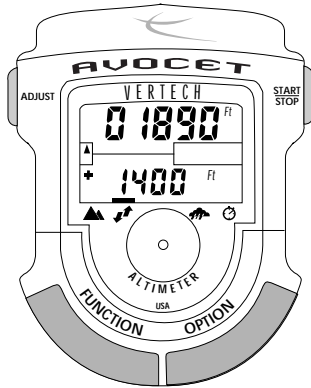# VERTECH
Wrist Instrument

- Measures daily & total vertical feet; counts runs skied
- Aircraft precision altimeter displays altitude within 10 feet
- Current, maximum, and average vertical rate of descent
- Rates in feet per minute for skiing and feet for hour for hiking
- Barometer with resettable trend and thermometer
- Includes all popular watch functions
- Split/lap timer with memory and recall
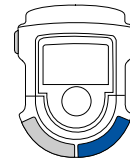- Made in California's Silicon Valley

AVOCET

BUTTONS
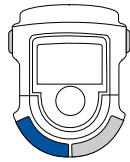
FUNCTION BUTTON
ADVANCES THROUGH THE FOUR PRIMARY FUNCTIONS
Used after Adjust Button to move between setup steps in the same display

OPTION BUTTON
SELECTS OPTIONS OF PRIMARY FUNCTIONS
Used after Adjust Button for setup–advances numbers
Selects ascent or descent arrow for altitude accumulation in
          Daily Vertical Feet reset display
Used after Start / Stop Button to create splits in Split / Lap Timing display
Advances through splits in Split Time Recall display

ADJUST BUTTON
ACCESSES AND EXITS SETUP OF DISPLAYED FUNCTION
Resets timers and puts displayed split / lap group into memory
Resets all groups if held 3 seconds when Split / Lap Group Selection option is displayed
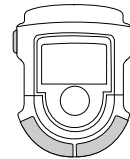
START / STOP BUTTON
STARTS AND STOPS ACCUMULATION OF VERTICAL FEET AND STARTS AND STOPS TIMERS
Selects 12 or 24 hour clock in Clock Set display
Selects English or Metric units in Altitude Adjust display
Turns alarm on and off in Date / Alarm Adjust display
Resets Barometric Trend when Barometer function is displayed
Resets Maximum Altitude, Daily and Total Vertical Feet, Descent Rates, and Runs in their adjust displays
Selects groups in Split / Lap Group display
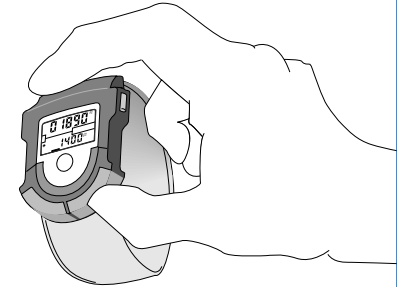
Press function and option buttons inward, not downward. Brace index finger on contoured top of Vertech case.

DISPLAY IDENTIFICATION
The icon below the bar at the bottom of each display identifies the function displayed. Adjust and reset displays are reached by pressing the adjust button when the desired function or option is displayed. When digits blink, they can be adjusted or reset.
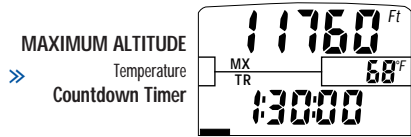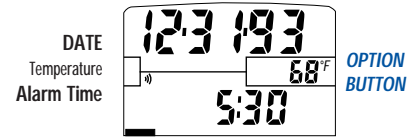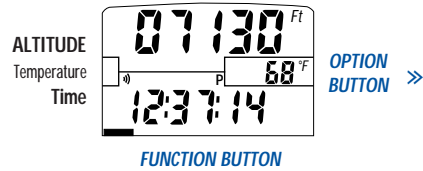
ENGLISH AND METRIC UNITS
The instrument displays in either English or Metric units. When units are changed, displayed and stored information is converted. Feet go to meters, Fahrenheit temperatures to Celsius temperatures, and inches of mercury to millibars.
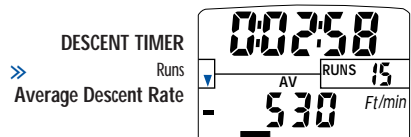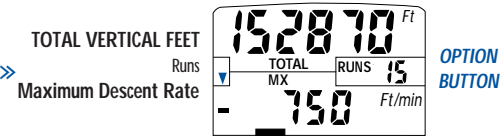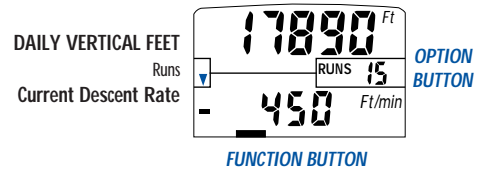
FUNCTIONS AND OPTIONS

ALTITUDE / TIME

Displays current altitude, temperature, and clock. Options include date, alarm, maximum altitude, and countdown timer.

ALTITUDE
Temperature
Time

`07130` Ft
`68°F`
`12:37:14`

OPTION BUTTON »

FUNCTION BUTTON

DATE
Temperature
Alarm Time

`12:31:93`
`68°F`
`5:30`

OPTION BUTTON »

MAXIMUM ALTITUDE
Temperature
**Countdown Timer**

`11760` Ft
MX TR `68°F`
`1:30:00`

VERTICAL SPORTS

Records daily vertical feet skied or hiked, number of runs skied, and current vertical rate in feet per minute or feet per hour. Options include total vertical feet, maximum vertical rate of descent, and the average rate for a timed interval.

DAILY VERTICAL FEET
Runs
Current Descent Rate

`17890` Ft
RUNS `15`
`450` Ft/min

OPTION BUTTON »

FUNCTION BUTTON

TOTAL VERTICAL FEET
Runs
Maximum Descent Rate

`15287.0` Ft
TOTAL MX RUNS `15`
`750` Ft/min

OPTION BUTTON »

DESCENT TIMER
Runs
Average Descent Rate

`0:02:58`
AV RUNS `15`
`530` Ft/min

WEATHER

Displays sea level barometric pressure in inches of mercury or millibars (adjustable for atmospheric change), temperature, and barometric trend since last reset.

SEA LEVEL BAROMETER
Temperature
Barometric Trend

`29.92` Hg
`68°F`
+ `0.13`

FUNCTION BUTTON
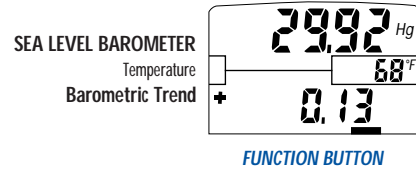
TIMING

Stopwatch records split and lap times and allows recorded split/ lap groups to be selected then recalled from memory.

SPLIT TIME
Split / Lap Number
Lap Time

`0:00.00`
SPL `0`
LAP
`0:00.00`

OPTION BUTTON »

Split / Lap Group

`3`

OPTION BUTTON »

SPLIT TIME (RECALL)
Split / Lap Number
Lap Time (Recall)

`1:18.05`
SPL `4`
LAP
`5:15.25`
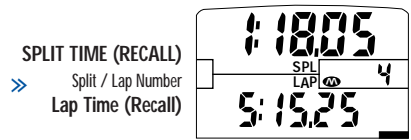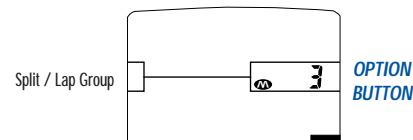
ALTIMETER INFORMATION

How the Altimeter Works. The Avocet Vertech measures altitude by detecting differences in air pressure and displaying this information as altitude above sea level. The Vertech works the same way an aircraft altimeter does.

Effects of Atmospheric Pressure Changes. A change in atmospheric pressure will make the displayed altitude different from the known altitude of a landmark. The Vertech can be adjusted so that it displays the same altitude as the landmark. On a typical day, minor atmospheric pressure changes may cause the displayed altitude to vary from the actual altitude by 50 feet. With the arrival or departure of a weather front, displayed altitude can change 50 to 150 feet, and a storm can cause a change of more than 200 feet. Wind, rain, snow, and humidity do not affect altimeter readings. Atmospheric pressure changes during a day's hiking or skiing will affect the accumulated vertical feet very little–about 1% at most.

When you adjust altitude, you may want to adjust the barometer at the same time. The barometer can be adjusted by setting the displayed altitude to the actual altitude in the barometer adjust display. Since altitude adjustment in the altitude function and in the weather function are not linked, they must be done separately.

Accumulating Vertical Feet. The Vertech is designed to disregard vertical irregularities of less than 30 feet on a slope. Because of this feature, when you start skiing or climbing, accumulation will begin at 30 vertical feet. After that, vertical feet will be accumulated in 10 foot increments.

Frequency of Display Updates. Altitude, Accumulated Vertical Feet, and Rate displays are updated every second if a button has been pressed within the last 7 minutes, or if there has been more than 100 feet of vertical change in the past 24 seconds. Otherwise the unit goes into sleep mode and updates displays every 8 seconds.

Thermometer Accuracy

Body heat will affect thermometer accuracy when the Vertech is worn directly against the wrist. The most accurate readings are displayed when the unit is worn over a jacket or when it is off the wrist. In the temperature range 32-122°F the thermometer is accurate to ±4°. It reads 4° high for each 10° below 32°.

VERTECH SPECIFICATIONS

Dimensions. 1.6" wide x 2.05" high x .6" thick
Weight. .9 oz without band; 1.3 oz with ski band
Display. Triple; upper .2" high, middle .1" high, lower .15" high
Operational Temperature Range. 0°F to +122°F
Water Resistance. Water resistant to 10 feet. Detergents will permanently damage the altimeter sensor
Country of Manufacture. Made in USA
Patent. U.S. Patent #5,058,427 and #5,295,085. Licensed under US patent #4,694,694 & Canadian patent #1, 304,599.

Altitude
Current Altitude: -4,000 to +40,000 feet in 10 foot increments
Maximum Altitude: -4,000 to +40,000 feet in 10 foot increments

Vertical Accumulation
Daily Vertical Feet: To 299,990 feet in ten foot increments (resettable; accumulates only when turned on)
Total Vertical Feet: To 299,990 feet in ten foot increments (resettable; accumulates only when turned on)

Ski Mode
Current Descent Rate: 0 to 7,600 ft. per min. in 50 foot per min. increments
Maximum Descent Rate: 0 to 7,600 feet per minute in 50 foot per minute increments; resettable
Average Descent Rate: From 0 to 7,600 feet per minute in 10 foot per minute increments over a period up to 18 hours; resettable
Runs Skied: To 199 then stops; run counter is tripped by a 150 foot descent

Alpin Mode
Current Ascent Rate: 0 to 28,000 ft. per hour in 100 foot per hour increments
Maximum Ascent Rate: 0 to 28,000 feet per hour in 100 foot per hour increments; resettable
Average Ascent Rate: From 0 to 28,000 feet per hour in 10 foot per hour increments over a period up to 18 hours

Weather
Sea Level Barometer: 28.84 to 31.00 inches of mercury with .01 resolution
Barometric Trend: -9.99 to +9.99 inches of mercury with .01 resolution
Temperature: 0°F to 122°F in 1° increments; accuracy ±4° above freezing, +4° for each 10° below freezing (32°F)

Clock
Time of Day: 12 or 24 hour format; to 1 second
Alarm: To one minute
Countdown Timer: To 23:59:00

Timing
Splits: Resolution .05 second to 59:59.95, 1 second 1:00:00 to 23:59:59
Laps: Resolution .05 second to 59:59.95, 1 second 1:00:00 to 23:59:59
Splits and Split / Lap Groups: Up to 20

Accessories
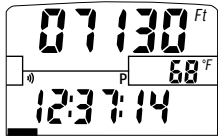Vertech Alpine and Ski wrist bands are available separately

Battery
CR2032 Lithium; approximately two year life

AVOCET
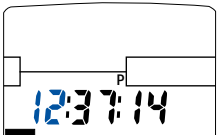
ALTITUDE / TIME

Altitude / Clock

Shows current altitude above or below sea level from -4,000 feet to +40,000 feet in 10 foot increments in the upper display. Shows temperature in Fahrenheit or Celsius degrees in the middle display and time in hours, minutes, and seconds in either 12 or 24 hour clock format in the lower display. In the 12 hour format PM is indicated by a P above the time display. Press the adjust button to reach the altitude adjust display.

ALTITUDE
Temperature
Time

Adjusting Altitude. After pressing the adjust button, the altitude digits blink. Adjust displayed altitude so that it matches a known altitude such as that of lake, a mountain top, a mountain pass, a landmark on a topographic map, or sea level. Altitude adjustment compensates for changes in barometric pressure caused by weather. Press option button to change altitude in 10 foot increments. Altitude increases or decreases according to the direction of the arrow at the left of the screen that alternates up and down. To switch between English and metric units, press the start / stop button. After adjusting altitude press the adjust button to exit, or the function button to go to clock set.

When altitude digits blink, option button changes them accord-ing to arrow direction.
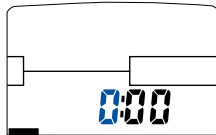
Clock Set. The hour digits blink. Advance them with the option button. At the correct hour press the function button. The minutes blink. Advance them with the option button. At the correct minute press the function button. The seconds blink. Press the option button to zero them. The seconds advance continually because the clock runs in the adjust display. To switch between 12 and 24 hour clock press the start / stop button. After setting the clock, press the adjust button to exit.

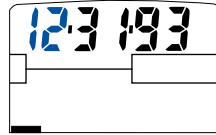*Change hours with option button. Go to minutes then seconds with function button.*
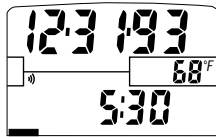
Date / Alarm

Shows date in month / day / year format, temperature, and alarm time. Press the start / stop button to activate the alarm. When activated the alarm symbol shows at the left of the display. To silence the alarm, press any button in any display. Press the adjust button to reach the date / alarm adjust displays.

DATE
Temperature
Alarm Time

Setting Alarm Time. After the adjust button is pressed, the hour digits blink. Advance them by pressing the option button. In 12-hour clock format a "P" above the time indicates PM. At the desired hour press the function button. The minute digits blink. Advance them with the option button. At the desired minute press adjust button to exit or the function button to set the date.

When hours blink, the option button changes them. Press function button to go to minutes, then set with option button.
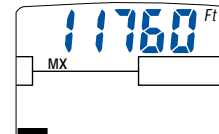
Setting the Date. The month digits blink. Advance months with the option button. At the correct month press the function button. The day digits blink. Advance the days with the option button. At the correct day press the function button. The year digits blink. Advance the years with the option button. At the correct year press the adjust button to exit.

When month blinks, change with option button. Press function button to go to day and year, and set with option button.
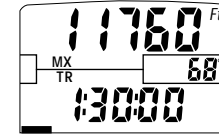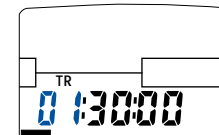
Maximum Altitude / Countdown Timer

Shows maximum altitude reached to within 10 feet. Temperature is shown in the middle display. The countdown timer has a range of 23 hours, 59 minutes. Start and stop with the start / stop button. The alarm sounds when it reaches zero. Press the adjust button to reach the maximum altitude reset display.

MAXIMUM ALTI-TUDE
Temperature
Countdown Timer

Resetting Maximum Altitude. The altitude digits blink after the adjust button is pressed. Press the start / stop button to reset the maximum altitude to the current altitude. Press the adjust button to exit or press the function button to set the countdown timer.

When the altitude digits blink reset to current altitude by pressing the start / stop button.

Setting the Countdown Timer. The hour digits blink. Advance them with the option button. At the desired hour press the function button. The minute digits blink. Advance them with the option button. At the desired minute press the function button. Press the adjust button to exit.

When hours blink, the option button changes them. Press function button to go to minutes, then set with option button.

VERTICAL SPORTS
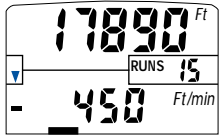
Daily Vertical Feet / Current Descent Rate Function

Accumulates to 299,990 vertical feet in the upper display with 10 feet resolution. Start or stop accumulation by pressing start / stop button. When function is turned on, the arrow at the left of the display blinks. In Ski mode it counts number of runs skied in middle display. A run is added after an altitude gain of 150 feet or more is followed by a 150 foot loss. The bottom display shows the current vertical rate in feet per minute with 50 feet per minute resolution. A minus sign to the left of the display indicates that you are descending; a plus sign that you are ascending. Current rate is calculated from a moving average weighted toward data from the last 30 seconds.

Resetting Daily Vertical Feet and Runs. Press the adjust button. Daily vertical feet digits blink. Press the start / stop button to reset them to zero, then press the adjust button to exit, or press the function button to go to runs reset. The runs digits blink. Press the start / stop button to reset runs to zero. Press the adjust button to exit.
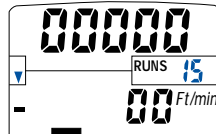
Selecting Descent or Ascent. When the daily vertical feet digits are blinking, you can choose whether descent or ascent will accumulate. Press the option button to select descent (down arrow) or ascent (up arrow).

Converting from Ski mode to Alpin mode. In the daily vertical feet display, press the adjust button, then press the function button twice. If the letter "S" appears your unit is set up as a Ski and will display vertical rates in feet per minute. Press the start / stop button to change the "S" to an "H". The H indicates that the unit is now set up in Alpin mode and will display rates in feet per hour. Press the adjust button to exit.

DAILY VERTICAL FEET

Runs
Current Descent Rate

When daily vertical feet or runs digits blink, press start/stop button to reset
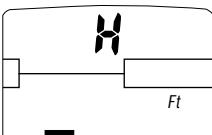
Start / stop button selects Alpine or Ski

Total Vertical Feet / Maximum Descent Rate

Accumulates to 299,990 vertical feet in upper display with 10 feet resolution. Start or stop accumulation by pressing start/stop button. Daily vertical feet and total vertical feet accumulators start and stop together, but they can be reset independently. Most skiers use them to record the vertical feet skied daily and weekly. In Ski mode the number of runs skied is shown in the middle display. The bottom display shows the maximum vertical rate of ascent or descent since the last reset. If the unit is measuring descent, only maximum descent rate is recorded, not ascent.

TOTAL VERTICAL FEET

Runs
Maximum Descent Rate

Resetting Total Vertical Feet and Maximum Rate. Press the adjust button. Total vertical feet digits blink. Press the start/stop button to reset to zero. Press the adjust button to exit, or press the function button to go to maximum rate reset. When the maximum rate digits blink, press the start / stop button to reset them to zero. Press the adjust button to exit. Runs are reset in the daily vertical feet display.
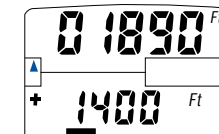
When total vertical feet or maximum descent rate digits blink, press start / stop button to reset them.

Ascent or Descent Timer / Average Descent Rate

Press the start / stop button to start the timer in the upper display. It times ascents or descents up to 18 hours. The lower display shows the average rate over the timed interval. Reset time and rate by pressing the adjust button. Runs are shown in the middle display when in Ski mode.

DESCENT TIMER

Runs
Average Descent Rate

DAILY VERTICAL FEET
Current Ascent Rate

TOTAL VERTICAL FEET
Maximum Ascent Rate

ASCENT TIMER
Average Ascent Rate

Alpin and Ski Displays

When the Vertech is set up as an Alpin, it will show ascent or descent rates in feet per hour and will not record runs. Resolutions are 100 feet per hour for current and maximum rate and 10 feet per hour for average rate. The Alpin does not display an average rate for the first 2 minutes. Current rate is calculated from a moving average weighted toward data from the last 10 minutes.

Normally Alpin mode will be set up to accumulate ascent, and Ski mode to accumulate descent. When you switch between Ski and Alpin, rate information will be reset, but accumulated vertical feet will be retained. Reset the two vertical feet displays if you don't want to mix vertical feet accumulated in the Ski and Alpin modes.

☁ WEATHER

29.92 Hg
68°F
+ 0.13

SEA LEVEL BAROMETER

Temperature
Barometric Trend
(Sea Level Barometer only changes when updated by the user)

Barometer & Barometric Trend

The upper display shows the sea level barometer in inches of mercury established at the last adjustment. The middle display is temperature, and the lower display, barometric trend. A plus sign (+) indicates an increasing trend, and a minus (-) sign a decreasing trend. Altitude change affects the trend, so trend information is only accurate when read at the altitude of the last trend reset. To reset the trend to zero, press the start / stop button.

Setting the Sea Level Barometer. To find your current sea level barometer, you must know your altitude. Sea level barometer does not change until you set it, and setting it has no effect on altitude functions. To set, press the adjust button. Both upper and lower displays blink. Use the option button to adjust the altitude in the lower display to your present altitude. This updates sea level barometer in the upper display. A sea level barometer above 29.92 inches is generally associated with stable weather, and one below 29.92 with unstable weather. If you don't know your altitude, you can set sea level barometer from a TV weather report or by phoning a local airport to get the current barometer reading. In this case, adjust the upper display until it matches the reported reading. The lower display then shows your current altitude. Exit by pressing the adjust button.

Long Term Barometer/Temperature Adjust. *Warning: If this adjustment is done incorrectly, barometer information will be inaccurate.* This adjustment may be needed after 1-2 years to correct minor barometer drift. After setting the correct altitude in the barometer adjust display, call a local airport to get the current sea level barometer. If the reported and displayed barometers agree, no adjustment is necessary. If there is a discrepancy, note whether your barometer reads high or low and by how much. Press and hold the adjust button for 10 seconds. The upper digits blink . Adjust them up if your barometer reads low or down if it reads high. Adjust with the option button by the amount of the discrepancy previously noted. Press the adjust button to exit. Now set sea level barometer as described above. You can reach the long-term temperature adjust from long-term barometer adjust by pressing the function button.

⏱ TIMING

0:00.00
SPL **0**
LAP
0:00.00

SPLIT TIME

Split Number
Lap Time

0:16.05
SPL **1**
LAP
1:32.55

Create new splits by pressing the option button while the timer is running.

Split / Lap Timer

Start and stop the timer by pressing the start / stop button. Splits and laps of up to 23:59:59 can be recorded. At 23:59:59 the display resets to zero and stops. Resolution is to .05 second to 59:59.95, then in seconds. Lap time appears in the lower display.
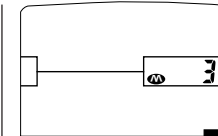
Resetting. Press the adjust button to reset both timers to zero.

Creating Splits. To create splits, press the option button while the timer is running. The display will freeze for 6 seconds then time for the new split will appear in the upper display. To record the last split, press the option button–you must start a new split to record the previous one. The split number is in the middle display. You can continue to create split / laps up to 20 total.

Creating Split /Lap Groups. After creating a number of splits / laps you can put the group into memory by pressing the adjust button. When the split / lap group is in memory, you can recall it later with the split / lap recall option. To reach the split / lap recall option, press the option button when the timer is stopped.

3

Split/Lap Group

1:18.05
SPL **4**
LAP Ⓜ
5:15.25

SPLIT TIME (RE-CALL)

Split Number
Lap Time (Recall)

Split / Lap Group Selection and Recall

After pressing the option button when the timer is stopped, the middle display will show the number of the last split / lap group recorded. Press the start/stop button to scroll through the different groups until you reach the group that you want to recall. Press the option button to view splits / laps in the selected group.

Resetting Groups. To reset you must be in the split / lap group display. To reset all the groups in memory, press and hold down the adjust button for 5 seconds. A beep indicates that the groups have been reset. Note that groups cannot be reset individually. Press the function button to return to the timer function

Viewing Split / Lap Groups in Memory. You can view each split/lap of a group by pressing the option button. The middle display shows the number of the selected split / lap. The 'M' icon indicates that you are viewing information from memory. If you want to recall another group, press the function button to return to the timer function, then press the option button to go to the group selection display.