GIZMOLOGIST

BLUENUMI CLOCK
USER'S GUIDE

Bluenumi Clock User's Guide
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Gizmologist Electronic Creations

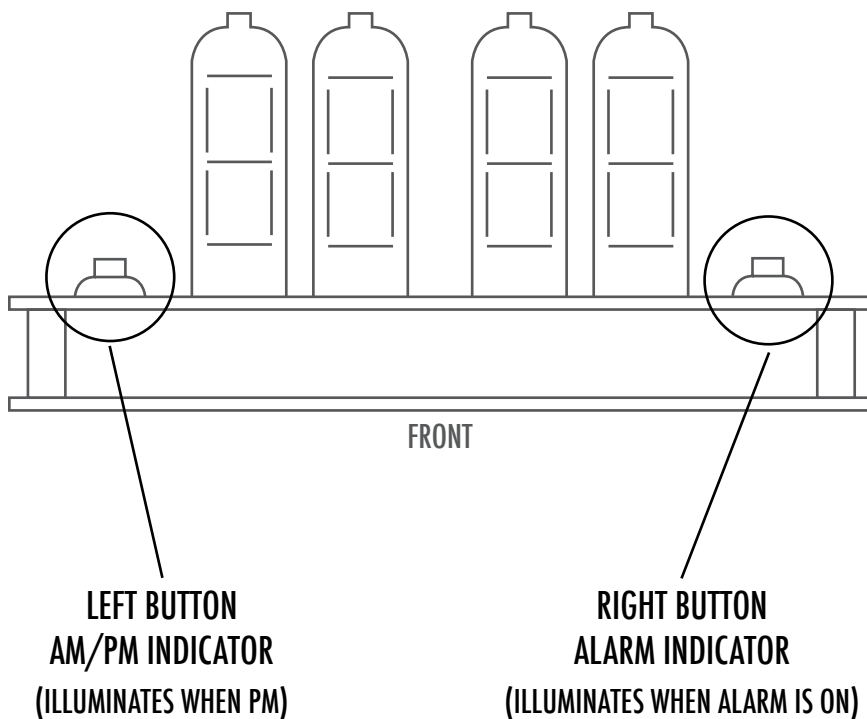# CONTENTS

FEATURES

- "Retro" orange glowing display featuring Soviet-era IV-9 numitron tubes

- Blue LED underlighting for each display tube, with pre-programmed fade effects

- Programmable alarm

- Ten-year backup battery for accurate time-keeping and alarm memory preservation during loss of mains power

- 12- or 24-hour operating mode with AM/PM indicator

- Easy display blanking for nighttime use and tube life preservation

- 100% open source hardware and software, licensed under the Creative Commons Attribution Share-alike and GNU General Public License v3, respectively

- Arduino-compatible firmware, with easy reprogrammability using RS-232 serial for those who wish to customize the clock

LAYOUT

FRONT

LEFT BUTTON
AM/PM INDICATOR
(ILLUMINATES WHEN PM)

RIGHT BUTTON
ALARM INDICATOR
(ILLUMINATES WHEN ALARM IS ON)

SETTING THE TIME

1   Press *and hold* the LEFT button until the current time begins flashing.

2   Press the RIGHT button to advance to the first setting: 12- or 24-hour operating mode.

3   Press the LEFT button to toggle between 12- and 24-hour operating mode.

4   When satisfied with your selection, press the RIGHT button to advance to the next setting: the tens digit of the hours display.

5   Press the LEFT button to cycle through the values for the tens digit of the hours display.

6   When satisfied with your selection, press the RIGHT button to advance to the next setting.

7   Continue using the RIGHT button advance through the remaining digits and the AM/PM setting (if in 12-hour mode). Use the LEFT button to cycle through the values in each setting.

8   When finished, **press and hold** the LEFT button until the display stops flashing to save your settings.

SETTING THE ALARM

1 Press *and hold* the RIGHT button until the current alarm time begins flashing.

2 Press the RIGHT button to advance to the first setting: the tens digit of the hours display.

3 Press the LEFT button to cycle through the values for the tens digit of the hours display.

4 When satisfied with your selection, press the RIGHT button to advance to the next setting: the ones digit of the hours display.

5 Press the LEFT button to cycle through the values for the ones digit of the hours display.

6 Continue using the RIGHT button to advance through the remaining digits and the AM/PM setting (if in 12-hour mode). Use the LEFT button to cycle through the values in each setting.

7 When finished, press *and hold* the RIGHT button until the display stops flashing to save your settings.

USING THE ALARM

ENABLING/DISABLING THE ALARM

To enable or disable the alarm, simply press the RIGHT (ALARM) button when in normal operating mode. When the RIGHT button is illuminated red, this means that the alarm is enabled. When it is not illuminated, the alarm is disabled.

TURNING OFF THE ALARM

When the alarm is sounding, simply press any button on the clock to turn it off. The alarm will not sound again for 24 hours. (NOTE: There is no "snooze" feature on this version of the Bluenumi clock.)

DISPLAY BLANKING

The Bluenumi Clock includes a "display blanking" feature that makes it easy to turn off the entire display, while still allowing the clock to run from mains power. This serves two purposes:

- It allows you to use the clock in a darkened room without being disturbed by its bright display.

- It allows you to extend the life of the display tubes by disabling them when you do not plan to use the clock for extended periods.

To blank the display, simply press both buttons simultaneously until the display and all LEDs turn off.

To TEMPORARILY unblank the display, press any button. The display will illuminate for 3 seconds before returning to its blank state.

To COMPLETELY unblank the display, press both buttons simulatenously until the display and all LEDs turn on.

SAFETY AND CARE

Important: Please read all safety information in this manual before the clock is turned on and operated.

SAFETY INSTRUCTIONS

- Keep the clock in a dry room free from excessive humidity or dust. Because of its open case, the clock should not be used near water and should be kept away from sources of liquids such as drinks, washbasins and bathtubs.

- The display tubes on the clock are made of glass and are extremely fragile. Ensure that the clock is placed on a stable surface, free from the possibility of being struck inadvertently.

- If one of the display tubes is broken or damaged, immediately pull the power plug out of the clock and contact customer support. The clock should not be used again until the tube has been replaced.

- Use only the +5V power supply provided with the clock. Should the power supply break or become damaged, or should the power cord become frayed, discontinue use immediately and contact customer support.

- The clock is not a toy! Ensure that the clock is kept out of the reach of children.

- Never insert objects of any kind into the openings on the sides of the clock.

- Do not use the clock for anything other than

the intended use as described in this guide.

CLEANING

- Never use liquids such as soapy water or ammonia-based glass cleaners when cleaning the clock. These could potentially damage the acrylic case or electronic componentry inside.

- Always unplug the clock from the wall outlet prior to cleaning. The internal backup battery will ensure continued operation even while unplugged.

- Use only a **soft, lint-free, damp cloth** to dust and clean the clock externals. Ideal materials include microfiber, cotton T-shirt material, or facial tissue. Never use paper towels or other rough products that may permanently scratch the acrylic case.

- To dust the clock internals, use a compressed air canister suitable for cleaning electronics. Never insert cloth or other materials into the clock casing.

REPLACING THE BATTERY

The life expectancy of the internal backup battery is approximately ten years.

If the clock does not store time when no power is available, the internal battery is probably weak. Replace the battery using only a lithium coin cell of type CR2032.

To replace the battery, unplug the clock from the wall outlet. Remove the screw securing the corner of the clock case closest to the battery holder.

Place the screw, nut, washers, and nylon spacers in a safe place for reassembly.

From the front of the clock, use a small screwdriver to push the latch on the right side of the battery holder until the battery pops out of the holder. Remove the old battery. Slide the new battery into the battery holder with the positive (+) side of the battery facing upwards. Push the new battery down with a small screwdriver until it latches into place. Re-insert the nylon spacers, and secure the case with the previously removed screw, washers and nut.

Should this procedure prove challenging, you may wish to unscrew each of the three remaining corner screws securing the clock case to provide easier access to the clock internals. If you have any problems with the battery replacement process, please contact customer support.

WARRANTY

HARDWARE WARRANTY

Pre-Assembled Clocks ONLY: Pre-assembled Bluenumi clocks are guaranteed for a period of **one year** after date of purchase to be free of defects in materials and workmanship. In case of malfunction, the clock will be repaired or replaced at the discrection of Gizmologist Electronic Creations. The warranty does not cover cracked or shattered numitron tubes, except those damaged in shipment.

If you believe your clock is malfunctioning, contact customer support. Clocks eligible for warranty service or evaluation must be shipped to Gizmologist Electronic Creations at the customer's expense. Return postage and shipping will be paid by Gizmologist.

FIRMWARE WARRANTY

The firmware programmed into the microporcessor in the clock is licensed under the GNU General Public License v3.0, and carries NO WARRANTY WHATSOEVER, including merchatability and fitness for a particular purpose.

Links to source code for the firmware are available at http://gizmologi.st

CUSTOMER SUPPORT

For customer support, please contact Sean Voisen at Gizmologist Electronic Creations using any of the following options:

Phone: +1 (760) 576-5550

E-mail: support@gizmologi.st

Web: http://gizmologi.st