

mindwalker 4 Meter Instructions V2.00

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Note: This meter has upgradeable *firmware*. These instructions relate only to Version 2.00 firmware. (See section on Firmware Upgrade)

Quick Start Guide

- Turn On** – Press button A
- Turn Off** – Press and hold button B
- Sensitivity** – Turn knob, left display momentarily shows sensitivity setting. Also press and hold button C to display sensitivity setting at any time.
- Counter Enable** – Press button C to toggle counter on/off. When off, triangle will flash on left display.
- Display Counter** – Press button 1 to show TA Counter on right display.
- Zero Counter** – Press and hold button 1
- Display Clock** – Press button 2 to show clock on left display.
- Clock/Counter** – Press button 3 for 2 second toggle between Clock and Counter display.
- LEDs** –
Green = needle SET in progress
Blue = Body Motion detected
Red = Unassigned (except at Turn Off)

Detailed Operation

Turn on sequence

Press button **A**. The green **LED** illuminates and the firmware version is shown (F on left, 2.00 on right). After 2 seconds the green LED will turn off and the needle will SET. The left display will momentarily show sensitivity setting and then TA position. The right display shows the TA counter. The flashing triangle indicates that the counter has not yet been enabled.

Options:

If button **C** is held down while turning on the meter, automatic needle SET will be disabled and the needle must be SET manually.

Holding down button **A** more than 2 seconds at turn on (until the green LED turns off) will cause the meter to enter **Setup Mode** (see details in later section).

Turn off

Hold down button **B** for 2 seconds. The red LED will illuminate briefly and the meter turns off. The meter will also turn itself off if there is no action for 1 hour.

Needle SET

The needle can be SET at any time by pressing button **A** or **B**.

In automatic SET mode, the needle will SET whenever it goes off the dial. There is a deliberate delay before this happens on the right hand side of the dial.

A needle SET is accompanied by the green LED (*or blue LED*, see TA Counter section).

Automatic needle SET can be disabled by holding down button **C** when turning on the meter.

Sensitivity

The rotary knob adjusts the sensitivity from 1 to 40.

Turning the knob will cause the left display to show the sensitivity setting. This can also be shown at any time by holding down button **C**. Note that this is always accompanied by a + symbol on the left of the display.

TA Counter

At turn on time the counter is zeroed and disabled, and is shown right display.
A flashing triangle on the left display indicates that the counter is disabled. The counter enable/disable can be toggled by pressing button **C**.

Counting is inhibited by the Body Motion Detector. If Body Motion occurs *causing the needle to go off the right hand side of the dial*, the counter will be disabled during the next needle SET. A needle SET is usually accompanied by the green LED, however a needle SET with counter inhibited is accompanied instead by the blue LED.

To permanently show the counter, press button **1**.
To zero the counter, hold down button **1** for 2 seconds.
To temporarily toggle between counter and clock display for 2 seconds, press button **3**.

Needle TA Counter

The counter can work continuously, not just when a needle SET occurs. It will only accumulate counts when the TA changes by 0.1 divisions or more, so small changes will be disregarded. See instructiond for **Setup Mode** on how to enable this feature. When enabled, the triangle will be permanently displayed.

Triangle flashing	=	TA counter disabled
Triangle absent	=	Normal TA counting enabled
Triangle permanent	=	Needle TA counting enabled

Clock

The clock can be permanently displayed on the small LCD by pressing button **2**.
To temporarily toggle between counter and clock display for 2 seconds, press button **3**.
Loss of power to the clock (such as battery removal) will cause a permanent time display of 0:00 until the clock is adjusted. To adjust the clock, see **Setup Mode**.

LED

The LED can display red, green or blue. See relevant sections in this document for the meaning of these LED colours.
Note that the brightness of each colour can be adjusted, see **Setup Mode**.

Body Motion Detector

Unnaturally sharp changes in the needle motion are detected as body motion. This is indicated by the blue LED. This feature is useful on automatic meters since the counter is then able to reject body motion, see **TA Counter** section.

Note that a good gentle can squeeze will not trigger the detector, and it can be used as a training exercise for this.

For those who find the blue LED irritating (such as during training drills with coach simulated reads) it can be turned off in **Setup Mode**.

Three levels of detection can be chosen, see **Setup Mode**. It is recommended to use the highest level unless it causes problems with triggering on heartbeat etc.

Firmware Upgrade

Like most modern electronic devices, the meter is controlled by a computer chip. This can be re-programmed to change features or operation of the meter. The program is called *firmware* and the version number installed in the meter is shown on the right display at turn on, while “F” is shown on the left display. Firmware can be upgraded via a USB cable connected to a computer running Windows operating system. A separate instruction document provides details.

Batteries

The meter runs on 2 AA alkaline batteries. A low battery condition is indicated at turn on by the red LED illuminating and the BAT symbol appearing on the display. To continue using the meter, press button **A**, and replace the batteries at the next opportunity.

Batteries should be inserted with positive end towards the removable cap. Always use a suitable sized coin to release the cap, a screwdriver can damage the plastic.

Note that most meter problems are caused by leaking batteries. It is advisable to remove them if the meter is stored for long periods, or change them at least every 2 years.

Setup Mode

This mode is entered by holding down button **A** for 2 seconds when turning on the meter. Release button **A** after the firmware version is displayed and the green LED turns off. The left display shows all segments, and the right display shows the clock.

Cycle through the settings in this order by pressing button **C**.

- 1 Green LED brightness
- 2 Blue LED brightness
- 3 Red LED brightness
- 4 Body Motion sensitivity
- 5 Needle TA counter on/off
- 6 Back to (1)

All settings will display their current value until changed by rotating the sensitivity knob.

LED Brightness

Use the sensitivity knob to change the brightness for each colour. The LED will light at the current brightness setting and only change if the sensitivity knob is moved while that colour is selected.

Body Motion sensitivity

In this mode the display shows a 'b' followed by a '1', '2' or '3'.

- b3** = most sensitive
- b2**
- b1** = least sensitive

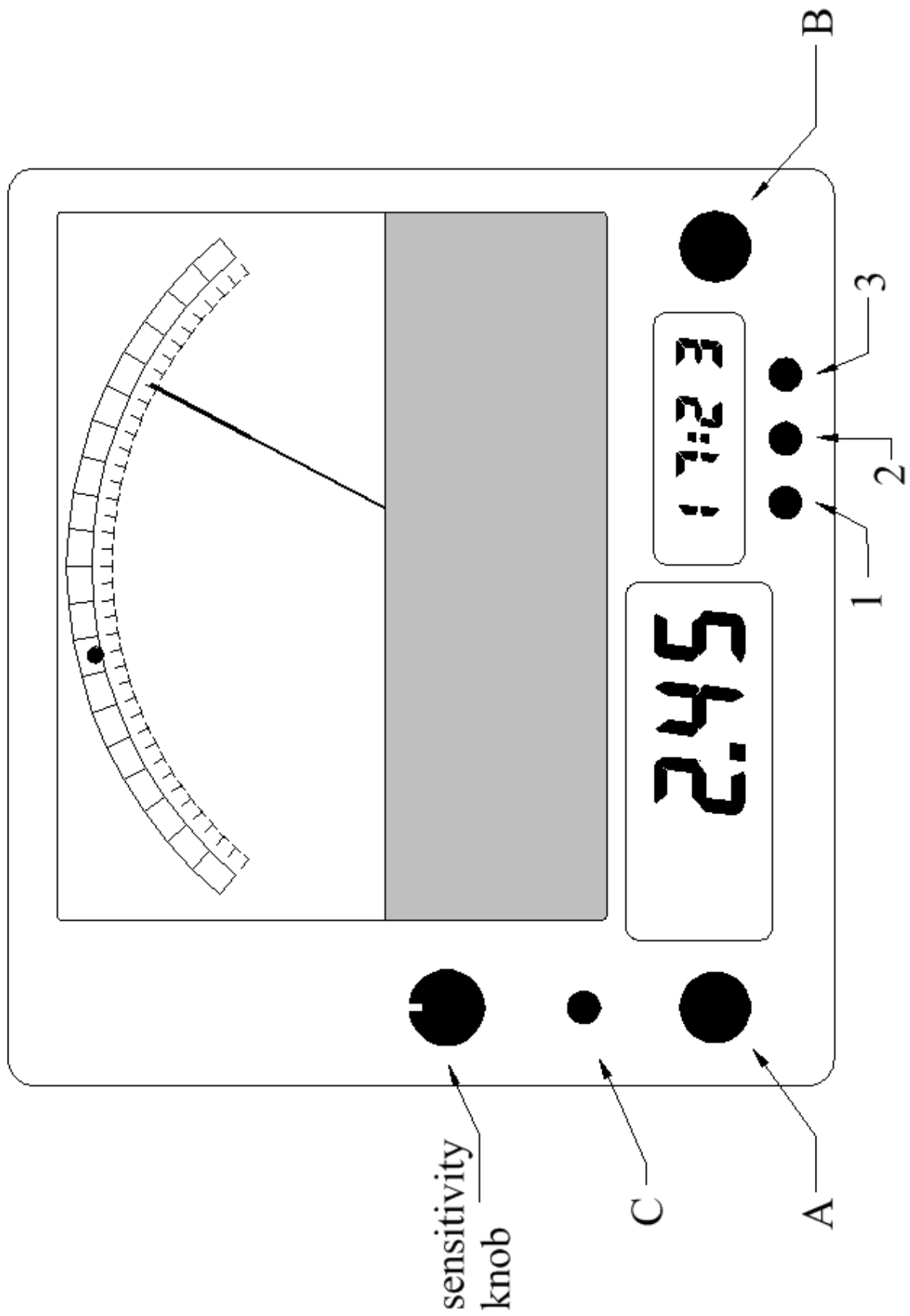
Needle TA Counter

In this mode a triangle symbol is displayed followed by the words '**on**' or '**off**'. Rotate the sensitivity knob to change setting.

Clock

Button **2** increments clock hours, button **3** increments minutes. Button **1** toggles between 12 and 24 hour mode. Clock **must** be set to correct time after pressing this button.

To exit **Setup Mode**, press button **A** again.



Changes in this revision

Improved filter
Body Motion sensitivity option
Needle TA counter option
Reduced battery consumption (almost half)

Revision History

V1.13
Change to filter

V1.12
Added heartbeat filter

V1.11
Fixed Clock hours bug.
Display toggle hold for 2 seconds.

V1.10
Fixed short Turn Off time bug.

V1.09
Fixed Upgrade Bug.

V1.08
Fixed LED brightness setting bug.
Finer control of LED brightness.
Added 12/24 hr clock option.
Reduced Counter Zero button press time.