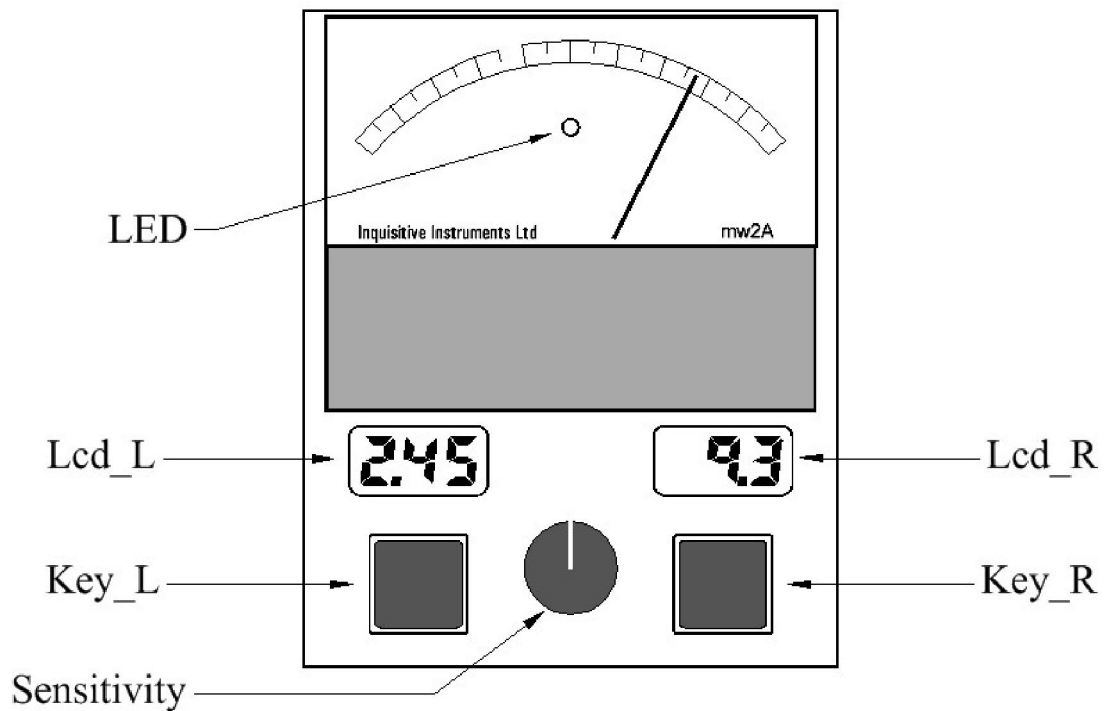


mindwalker 2A Meter User Manual

Issue 1.0
15th December 2013



Quick Start Guide

- Turn On** – Press Key_L
- Turn Off** – Press and hold Key_R until meter turns off. Meter will automatically turn off after 1 hour of inactivity.
- SET Needle** – Press Key_L.
- Sensitivity** – Turn knob, Lcd_L momentarily shows sensitivity setting. Also press and hold Key_L to display sensitivity setting at any time.
- Counter Enable** – Press Key_R to toggle counter on/off. When off, Lcd_R will flash.
- Zero Counter** – Press and hold Key_R until counter shows zero.
- LEDs** –
 - Green = needle SET in progress
 - Blue = Body Motion detected

Detailed Operation

Turn on sequence

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

Turn on options:

Holding down **Key_L** 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).

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

Turn off

Hold down **Key_R** for 5 seconds. The red LED will illuminate briefly and the meter turns off. The meter will also turn itself off after 1 hour of inactivity.

Needle SET

The needle can be manually SET at any time by pressing **Key_L**.

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 **Key_R** when turning on the meter.

Sensitivity

The rotary knob adjusts the sensitivity from 1 to 40.

Turning the knob will cause **Lcd_L** to show the sensitivity setting, which can also be shown at any time by holding down **Key_L**. It will revert back to displaying TA when the button is released.

TA Counter

A flashing display indicates that the counter is disabled. The counter enable/disable can be toggled by pressing **Key_R**.

To zero the counter, hold down **Key_R** for 2 seconds.

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.

Needle TA Counter

The counter can optionally work continuously, not just when a needle SET occurs. It will however only accumulate counts when the TA changes by 0.1 divisions or more, so small changes will be disregarded.

See instructions for **Setup Mode** on how to enable this feature.

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 SET 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.

Batteries

The meter runs on 2 AA alkaline batteries. A low battery condition is indicated at turn on by the red LED illuminating and **L** \square appearing on **Lcd_L**. To continue using the meter, press **Key_L**, 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. Battery life is over 500 hours.

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 **Lcd_R** at turn on, while **F** is shown on **Lcd_L**. Firmware can be upgraded via a USB cable connected to a computer running Windows operating system. A separate instruction document provides details.

Setup Mode

This mode is entered by holding down **Key_L** for 2 seconds when turning on the meter until the green LED turns off (2 seconds)
Lcd_L and Lcd_R will display all segments.

Cycle through the settings in this order by pressing **Key_R**.

- 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.

1,2,3: LED Brighness -

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.

4: Body Motion sensitivity -

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

- b 3** = most sensitive
- b 2**
- b 1** = least sensitive

5: Needle TA Counter -

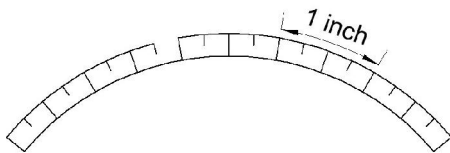
In this mode the display shows **n** followed by the words **o n** or **o F F**.
Rotate the sensitivity knob to change setting.

To exit **Setup Mode**, press **Key_L**.

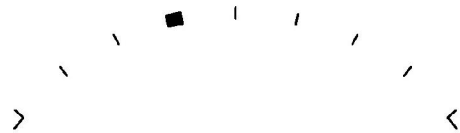
Specifications

Dimensions	14 cm x 11 cm x 6 cm
Weight	525 gm
Connectors	Standard 1/4" 2 pole Jack Socket for electrodes USB Socket for computer connection (future option) 3.5mm 3 pole Jack Socket (future options yet to be documented)
Batteries	2 x AA 1.5V Battery life 500 to 1000 hours

Dial Scale



Graduations correspond to 1/4" on larger sized dials



Optional Simple Scale available

Optional Extras Single and two hand electrodes, 43mm diameter, integral cable