SM-28 SKYMASTER Manual V 4.05 - English

Getting Started

Your Skymaster package contains one 400-Hr Lithium CR2032 battery, a lanyard, and voltage input numbers for humidity calibration. It is very important that you keep the calibration numbers for future calibration needs. Each instrument has unique voltage input numbers. To install the lanyard, feed one end through the hole at the bottom of the handle and tie it to the other end. Open case and click into fully opened position or, if using a tripod, click to the 90-degree position. Your Skymaster's sensors are extremely sensitive. Hold the Skymaster at the bottom of the handle, away from your face and body, to avoid getting false readings. **It is also important that you do not touch the sensors.**

Operating Modes:

Turn the unit on using the ON/OFF button on the left. Use the MODE button on the right to scroll to the desired function. To turn off the unit, press and hold the ON/OFF button for 3 seconds, until the display is blank, then release.

Changing the Units of Measure:

With the Skymaster on, change the units of measure by selecting the mode you wish to change (i.e. Windspeed). Next, press and hold the ON/OFF button and, while holding, press the MODE button to change the units of measure.
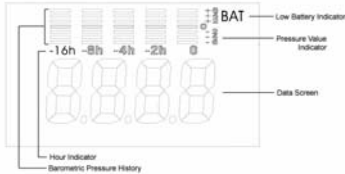
General Indicators

Bar Graph:
Using the bar graph: The bar graph represents a 16-hour history of the barometric pressure. The column labeled "0" indicates the current pressure. Each horizontal bar represents +/-2 mb/hpa as indicated by the pressure value indicator. *(Please note that the bar graph will not be displayed until barometric history has accumulated, as the Skymaster only records barometric pressure while the unit is on.)*
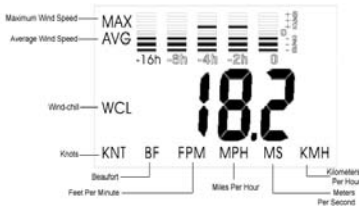
Low Battery Indicator:
Indicates the battery is running dry.

Data Screen:
Indicates the value of data being collected by the Skymaster.

Modes

Wind Speed

Units of Measure:
The Skymaster measures windspeed in six different units of measure: Knots, Beaufort, Feet Per Minute, Miles Per Hour, Meters Per Second, and Kilometers Per Hour. To switch between units of measure please see the Units of Measure section for instructions.

Current Windspeed:
In current windspeed mode, only the unit of measure will be shown.

Maximum Windspeed:
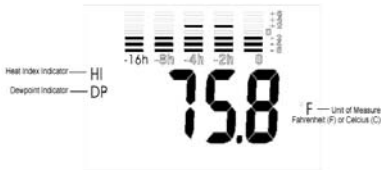Displays maximum speed recorded since the unit was turned on.

Average Windspeed:
Displays a running average over ten seconds.

Wind-Chill:
Displays the effect that air temperature combined with windspeed has on human skin.

General Temperature:
Displays the temperature in Fahrenheit or Celsius.
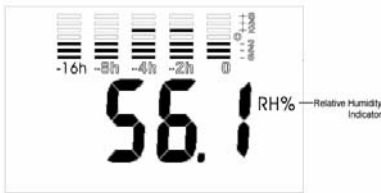
Temperature

Heat Index:
Displays the measure of how humidity acts along with high temperatures to reduce the body's ability to cool itself. In most cases, the heat index will be lower than the temperature.

Heat Index Indicator — HI
Dewpoint Indicator — DP

F — Unit of Measure
Fahrenheit (F) or Celcius (C)

Dew point:
Displays the temperature at which air becomes saturated with moisture (the temperature at which fog will form).

Relative Humidity

General Relative Humidity:
Displays the current relative humidity. Relative humidity is the amount of water vapor measured in the air, divided by the potential amount of vapor that the air can hold – at that temperature. **The relative humidity comes factory calibrated.** However, the Skymaster can be calibrated manually for more demanding field requirements. To calibrate the relative humidity, see the Humidity Calibration section.

RH% — Relative Humidity Indicator

Barometric Pressure

Unit of Measure:
The Skymaster can display barometric pressure in inches of mercury (inHg) or in millibars / hectopascals (hpa mb).

Barometer Indicator:
BAR - Indicates the unit is barometer mode.

Pressure History Bar Graph:

Altitude

Unit of Measure:
The Skymaster can display altitude in feet FT or meters M

General Altitude Mode:
The Skymaster can register altitudes between -900 to 9000 feet. Note: Altitude changes occur with air pressure changes, therefore it is useful to re-calibrate periodically.

Altitude Mode Icon:
ALT - Indicates the unit is in altitude mode.

IMPORTANT INFORMATION: The SM-28 altimeter calculates altitude based on changing air pressure. Changes in the air pressure (caused by changes in altitude or weather patterns) will cause the altitude reading to rise or fall. Your altitude should always be calibrated right before use as an altimeter.

You should re-calibrate altitude if your ascent or descent takes more then a short period of time. This will maintain instrument accuracy, since slight changes in pressure will cause the altitude readings to change while you rest at one location.
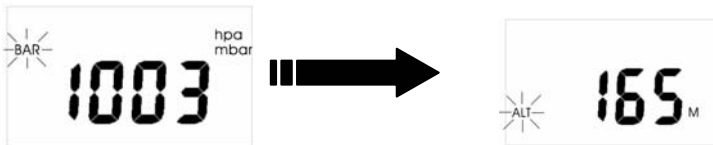
Remember that changing weather patterns will also affect your altitude readings. For example: If the pressure changes .50 InHg, you will experience a change of altitude of +/- 470 feet, if you are near sea level. Also note that changes of altitude will change your barometric pressure reading. For accurate relative pressure readings while climbing or descending, you will need to enter your altitude in calibration mode. Allow 15 minutes for the barometric pressure readings to respond to the newly calibrated altitude

Calibration
If you calibrate your altitude, you do not need to calibrate your barometer. It will calibrate itself to the relative pressure after 15 minutes. However, you may wish to calibrate your unit to a nearby reading obtained from a reliable weather source. Please remember that barometric pressure can change over a distance of just a few miles.

Barometric Pressure:
You may calibrate your unit in mb or inHg. Be sure to select your preferred mode prior to calibration. While the unit is **off**, press and hold the on/off key for 2 seconds. The screen will display current pressure with a flashing "BAR" indicator on the left side. When you see the indicator flashing, release the on/off button. Press the on/off key to go **up** in units, press the mode key to go **down** in units.   After calibrating barometric pressure, wait 5 seconds and the unit will automatically go into altitude calibration.   If you do not wish to calibrate altitude, simply leave the unit on and it will return to its normal operating mode. The changes have now been stored until you recalibrate it.

Altitude: First obtain your local altitude.
Note: You may calibrate your altimeter in meters or feet. Be sure to select the mode prior to calibration. With the unit **off**, press and hold the on/off key for 2 seconds. You will see the flashing "BAR" indicator on the left. After flashing for 5 seconds, it automatically moves to Altitude calibration mode and you will see the current altitude and a flashing "ALT" indicator. Press the on/off key to go **up** in units, press the mode key to go **down** in units. When you have completed the calibration, the unit will automatically return to normal operation in a few seconds. The changes have now been stored until you recalibrate it.

Humidity
NOTE: The relative humidity comes factory cairate.

Figure A   Figure B

First, locate the calibration sticker that was supplied with your Skymaster. It will have two numbers displayed. You will need to calibrate your unit to these numbers
With the unit on, press and hold the on/off button for 10 seconds. The display will turn off and then back on, displaying the number 700 (Fig. A). Enter the **first voltage input number** (in the above example, the number is 744) into this screen by pressing the mode button to scroll up (omitting the decimal). **Note:** When in humidity calibration mode, the mode button only scrolls up, not down, so it is important that you do not miss the number you are entering. When finished, press the on/off button again, you will see the number 3000 (Fig. B). Enter the **second voltage input number** (3056 in the example above), using the same procedure as before. To store the changes, press the on/off button. The unit will then shut off with the new values stored internally. NOTE: Each unit has unique voltage input numbers. It is crucial that you do not lose your instrument's numbers.

Impeller Replacement:
To replace the impeller, use a small screwdriver to loosen the set-screw found on the back of the weather monitor. Remove the impeller by twisting the impeller assembly clockwise (if you are facing the back of the windmeter) to the "O" position marked on the rear of the meter.

Battery:
To replace the battery, turn the compartment cover in a counter-clockwise direction to remove it. The battery will be visible in the battery compartment. Insert a new CR2032 lithium battery "+" side facing you. CR2032 batteries can be purchased anywhere batteries are sold.
NOTE: Different modes have different drains on the battery life. When left on in barometer mode, the battery will last 400 hours. Wind speed &humidity will drain the battery quickest

Severe Weather Alarm:
The severe weather alarm will sound if there is a dramatic change in pressure. The feature is set to go off if the air pressure changes by 6 millibars (up or down) within a 3-hour period. (This is a good indication of severe weather approaching.) The alarm will sound once for five

seconds. If the pressure continues to change by the same amount, the alarm will continue to sound once every hour.

NOTE: the storm alarm feature is disabled when the Skymaster is in Altitude mode. This is to prevent the alarm from sounding false alarms as your altitude changes (due to the altitude's effect on air density).

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