Window" of the ALTA™ will show you the number of the lap you are currently measuring as well as the keys that you need to push to stop the Lap Chrono or advance it to the next lap.

The timing of an individual lap may be stopped and restarted as many times as desired by pressing the **START/STOP** key.

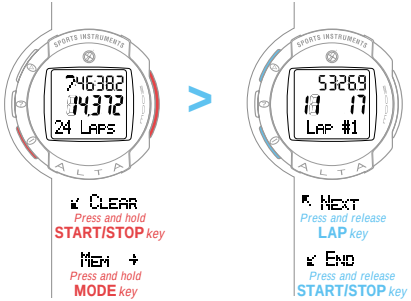


ACCESSING THE LAP CHRONOGRAPH MEMORY

Activation: By *pressing and holding the* **MODE** *key for 1 second* in the **LAP/ALT** screen anytime there is information in the Lap Chronograph memory.

When you stop a Lap Chronograph timing session, the "Programming Window" will show you the number of laps that you have completed along with the total time for all laps and the option to access or clear the Memory.

Access the Memory by pressing and holding the **MODE** key for 1 second and follow the instructions in the "Programming Window". The ALTA™ will play back your time for each individual lap as well as show a date stamp informing you the date that the lap was recorded.

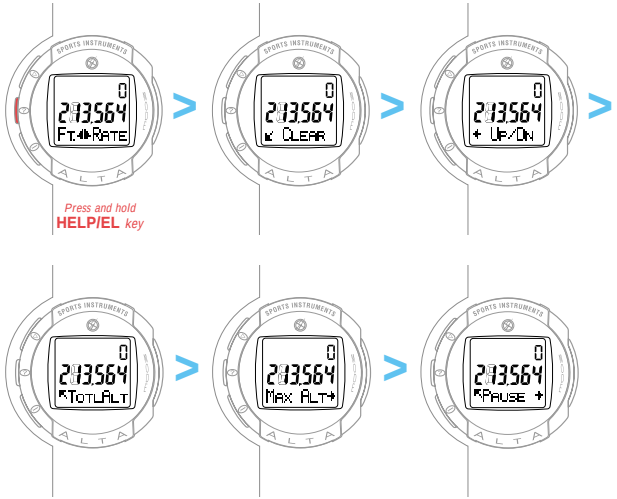


CLEARING THE LAP CHRONOGRAPH MEMORY

Activation: By *pressing and holding the* **START/STOP** *key for 1 second* in the **LAP/ALT** screen anytime there is information in the Lap Chronograph memory.

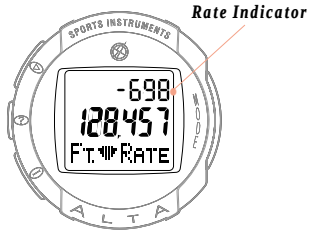
XI. *Using the help functions of the FT. or M. /RATE screen*

FT.OR M/RATE SCREEN HELP SEQUENCE



RATE OF ASCENT OR DECENT

The upper right corner of this screen displays your rate of ascent or descent in feet or meters/minute. This display is automatic and continuous in its function. It does not have to be started and it cannot be disabled. Decreasing rates of change are signified by a minus (-) sign. Increasing rates of change have no symbol. The rate of ascent or decent indicator cannot measure rates below + 54' or 17m / minute



SET ACCUMULATE ALTITUDE UP OR DOWN

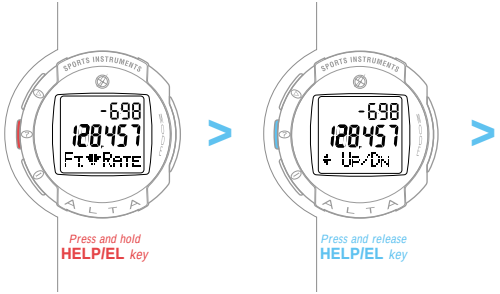
Activation: From the HELP sequence of the **FT/M. /RATE** screen, by *pressing and releasing the* **HELP/EL** *key*

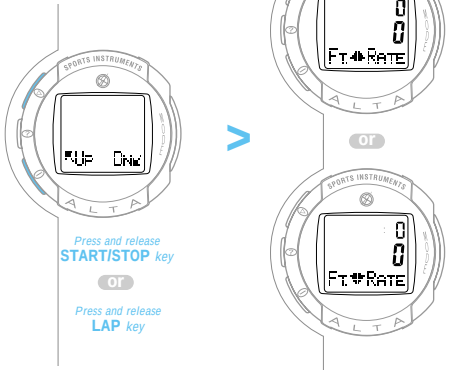
The memories on the ALTA™ are capable of accumulating altitude in either an UP or DOWN direction (not both at the same time).

Setting the ALTA™ to record in either the up or down mode automatically programs both the Daily Altitude Memory and the Annual Altitude Memory to record in that direction.

Setting the ALTA™ to record accumulated down altitude also programs the ALTA™ to count runs.

Note: Changing the recording direction of the ALTA™ automatically clears the Daily Altitude Memory, Runs and Rate to Zero.





VIEW TOTAL ACCUMULATED ALTITUDE

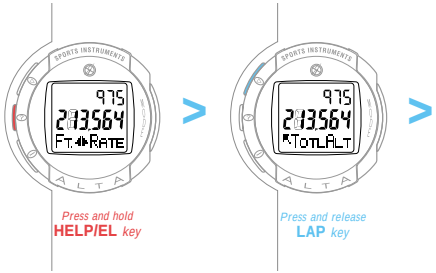
Activation: From the HELP sequence of the **FT/M. /RATE** screen, by *pressing and releasing the* **LAP** *key*

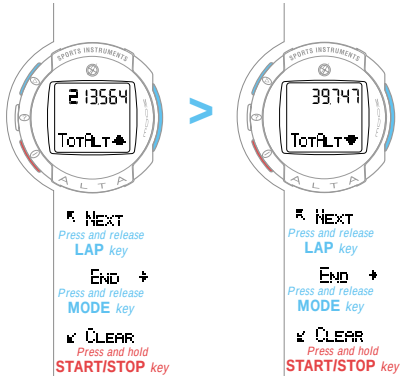
The ALTA™ is programmed with a total altitude memory that is capable of storing 9,999,999 feet in both the up and down direction.

CLEAR TOTAL ACCUMULATED ALTITUDE

Activation: From the **View Total Accumulated Altitude** screen sequence, by *pressing and holding the* **START/STOP** *key for 1 sec.*

The Total Accumulated Altitude function of the ALTA™ can be cleared at any time.

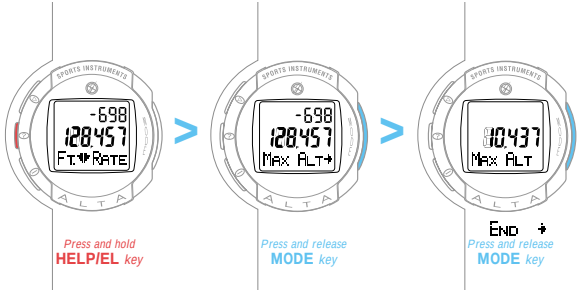




VIEW MAXIMUM ALTITUDE

Activation: From the HELP sequence of the **FT/M. /RATE** screen by *pressing and releasing the* **MODE** *key*

The ALTA™ will keep a memory of the highest altitude attained since the last time the unit was reset. Maximum Altitude is reset to 0 when ever the daily altitude is cleared. (See Clear Daily Altitude and Max Altitude.)



CLEAR DAILY ALTITUDE AND MAX ALTITUDE

Activation: From the HELP sequence of the **FT/M. /RATE** screen, by *pressing and holding the* **START/STOP** *key.*

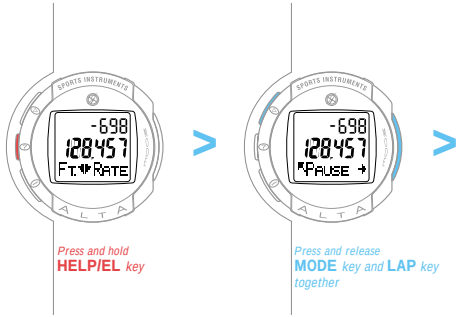
PAUSE THE ALTA™ FOR STORAGE OR TRANSPORTATION

Activation: From the HELP sequence of the **FT/M**. **RATE** screen, by *pressing and releasing the* **MODE** *key and* **LAP** *key together*

The ALTA™ is equipped with a pause feature that allows you to shut off altitude sampling to conserve battery life if the unit is to be stored for long periods of time. The pause feature also allows you to transport the ALTA™ by car or plane without accumulating data into the memories.

When the ALTA™ is paused only the Clock function will operate.

To reactivate the ALTA™ from pause mode simply press and hold the **MODE** and **LAP** keys again for 1 sec.



XII. *Nightglow display backlight*

Activation: *pressing and release the* **HELP/EL** *key* at any time.

The ALTA™ is equipped with Sports Instruments NightGlow display backlight to aid viewing in low light conditions.

Note: When lit the NightGlow feature automatically remains lit for 5 seconds. Pressing any key while the NightGlow feature is active automatically resets the 5-second timer. This allows the user to operate and or program the ALTA™ even in the dark.

If the SEt window is activated first, the NightGlow feature is interrupted so that all of the keys are available for programming the unit. If you are trying to program the ALTA™ using the SEt window at night, activate the NightGlow feature before you enter the SEt window.

Caution: Excessive use of the NightGlow feature will dramatically reduce the battery life of the ALTA™.

XIII. *Sleep Mode*

The ALTA™ is programmed to go to sleep in order to save battery life if no keys are pressed or there is no significant change in altitude for a period of 10 minutes. While asleep the ALTA™ will only sample for altitude changes once every 5 minutes rather than every second when the ALTA™ is active. When the ALTA™ is asleep the word “SLEEP” will be displayed in the “Programming Window”. Pressing any key will wake the ALTA™ up.

XIV. *Warranty*

This warranty gives the purchaser specific legal rights.
The purchaser may also have other rights depending on state law.

Sports Instruments Inc. hereby warrants to the original purchaser whose name shall be registered with Sports Instruments, Inc. that the product sold by it is free of defects in he material and workmanship for the period of two(2) years from the date of purchase.
The obligations of Sports Instruments, Inc. under this warranty are limited to the repair and replacement of such parts of the unit as shall be found upon inspection to be defective in material or workmanship. Individual models may differ in parts covered under warranty. Repair and replacement of any part found defective shall be at Sports Instruments, Inc.’s sole option.

The warranties contained herein are expressly in lieu of any other warranties, including implied warranty of merchantability and/or fitness of purpose.