



EASYSense Vu+

Users Guide



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What's supplied?



Getting to know your Vu+ data logger

Charging

Charge EASYSense Vu+ fully before first use

Connect Vu+ directly to a USB port on your computer* (or a powered USB hub) using the USB cable supplied with it.

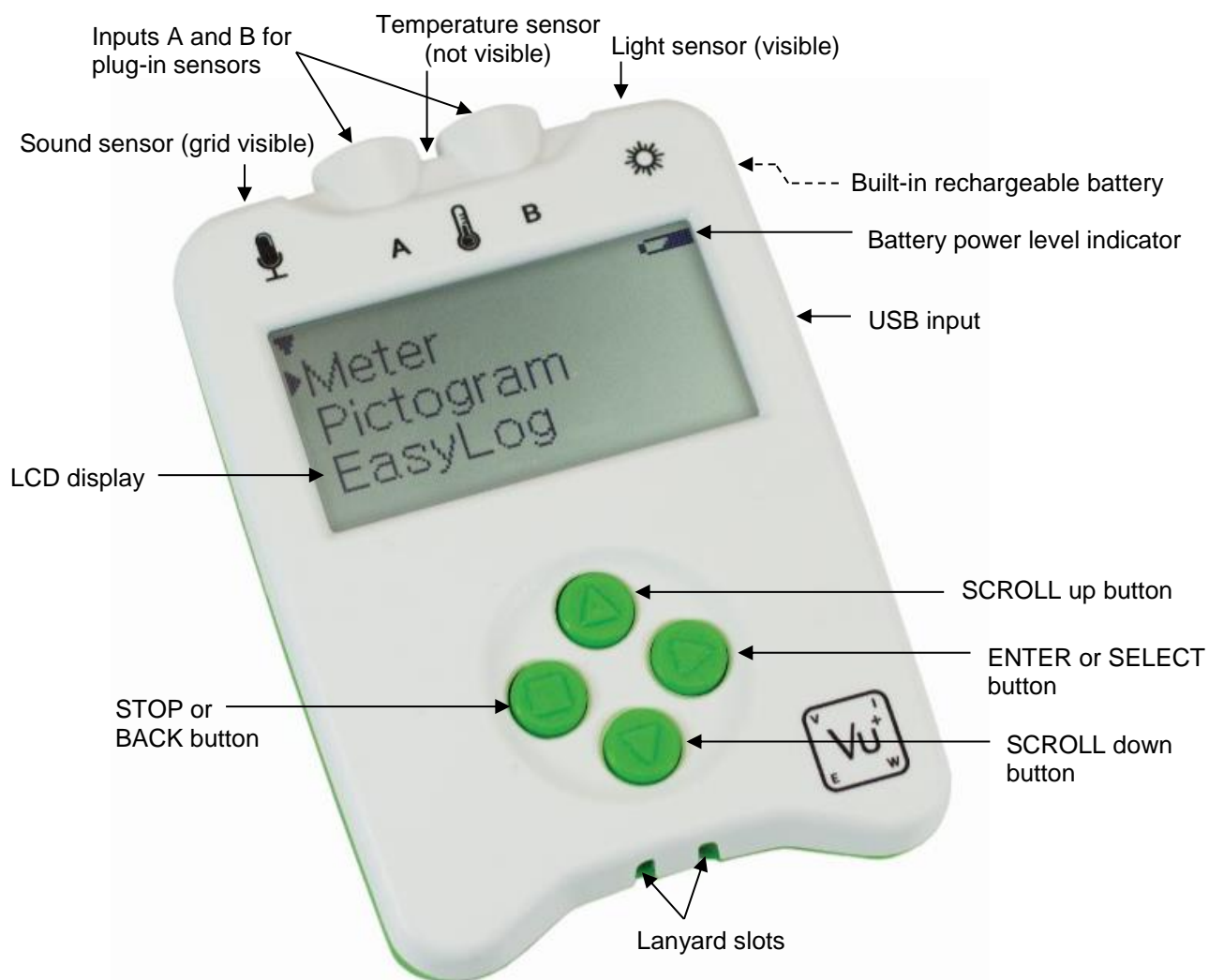
Note: Vu+ can also charge from a USB mains charger that outputs 5 V at 500 mA or more.

A full charge can take up to 8 hours.




A battery charging symbol will be displayed on Vu+'s screen while the logger is charging.

*Your computer must be turned on and not in sleep or standby mode; otherwise, the battery may drain instead of charge.

The EASYSense Vu+ data logger



Vu+ buttons




-  The ENTER button is used to start data collection, progress to the next screen, confirm a choice or take a sample.
-  The square STOP button is used to stop data being recorded or return to the previous screen.
-  The SCROLL buttons are used to scroll through menus on the LCD screen or to browse measurements during data logging.

To operate **EASYSense Vu+**, press any of these buttons.

Sensors

The built-in sensors

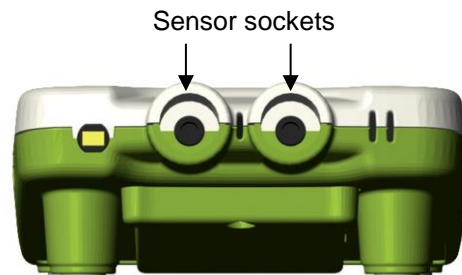
Vu+ is a fully self-contained portable data logger with 3 built-in sensors – Sound, Light and Temperature.

	Built-in Sensors	Ranges
	Sound	40 to 110 dBA
	Light level	Indoor 1 k lx (0 to 1,000 lx) In/Out 10 k lx (0 to 10,000 lx) Outdoor 100 k lx (0 to 100,000 lx)
	Temperature	Celsius 0 to 50°C Celsius 0 to 110°C Celsius -30 to 110°C Fahrenheit 0 to 120°F Fahrenheit 0 to 232°F Fahrenheit -22 to 230°F

The plug-in sensors

Sensors plug into the sockets labelled **A** and **B** at the top of the Vu+ logger

When a sensor is connected it will automatically be detected and displayed on the LCD display.



Changing a sensor's range or turning a sensor on or off

- Use the up or down buttons (▲▼) to scroll the list until the cursor is pointing at Meter and press the enter button ►.
- Press the enter button ► again.
- Use the up or down buttons (▲▼) to move the cursor until it is pointing at the appropriate sensor and press enter ►.
- Use the ▲▼ buttons to move the cursor until it points at the appropriate option (either Set range or Turn On or Off) and press enter ►.

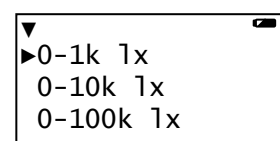
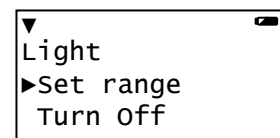
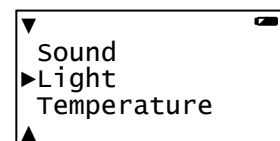
Note: If a sensor only has one range then only Turn Off will be available.

Set range

The cursor will indicate the current range selected.

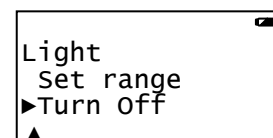
Use the up or down buttons (▲▼) to scroll the list until the cursor is pointing at the required range. Press enter ► to select the range.

Press the stop button ■ to return to the sensor window.




Turning a built-in sensor ON or OFF the display

With the cursor pointing at Turn Off or On press enter ► to return to the sensor window.



- Press the stop button ■ to return to Meters.

Note: If you change a sensor's range or turn it on/off via the logger while connected to a computer, it may be necessary to select New  in the software for these changes to be detected.

Ways to capture data with Vu+

There are different ways that Vu+ can be used to collect data.

1. As a standalone instrument:

Vu+ is used to display, collect and store data while disconnected from the computer. I.e.

- a. Display readings on its LCD screen (but not stored) using **Meter** or **Stopwatch** mode.
- b. Displayed, collected and stored using Vu+'s logging menu options e.g. **Pictogram**, **EasyLog**, **Snapshot**, **Timing** and **Counting**.
- c. Setup via **Setup Remote** in the **EASYSense** software to log data for a set time period.

The data collected is stored in Vu+'s memory to either be reviewed on Vu+'s screen or retrieved to the **EASYSense** software on a computer.

Multiple sets of data can be stored in Vu+'s memory. The actual number will depend on the size of the data sets and that is dependent on how many sensors are connected and how many readings are taken.

2. As a logger connected to a computer:

Vu+ is entirely driven by the software on the host computer. The data from the sensors is transmitted immediately to the computer and displayed on the computers screen using the options in the **EASYSense** software. This method of collection is useful for many classroom-based experiments.

Using Vu+ standalone (without a computer)

EASYSense Vu+ has no ON switch. To 'switch' on press any button on the panel.

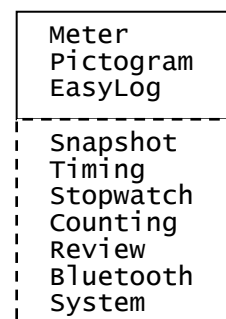
Notes:

- If Vu+ is operating on battery power and is idle, it will automatically switch itself **off** after 2 minutes. Press any button to resume operation.
- Vu+ does not auto switch off while powered from a USB port.

Vu+ has a menu of different options available, which are displayed on the built-in LCD screen.

There are seven working modes, which can be used to collect data without being connected to the computer. These are **Meter**, **Pictogram**, **EasyLog**, **Snapshot**, **Stopwatch**, **Timing** and **Counting** modes.

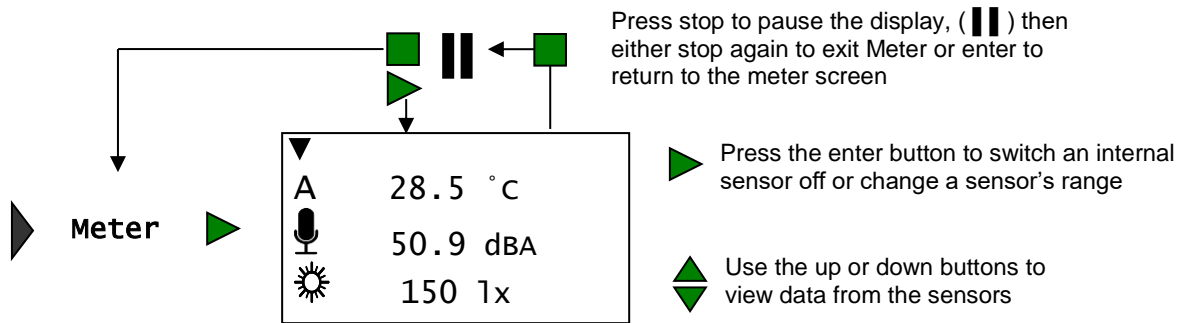
A menu option is selected by using the scroll buttons to move the cursor up ▲ or down ▼ until it is pointing at the required option then press the enter ► button to select.



If using plug-in sensors they should be connected before entering a logging mode (except for Meters when they will automatically ID and then display readings).

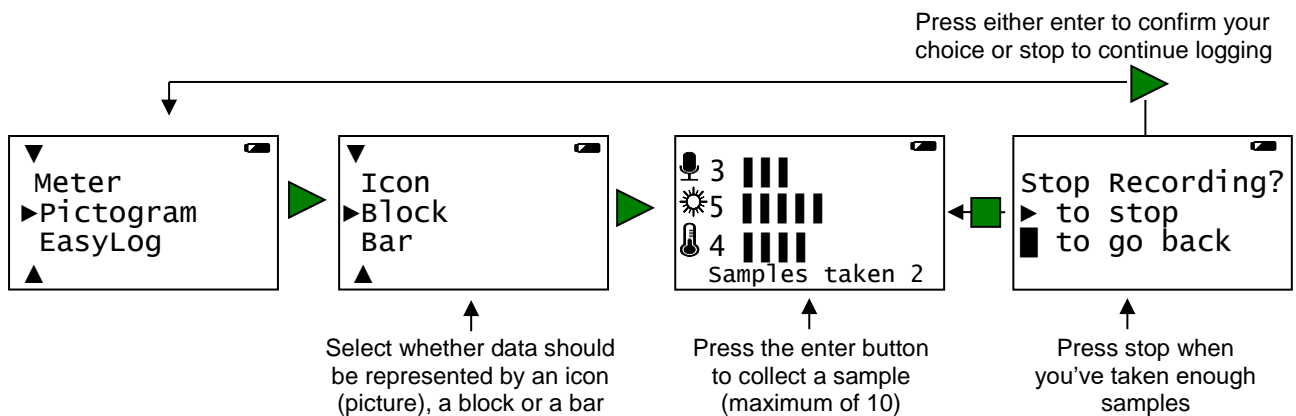
Meter

In Meter mode Vu+ will display measurements from the sensors (built-in and any plug-in sensors) on the LCD screen but will not store any data.



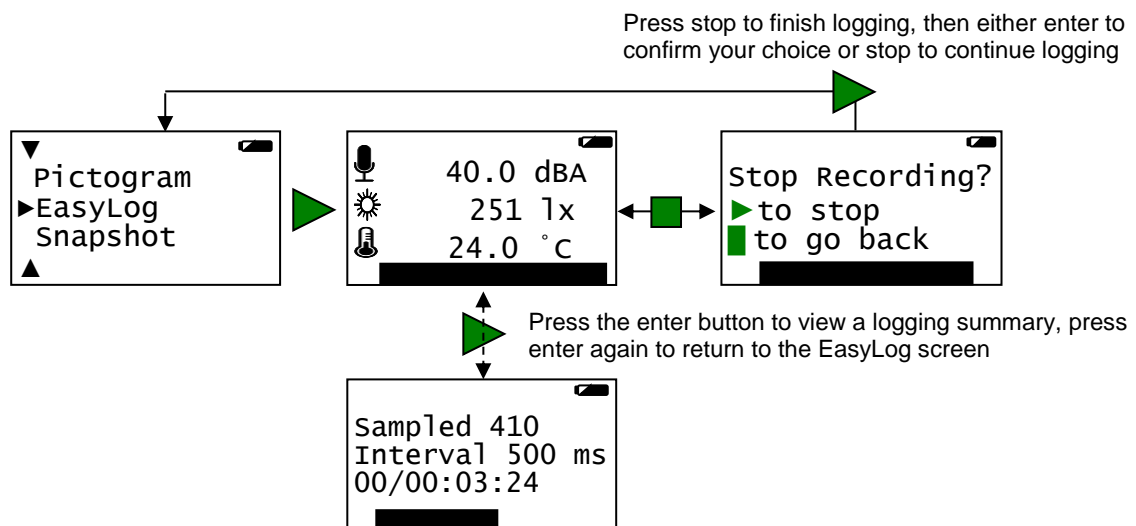
Pictogram

Pictogram uses an image, block or bar to represent the data. Each represents a 10th of a total range (or span) of the sensor and displays a number from zero to ten (proportional to the reading). Sensor readings are captured every time the enter button ► is pressed, rather than at regular time intervals. The samples are stored to Vu+'s memory - a maximum of ten samples per data set.



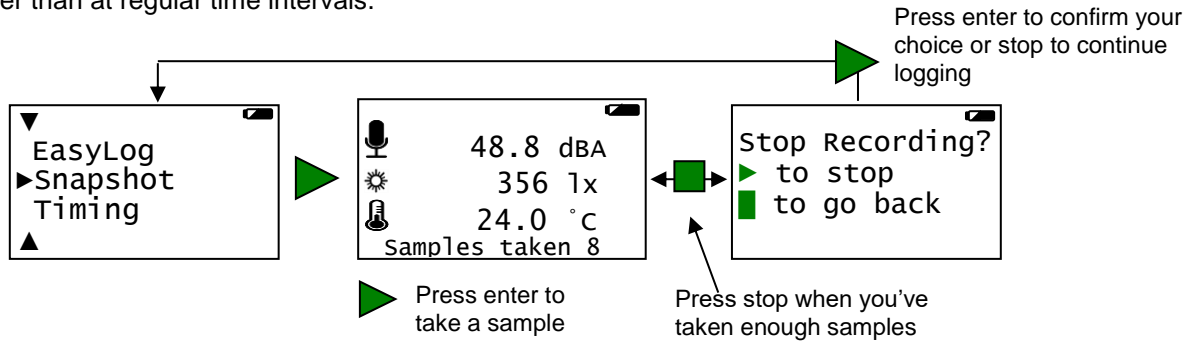
EasyLog

With EasyLog it is not necessary to set the duration of the recording – Vu+ will capture data until stopped. The bottom line of the LCD display is a visual indicator of logging as it takes place, each time the line completes logged samples are compressed and the sample rate alters.



Snapshot

Snapshot mode enables you to capture sensor readings every time the enter button ► is pressed, rather than at regular time intervals.



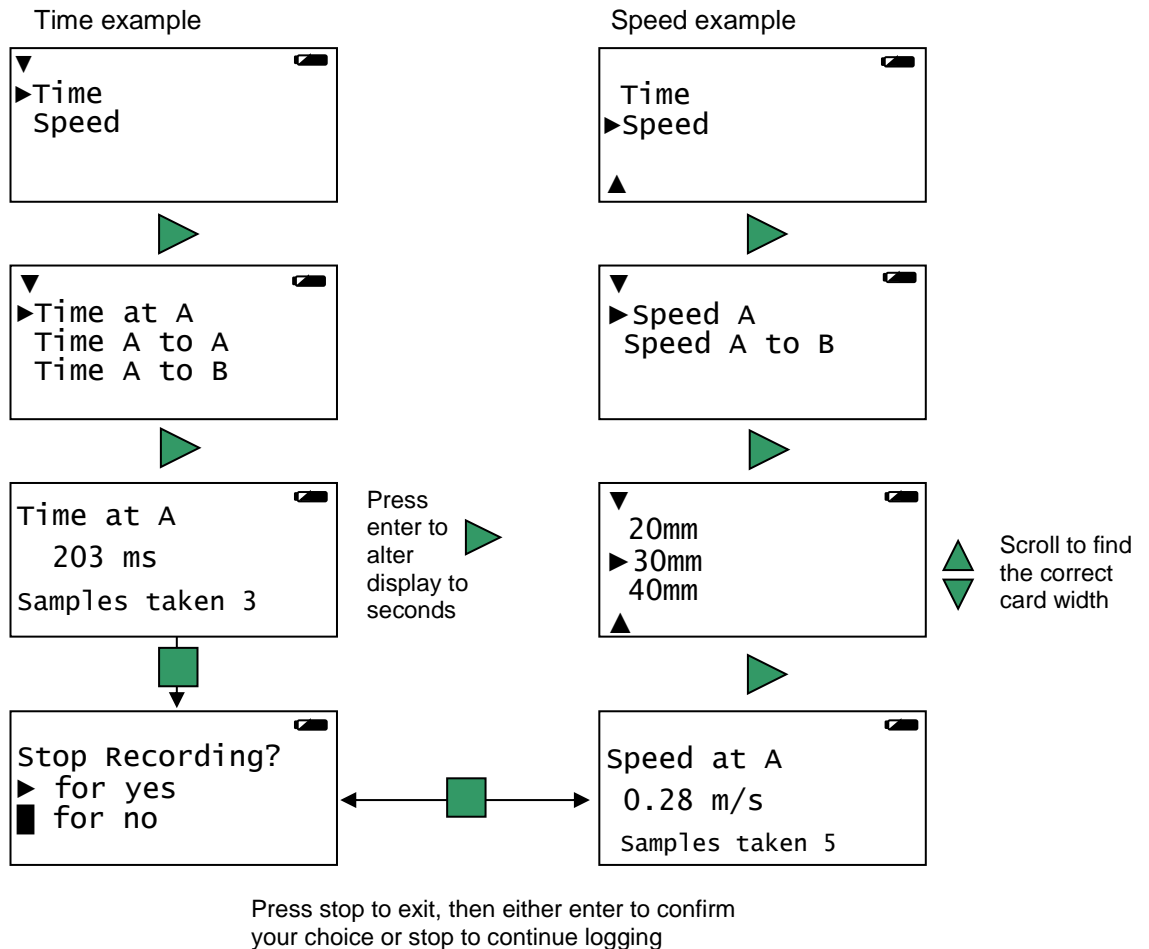
Timing

Timing is used to set up and store simple time and speed measurements. Connect the digital switch type sensors before selecting Timing either to Input A or both Input A and Input B. The options possible are Time at A, Time from A to B, Time A to A (stopwatch), Speed at A and Speed from A to B.

For Vu+ to perform direct calculations of speed, you will need to select the parameter used in the experiment i.e.

- For **Speed A to B** select the distance between the sensor connected to input A and the sensor connected to input B.
- For **Speed at A** select the width of the single interrupt card that will pass through the Light gate connected to input A.

Values for Time will be displayed in ms on the LCD display, press enter ► to alter to seconds.



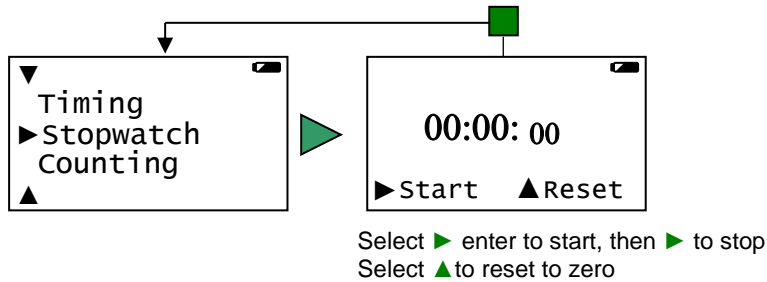
Press stop to exit, then either enter to confirm your choice or stop to continue logging

Stopwatch

Stopwatch is used to time events by using:

- The enter ► button on Vu+ to start and stop the timer.
- One digital switch type sensor connected to input A or B to start and stop the timer.
- Two digital switch type sensors connected to input A and B, use A to start and B to stop the timer.

If a plug-in sensors are connected, Vu+ will automatically use the input from this sensor.

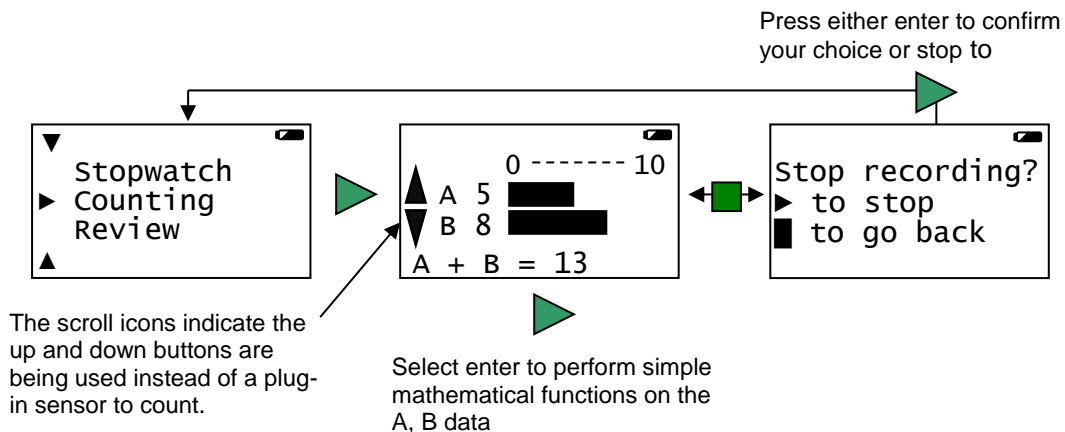


Counting

Counting is used to count events by either using digital switch type sensors connected to Input A, both A and B or the up ▲ (A) or down ▼ (B) buttons on Vu+.

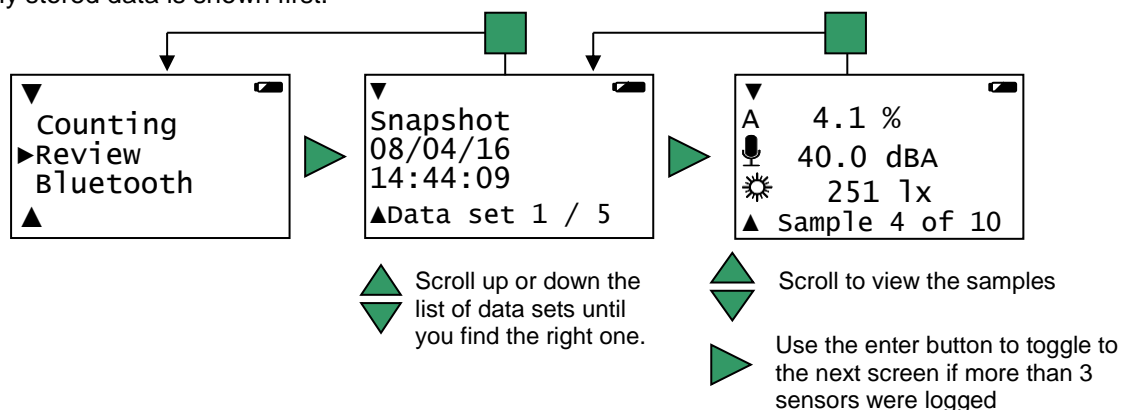
Press ► to cycle through simple mathematical functions on the A, B data (A + B, A – B, B – A, Difference).

If plug-in sensors are connected, Vu+ will automatically count using input from those sensors.



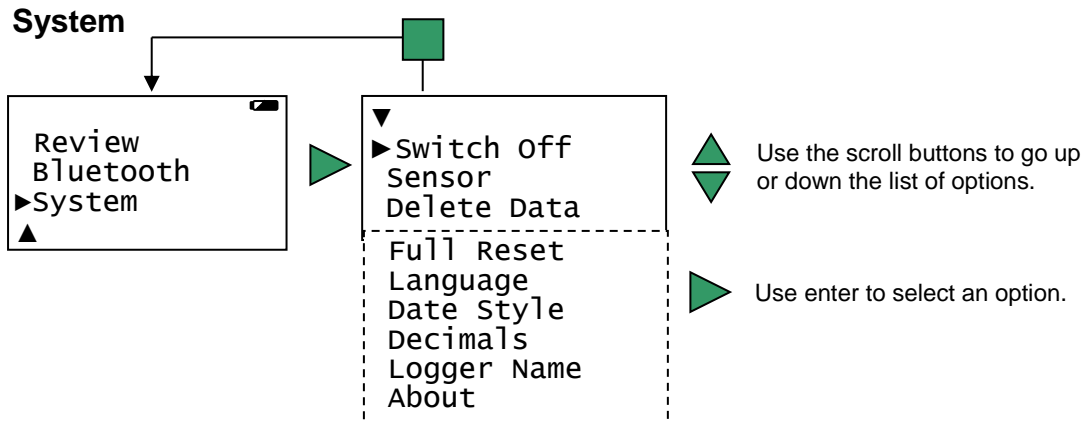
Review

You can use Retrieve to view the readings previously stored in a data set on Vu+'s screen. The most recently stored data is shown first.



Bluetooth

Use to turn Bluetooth On. See [page 12](#) for connecting to via Bluetooth to a computer.



1. While in the main menu use the up or down buttons ▲ ▼ to scroll until the cursor is pointing at **System**. Press the enter button ► to select.
2. Use the up and down buttons ▲ ▼ to scroll the menu until the cursor is pointing to the appropriate system menu option. Press the enter ► button to select.

Switch Off

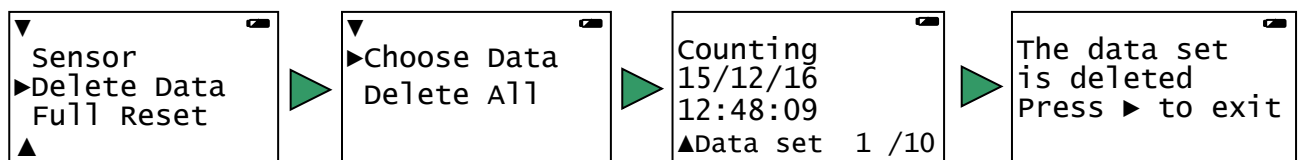
Used to send Vu+ directly into low power (sleep mode), even when it's connected to a USB port.

Note: While operating on battery power Vu+ automatically goes to low power (sleep) after a period of inactivity.

Sensor (changing range or turning on or off)

Use to change the range of a sensor or switch the built-in sensors On or Off the display. This option is also available by pressing ► whilst in Meter mode.

Delete Data



Full Reset

A full reset **erases** all data sets and returns the logger back to the factory default settings. Please note this will also erase all data!

Note: A hard reset (see [page 13](#)) can be tried first if Vu+ simply stops responding, a hard reset won't alter settings or erase data.

Language

Use to alter the selected language.

Date Style

Use this option to alter the format of the date display) i.e. from a European to USA date format (DD-MM-YY to MM-DD-YY). The actual time and date is set automatically by the computers clock.

Decimals

Use to switch decimals off and on, or to change the decimal format from a full stop to a comma.

Logger Name

To change the name the logger displays while Bluetooth connected, select Logger Name. Use **■** to delete any characters from the existing name. Use the scroll buttons **▼▲** to move the cursor and enter **▶** to select the characters for the new name (maximum of 11 characters). When you've finished scroll to **✓** (bottom row right) then enter **▶**.

About

Shows the version number of the Vu+'s firmware, its serial number, its Bluetooth name, and the Bluetooth firmware version number.

Using Vu+ connected via USB to a computer

Step 1:

Install the EasySense software, if it is not already on your computer. For details of how to install and operate this program, please refer to the instructions provided for the EasySense software.

EASYSense Vu+ requires **version 3.8** or above of the EasySense Windows PC software or **version 1.03** of the Mac OSX software.

(The version number can be verified with Windows from About in the Help menu, or with Mac OSX from About EasySense in the EasySense menu).


Step 2:

Connect Vu+ to the computer's USB port using the USB cable supplied, it will automatically be detected as a new device and the drivers will install.

Step 3:

Check that the LCD display on Vu+ is displaying the main menu (Meter, Pictogram, EasyLog, etc.).

Note: In most circumstances Vu+ will **not** communicate with the computer if it is taking samples. If the LCD screen shows samples being taken, press the stop **■** button to finish recording.

Open the EasySense software program. 

Step 4:

The first time the EasySense program is opened a 'Select Program Level' window will automatically open. Select a suitable user's level.

Level 1 is aimed at 'start' level (e.g. up to 9 years old), Level 2 is aimed at 'mid' level (e.g. 9 – 15 years old), Level 3 is aimed at 'exam' level (e.g. 15 years plus).

Step 5:

An Interface option window will open. Leave the Interface selection as **EasySense Range** and the method of connection as **USB Port** and select OK. The program will save your selection so it will be automatically configured when next used.

Step 6:

The Home window will open. Select one of the experiment modes e.g. EasyLog, Pictogram, Meters, Snapshot, Counting or Timing.

Using Vu+ after the initial setup

- Use the USB cable to connect Vu+ to the computer.
- Open the EasySense software program.
- Select one of the experiment modes e.g. EasyLog from the Home screen.

Using Vu+ connected via Bluetooth to a computer



When connecting to a Windows computer

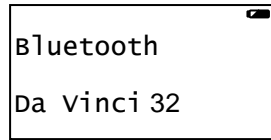
V3.8 or later of the EasySense Windows software **must** be installed on the computer. An operating system of Windows 7 or above is required.

Note: No pairing is required.

- Connect a 2070 Bluetooth Smart USB adaptor to the USB port on the Windows computer. The adaptor is a plug and play device whose drivers should install automatically*.



- On Vu+ scroll to Bluetooth and ► to select.

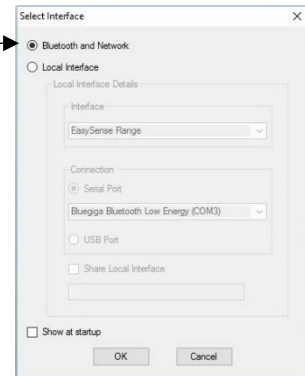


- Open the EasySense software on the PC.



- From **File, Interface** select **Bluetooth and Network**. OK.

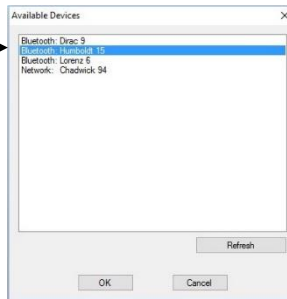
Note: When first selected you may need to change Windows firewall settings to allow network access for this app.



- Select the connection status text top right of the EasySense window.



- Select the Vu+'s name (as displayed on its screen) from the list.



- The connection status will change to show that it is **'Controlling xx or Viewing xx'** the logger.

A link symbol on Vu+'s screen will indicate connection to a computer.



When you've finished select the connection status icon in the EasySense software to disconnect, then stop ■ and enter ► to confirm on Vu+.


* If auto install fails, download and unzip the drivers for the Bluetooth USB adaptor (Product 2070) from the Data Harvest website. Open Device Manager, right click on the entry for the dongle (typically listed under Other devices) and select Update drivers. Select to 'Browse my computer' (install manually), locate and select the BLED112 directory. When installed the adaptor will be listed under the Ports (COM & LPT) section.

When connecting to a iPad or Android device

An iPad will need to support Bluetooth Low Energy (BLE) also known as Smart or 4 (iPad 3 or later or any iPad Mini). V1.10 or later of the EasySense iPad software **must** be installed.

An Android will need to support Bluetooth Low Energy (BLE) / Smart – OS 4.4 or later. V1.05 or later of the EasySense Android software **must** be installed.

Note: No pairing is required.

- Check in **Settings** on the device that Bluetooth is On.
- Select Bluetooth on Vu+.
- Start the EasySense software.
- On an iPad tap on the 'Not Connected' text bottom right of the screen
On the Android select the connect icon , top right of the screen

- Select the Vu+'s name from the list.
- The status will change to show that it is '**Controlling xx** or **Viewing xx**'.

When you've finished select the connection status icon in the EasySense software to disconnect, then stop ■ and enter ► to confirm on Vu+.

Hard Reset

If Vu+ fails to respond to the computer or a button press, carry out a Hard Reset.



1. If necessary attach Vu+ to USB power.
2. Press ■ + ▼ + ▲ at the same time.

If the hard reset has been done correctly, the LCD will display **VU+** before returning to the main menu.

Note: A Hard Reset does **not** erase any stored data sets but if a recording is interrupted by a reset, then the data being captured will not be stored.

Warranty

EASYSense Vu+ is warranted to be free from defects in materials and workmanship for a period of 12 months from the date of purchase provided it has been used in accordance with any instructions, under normal laboratory conditions. This warranty does not apply if Vu+ has been damaged by accident or misuse.

In the event of a fault developing within the 12 month period, **EASYSense Vu+** must be returned to Data Harvest for repair or replacement at no expense to the user other than postal charges.

Note: Data Harvest products are designed for **educational** use and are not intended for use in industrial, medical or commercial applications.



WEEE (**W**aste **E**lectrical and **E**lectronic **E**quipment) Legislation

Data Harvest Group Ltd is fully compliant with WEEE legislation and is pleased to provide a disposal service for any of our products when their life expires. Simply return them to us clearly identified as 'life expired' and we will dispose of them for you.



This device complies with Part 15 (Radio Frequency Devices) of the Federal Communications Commission (**FCC**) rules.

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Data Harvest Group Ltd., 1 Eden Court, Leighton Buzzard, Bedfordshire LU7 4FY
 Tel: +44 (0)1525 373666, Fax: +44 (0)1525 851638
 e-mail: sales@data-harvest.co.uk, support@data-harvest.co.uk
 Website: www.data-harvest.co.uk