

Digital Compass

User Manual

1.Introduction

Thank you for purchase of Digital Compass. The following user guide provides step by step instructions for operation and troubleshooting.

2.Getting Started

2.1 Parts List

QTY	Item
1	Unit Dimensions: 2.5 x 2.0 x 0.6 inches
1	CR2032 battery
1	Carbineer clip

2.2 Precautions

⚠ Caution: This unit is water resistant but not water proof. Do not submerge in water. When installing the battery, make sure the gasket is properly seated (see battery installation instructions). Avoid leaving out in the rain.

⚠ Caution: Keep away from strong magnetic forces, which can destroy the compass.

⚠ Caution: Do not drop or apply excessive force to the LCD display. When replacing the battery, apply force to the outer ring.

⚠ Caution: Do not operate outside of the specified temperature range (14 to 140 °F). Use your body warmth to keep within the low temperature range.

📌 Note: Do not use a magnetized CR2032 battery, which can corrupt the compass measurement.

📌 Note: Do not use near strong magnetic or EMI forces (TVs, computers, electronics) which can corrupt the compass measurement.

2.3 Installing the Battery

Rotate the back cover counter clockwise, gripping the unit with both hands, using your index fingers and thumbs. Rotate until it stops, then gently pry off the back cover with your fingers, exposing the battery compartment.

❏ Note: you may have to squeeze on the outer ring (not the display) and apply force in the clockwise and counterclockwise direction repeatedly (work back and forth) to free the back cover after extended use, due to sweat and other debris. Make sure your fingers are dry.

Insert the CR2032 battery (+ side up), and close the back cover, insuring the gasket is firmly seated in the housing trace, as shown in Figure 1.

To remove the battery, use a small pen or paperclip to pry the battery out of the battery compartment.

To close the back cover, rotate the back cover clockwise until the back cover is completely closed. The display should be powered up in the time and date mode, and ready for use.

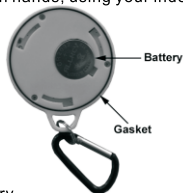


Figure 1

3. Set Mode

To enter the **SET** Mode, press and hold the **MODE** button for 3 seconds. To exit the **SET** mode and return to the NORMAL mode at any time, press and hold the **MODE** button again for 3 seconds. The **SET** mode will also automatically exit after 30 seconds of inactivity, and return to the NORMAL mode.

The following sections describe the settings available in the Set Mode. To skip any step, press the **MODE** button again.

3.1 12Hr/ 24Hr Format

The hour format will begin flashing. Press the **SET** button to toggle between 12 Hour (AM/PM) and 24 Hour format. Press the **MODE** button to continue to the next step.

3.2 Time

The hour will begin flashing. Press the **SET** button to advance the hour. Note that in the 12 hour mode, the P icon will be displayed to designate PM (no icon is present for AM). Press the **MODE** button to set the minute. The minute will begin flashing. Press the **SET** button to advance the minute. Press the **MODE** button to continue to the next step.

Note: If 12 hour time is selected, the date format is automatically displayed as Month.Day. If 24 hour time is selected, the date format is automatically displayed as Day.Month.

3.3 Date

The month will begin flashing. Press the **SET** button to advance the month. Press the **MODE** button to set the day.

The day of the month will begin flashing. Press the **SET** button to advance the day. Press the **MODE** button to continue to the next step.

3.4 Magnetic Declination

The compass magnetic declination calibration **Cb** icon will be displayed and the declination calibration value will begin flashing. Press the **MODE** button to advance to the next step.

Note: The maximum declination is 30°. To set a negative declination, advance past 30° to “roll over” to -30°.

3.5 Compass Calibration

The 16 point compass reference points will begin flashing. Press the **SET** button to enter the compass calibration mode. The compass angle and CAL icon will be displayed.

The following procedure must be carefully and precisely followed or the calibration procedure will fail.

1. On a flat, level surface, slowly rotate the compass in the clockwise direction. When the compass reaches exactly 0° , stop for at least 3 seconds. If you overshoot this reading, slowly rotate counterclockwise until it reads exactly 0° . Proceed to the next step.

2. Rotate the compass clockwise until it reads exactly 90° and stop for at least 3 seconds. If you overshoot this reading, slowly rotate counterclockwise until it reads exactly 90° . Proceed To the next step.

3. Rotate the compass clockwise until it reads exactly 180° and stop for at least 3 seconds. If you overshoot this reading, slowly rotate counterclockwise until it reads exactly 180° . Proceed to the next step.

4. Rotate the compass clockwise until it reads exactly 270° and stop for at least 3 seconds. If you overshoot this reading, slowly rotate counterclockwise until it reads exactly 270° . Proceed to the next step.

5. Rotate the compass clockwise until it reads exactly 0° again, and stop for at least 3 seconds.

6. Once calibrated, the CAL icon will disappear and the unit will return to normal mode. If this does not occur, please repeat this procedure again. If successful, the unit will return to normal mode.

4. Normal Mode

The default normal mode display is Time and Date. This mode consumes the least amount of energy, and will always return to the Time and Date mode after 30 seconds of inactivity to save battery life.

4.1 Time and Date Display

The default display mode is Time and Date. The time is the primary display and the date is the secondary display, as shown in Figure 3.

Press the **SET** button to change date and seconds display, as shown in Figure 4

Press the **MODE** button to continue to the compass display mode



Figure 3



Figure 4



Figure 5

4.2 Compass Mode

The compass direction (in degrees) is the primary display and the 16-point cardinal direction (N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW, WSW, W, WNW, NW, NNW) is the secondary display, as shown in Figure 5. A four point bearing is indicated at the circumference of the display, with the main bearing indicator pointing north.

Press the **MODE** button to return to the time and date display mode.

5. Backlight

To activate the backlight, press and hold the **SET** button for three seconds. The backlight will

remain on for 30 seconds of inactivity.

6. Low Battery Indicator

When the low battery indicator icon is displayed  , it is time to replace the battery

7. Discussion of Features and Limitations

7.1 Magnetic Declination

Magnetic declination is defined as the angle between magnetic north (the direction the north end of a compass needle points) and true north. Only a GPS can determine true north by knowing your exact orientation on the earth. All digital compasses measure magnetic north. The declination is positive when the magnetic north is east of true north. The declination is negative when the magnetic north is west of true north. To determine the declination for your location, visit:

<http://www.ngdc.noaa.gov/geomagmodels/Declination.jsp>

For example, Phoenix, AZ produces the following result:

Declination = 10° 59' E changing by 0° 6' W/year (or +10 degrees 59 minutes changing 6 minutes per year). To convert to decimal format:

Declination = $10^{\circ} + 59'/60 (^{\circ}) = 10.98^{\circ}$ (rounded to the nearest integer, Declination = 11°).

Enter +11 into the display. This will offset magnetic north by +11 degrees (or 11 degrees to the East) to true north.

Note that the magnetic declination changes as a function of time for your location. In the above example, the declination changes -6 minutes (or 0.10° per year, or about 1° every 10 years). Thus, the time function is insignificant.

7.2 Digital Compass Measurement

The compass must be level to accurately measure bearing. This can be done by placing on a flat surface (best), or in the palm of your hand. This is common with most digital compasses (some compasses are tilt compensated, but are expensive).

8. Accessories

Accessory	Image	Description
Cr2032 3 Volt Lithium Button Cell Battery - One Battery		Standard CR2032 3 Volt Lithium Battery (1 battery)

9. Liability Disclaimer

Please help in the preservation of the environment and return used batteries to an authorized depot.

The electrical and electronic wastes contain hazardous substances. Disposal of electronic waste in wild country and/or in unauthorized grounds strongly damages the environment. Reading the "User manual" is highly recommended. The manufacturer and supplier cannot accept any responsibility for any incorrect readings and any consequences that occur should an inaccurate reading take place.

This product is designed for personal use as indication of weather conditions. This product is not to be used for medical purposes or for public information.

The specifications of this product may change without prior notice.

This product is not a toy. Keep out of the reach of children.

No part of this manual may be reproduced without written authorization of the manufacturer. Sunroad Technology WILL NOT ASSUME LIABILITY FOR INCIDENTAL, CONSEQUENTIAL, PUNITIVE, OR OTHER SIMILAR DAMAGES ASSOCIATED WITH THE OPERATION OR MALFUNCTION OF THIS PRODUCT.

16. Warranty Information

Sunroad Technology provides a 1-year limited warranty on this product against manufacturing defects in materials and workmanship. This limited warranty begins on the original date of purchase, is valid only on products purchased and only to the original purchaser of this product. To receive warranty service, the purchaser must contact Sunroad Technology for problem determination and service procedures.

Warranty service can only be performed by Sunroad Technology. The original dated bill of sale must be presented upon request as proof of purchase to Sunroad Technology.

Your Sunroad Technology warranty covers all defects in material and workmanship with the following specified exceptions: (1) damage caused by accident, unreasonable use or neglect (lack of reasonable and necessary maintenance); (2) damage resulting from failure to follow instructions contained in your owner's manual; (3) damage resulting from the performance of repairs or alterations by someone other than an authorized Sunroad Technology authorized service center; (4) units used for other than home use (5) applications and uses that this product was not intended (6) the products inability to receive a signal due to any source of interference or metal obstructions and (7) extreme acts of nature, such as lightning strikes or floods.

This warranty covers only actual defects within the product itself, and does not cover the cost of installation or removal from a fixed installation, normal set-up or adjustments, claims based on misrepresentation by the seller or performance variations resulting from installation-related circumstances.

