



# EASYSENSE V-Log User Guide



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## What's supplied?



## Getting to know your V-Log data logger

### **Charge EASYSense V-Log fully before first use**

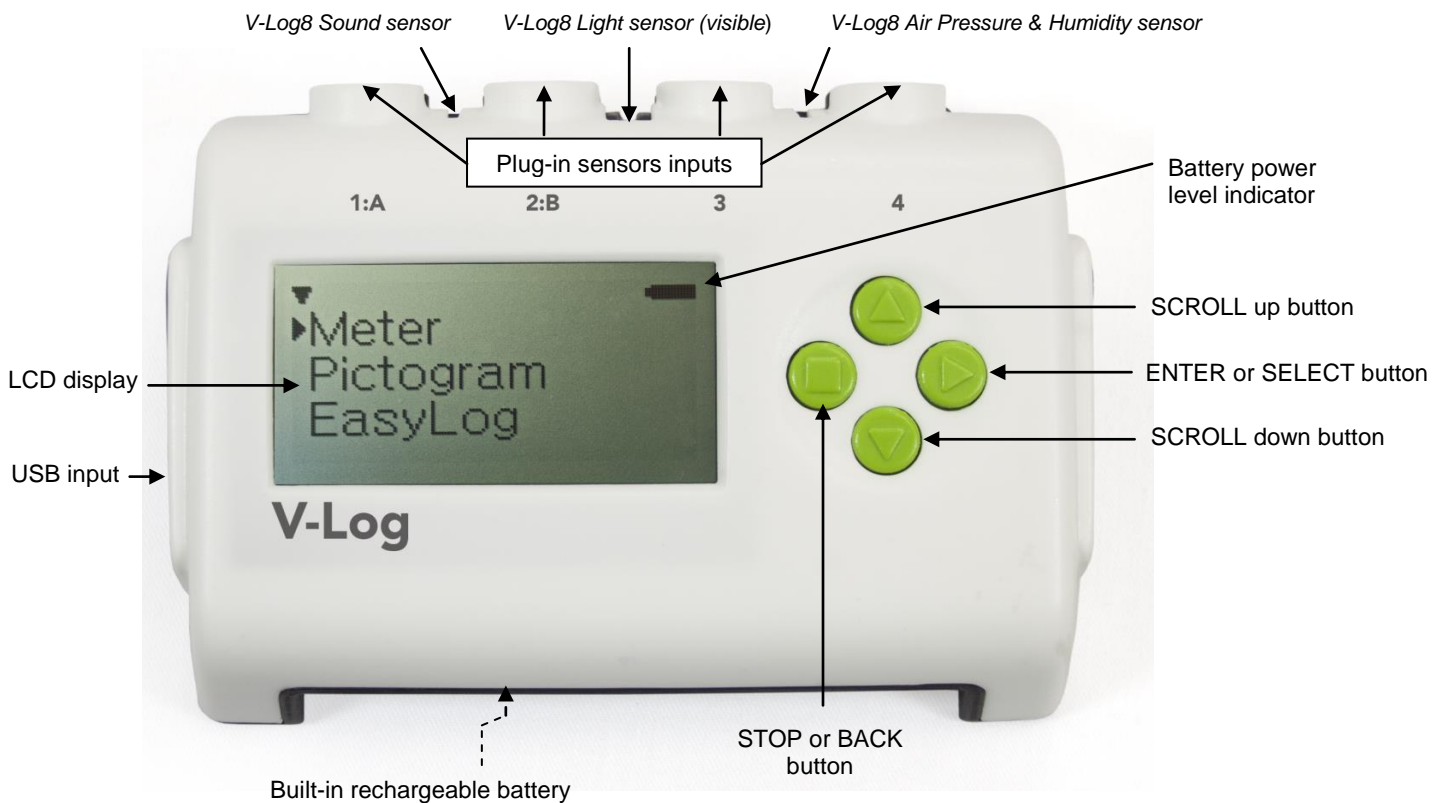
Connect V-Log directly to a USB port on your computer\* (or a powered USB hub) using the USB cable supplied with it. A full charge can take up to 8 hours.

A battery charging symbol will be displayed on V-Log'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.

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

## The V-Log data logger



## V-Log 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.

## Sensors





### The plug-in sensors

Plug the sensors into the sockets on the top of the V-Log logger.

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

### V-Log 8's built-in sensors

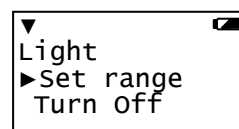
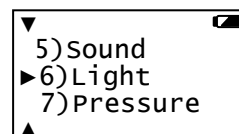
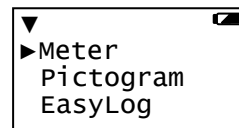
The V-Log 8 has 4 built-in sensors – Sound, Light, Humidity and Air Pressure.

	Built-in Sensors	Ranges
	Sound	40 to 110 dBA ±2000 mV
	Light level	Indoor (Slow) 1 k lx (0 to 1,000 lx) Indoor (Fast) 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)
	Humidity	0 to 100% RH
	Air Pressure	85 to 110 kPa 850 to 1100 mbar 23 to 33 inHg -200 to 1,000 m -500 to 5,000 m -500 to 10,000 m

### Changing a sensors range and turning a sensor on or off

- Use ▲ & ▼ to scroll the list until the pointer is pointing at Meter and select ►.
- Select ► again.
- Use ▲ & ▼ to scroll until the pointer is pointing at the appropriate sensor and select ►.
- Use ▲ & ▼ to scroll until the pointer is pointing at the appropriate option and select ►.

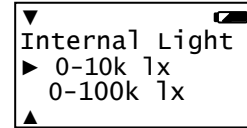
**Note:** If a sensor only has one range then only Turn Off will be available.



**Range**

The pointer will indicate the current range selected.

Use ▲ & ▼ to scroll until the pointer is pointing at the required range. Select ► to choose that range.

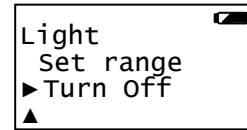


Select ■ to exit the sensor option window.

**Turning a sensor ON or OFF the display**

The built-in sensors can be switched On or Off the display.

With the pointer pointing at Turn Off / On press ► to alter from Off to On or visa versa.



- Select ■ to return to the Meters window.

**Ways to capture data with V-Log**

There are different ways that V-Log can be used to collect data.

1. As a stand-alone instrument: V-Log 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** mode.
  - b. Display, collect and store data using V-Log’s logging menu options e.g. **Pictogram, EasyLog, Snapshot, Timing** and **Counting**.

The data collected is stored in V-Log’s memory to either be reviewed on V-Log’s screen or retrieved to the EasySense software on a computer.

Up to 255 sets of data can be stored in V-Log’s memory.

2. As an interface connected to a computer: V-Log 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 V-Log standalone (without a computer)**

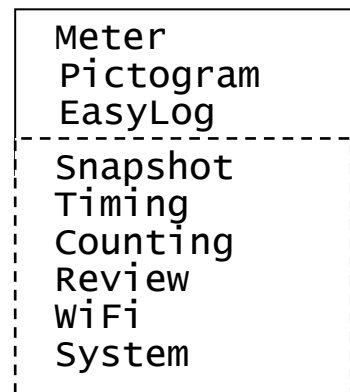
To switch V-Log on, press any button on the panel.

**Notes:**

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

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

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



A menu option is selected by using ▲ & ▼ to move the pointer up or down until it is pointing at the required option then press ► to select.

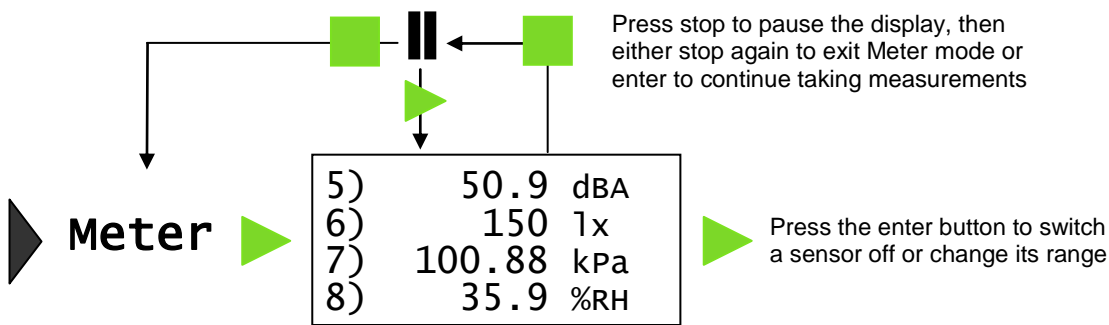
If using plug-in sensors they should be connected before entering a logging mode (except for Meters when they will automatically be detected and then display readings).

### Meter

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

► is used to check or change the sensors range or to switch a sensor off.

■ is used to temporarily halt updates to the sensors readings. Two lines || (bottom right) indicate that the display is paused.



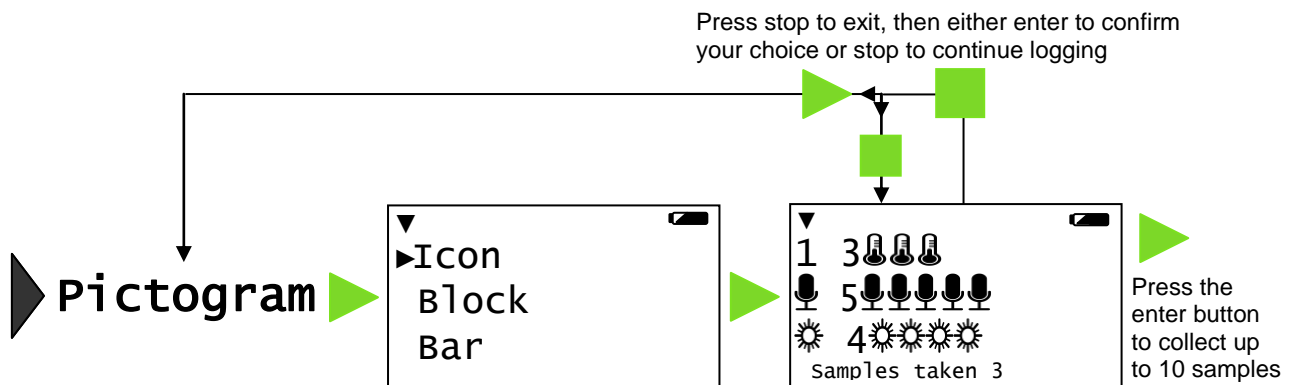
The size of the text in Meter mode can be altered. From the **System** menu select **Meter Text** then either **Single Height** or **Double Height**. With double height selected data from up to 4 sensors is visible on the screen (scroll to see more). If single height is selected then the data from up to 8 sensors is visible.

1)	23.9 °C
2)	20.5 °C
3)	24.1 °C
4)	15.6 °C
5)	50.9 dBA
6)	150 lx
7)	100.88 kPa
8)	35.9 %RH

### Pictogram

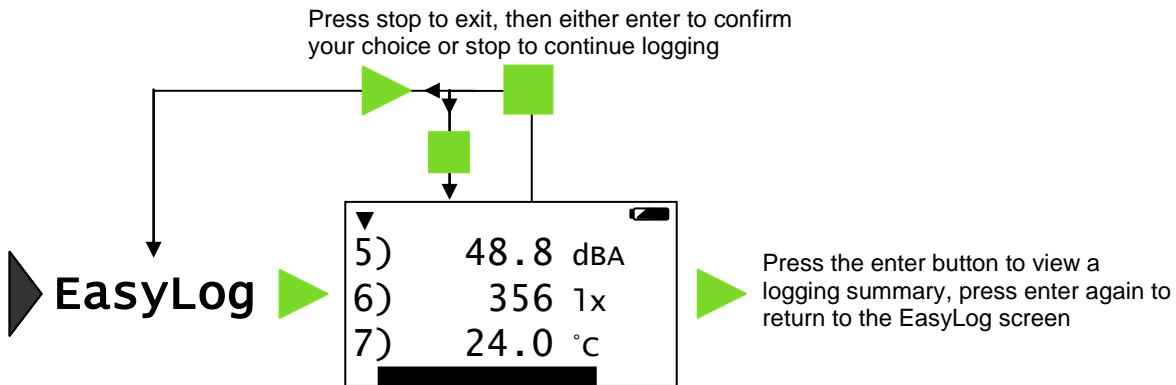
Pictogram uses an image, block or bar to represent the data. Each segment represents a 10<sup>th</sup> of a total range (or span) of the sensor and displays the number proportional to the reading.

Sensor readings are captured every time ► is pressed, rather than at regular time intervals. Up to 10 samples can be stored in each set of data.



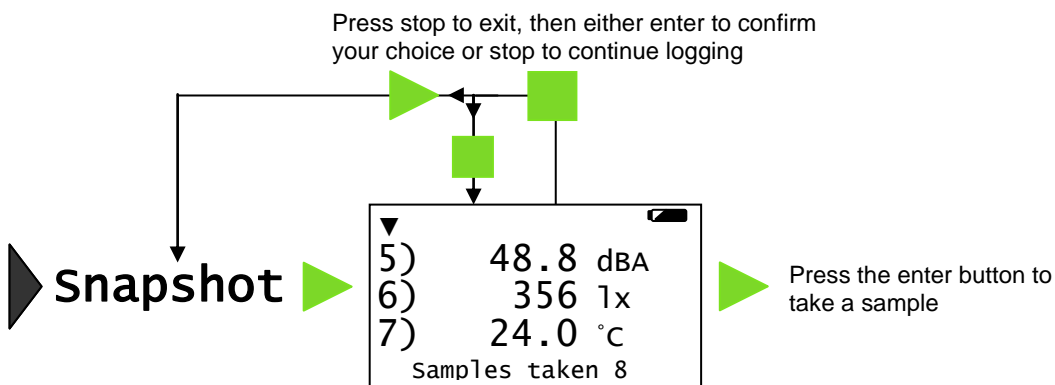
## EasyLog

Select EasyLog to begin logging continuously until stopped. The bottom line of the LCD display is a visual indicator of logging as it takes place, each time the line completes the logged samples are compressed and the sample rate alters.



## Snapshot

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



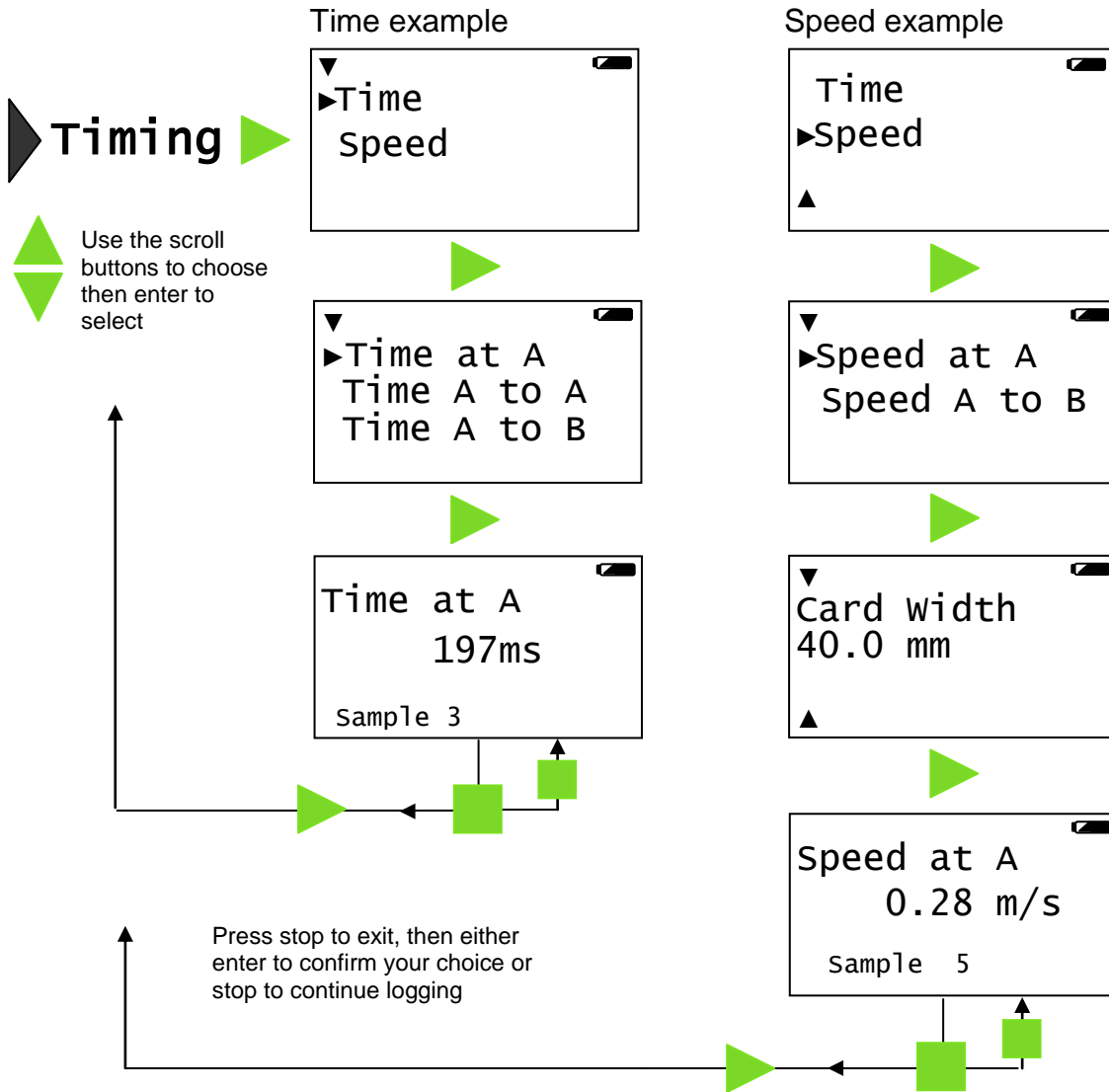
## Timing

Timing is used to set up and store simple time and speed measurements. Connect either one digital switch type sensor to Input 1:A or two to Input 1:A and Input 2:B before selecting Timing. The options available will depend on whether one or two sensors are connected.

For V-Log to calculate speed you will also 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 (0.10 m to 6.00 m in steps of 0.10 m).
- For Speed at A select the width of the single interrupt card that will pass through the Light gate connected to input A (10 mm to 1,000 mm in steps of 10 mm).

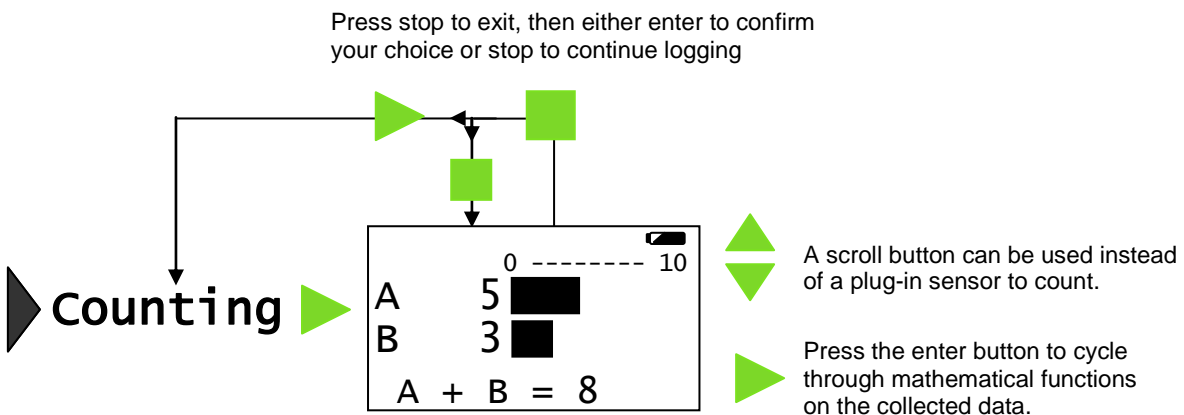
Upon completion of a timing event the elapsed time will be displayed in milliseconds on the LCD display (press to alter the display to show seconds).



## Counting

Counting is used to count events by using digital switch type sensors connected to Input A, both A and B or the ▲▼ buttons on V-Log.

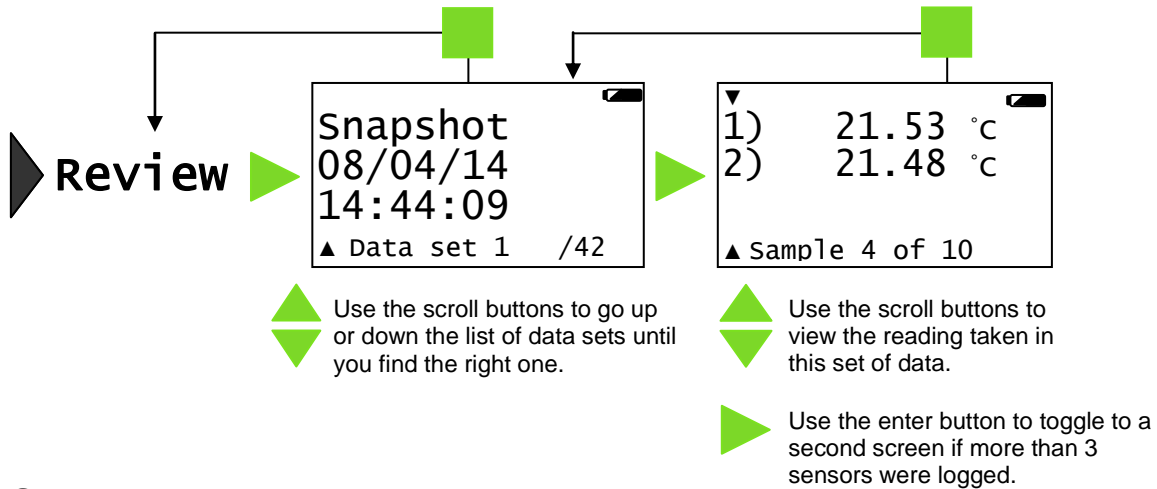
Press ► to cycle through simple mathematical functions on the A and B data (A + B, A - B, B - A, Difference).



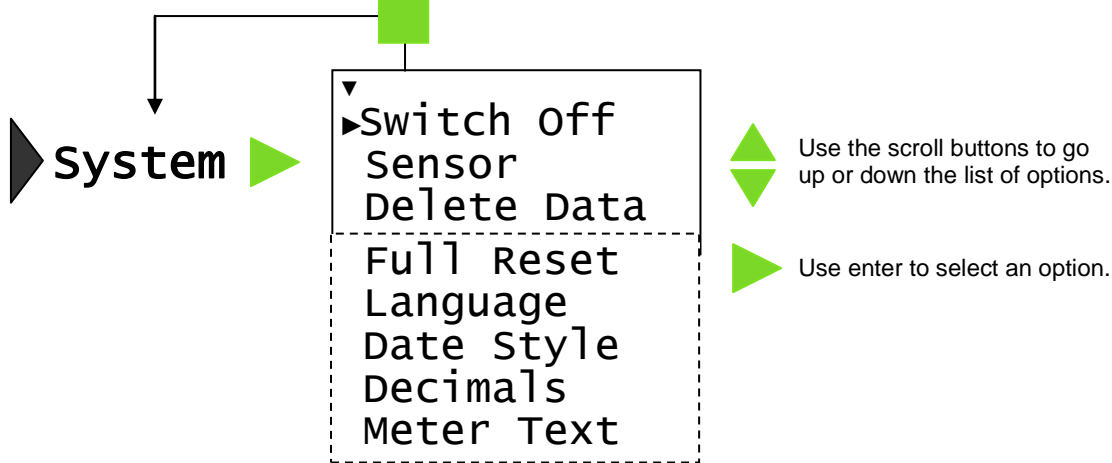


## Review

You can use Review to view the readings stored in a data set. The most recently stored data is shown first.



## System



**Switch Off** - Used to send V-Log directly into low power (sleep mode), even when it's connected to a USB port.

**Note:** V-Log will automatically go to sleep after a period of inactivity.

**Sensor** - 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** – Select whether to 'Delete all' data sets or to choose individual sets (use the scroll buttons to find a data set and then to delete).

**Full Reset** - Use to reset V-Log back to its factory default conditions. Please note this will erase all data! Any WiFi settings will not be altered (see [page 12](#) for resetting WiFi setting).

**Language** - Use to alter the selected language choice.

**Date Style** - Use to alter the format of the date display i.e. from a European to USA date format.

**Note:** The actual time and date is set automatically when the logger is connected to the EasySense software.

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

**Meter Text** – Use to choose whether the text height should be double or single height whilst in Meter mode.

## V-Log in WiFi mode



It is recommended that V-Log is connected to USB power when used in WiFi mode as the power requirements are high, and will drain the battery quickly.

### Connecting V-Log WiFi to a network

V-Log WiFi can operate in two different modes:

#### 1. Connected to its own local network (Access Point)

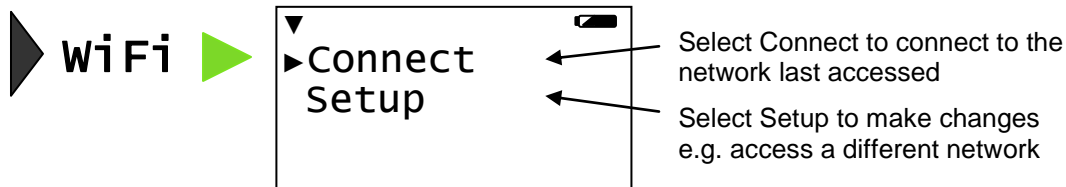
V-Log WiFi is set to Access Point by default. In this mode the iPad connects to the network created by V-Log. This connection is typically used when not in range or able to access the school's network (perhaps on a field trip). While connected to V-Log in Access Point mode, the iPad will NOT be connected to any other school network resources, and therefore unable to access other items such as web pages, email, cloud storage, etc.

It is possible to have multiple V-Log WiFi loggers each creating their own separate network.

#### 2. Connecting to an existing school's network (Infrastructure)

In this mode V-Log WiFi and the iPad connect to the same existing network. It has the advantage of allowing the iPad to remain connected to other resources delivered by the school network, such as web access, email, printing and cloud storage facilities, etc.

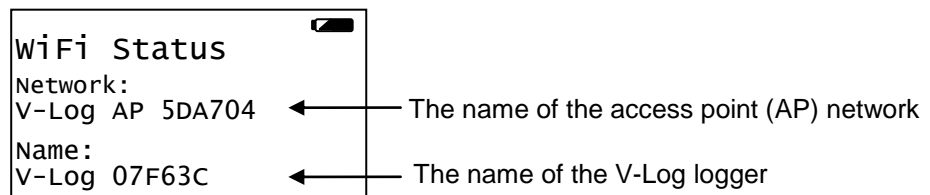
**Note:** V-Log WiFi uses 802.11b. Make sure the WiFi network is compatible with **802.11b** mode.



### V-Log Access Point connection using the default settings

1. Select **WiFi**.

2. Select **Connect**.



3. Connect the iPad to the V-Log Access Point network:

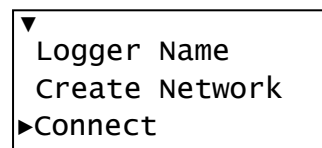
- Tap on the **Settings** icon on the iPad.
- Tap on the **Wi-Fi** link. Ensure the Wi-Fi button is in the ON position.
- Choose the **V-Log AP** network from the list of available networks. Wait until a tick appears next to the network to indicate it has been joined.


4. Start the **EasySense** App on the iPad. Select **Graph** from the home screen.
5. Tap on the status button '**Not Connected**' (bottom right of the screen). Select the V-Log's name from the list.
6. The status button will change to show that it is '**Controlling V-Log xx** or **Viewing V-Log xx**'.

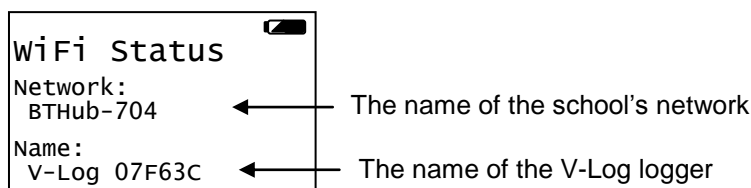
To exit V-Log from WiFi mode select  and then  to confirm (select stop to return to the WiFi status screen).

### Connecting V-Log to a school's network (Infrastructure)



1. Select **WiFi**.
2. Select **Setup**.
3. Enter the password as **DHG2020**. Scroll to ✓ (bottom row right) then enter.  
(See [page 12](#) for help using the on screen keypad).



4. Select **Connect**.
5. Once the scan has finished select the school's network from the list that appears and .
6. If required enter the AP Key (the school network's password, provided by your school network administrator). Scroll to ✓ (bottom row right) then enter. V-Log is now connected to the school's network.



7. Connect the iPad to the school's network. Start the **EasySense** App. Select **Graph** from the home screen.
8. Tap on the status button '**Not Connected**' (bottom right of the screen). Select the V-Log logger's name from the list.

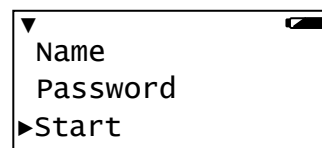
To exit V-Log from WiFi mode select  and then  to confirm.

When you next V-Log in WiFi mode it will be set to connect to the school's network so just select **WiFi** then **Connect**.

It is possible to connect a number of V-Log WiFi loggers to the school network simultaneously, each with its own unique name. From the iPad select the required V-Log by choosing it from the list in the EasySense iPad software.

### To change connection back to an Access Point network


1. Select **WiFi**, then **Setup** and enter the password as **DHG2020**. Scroll to ✓ (bottom row right) then enter.
2. Select **Create Network**.
3. To create and **connect** the Access Point network without making any changes select **Start**.

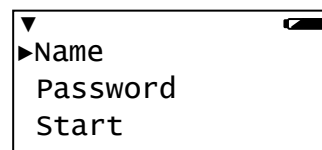


Open the EasySense App, select Graph, tap on the status button and select the V-Log's name from the list.

## To alter the default settings to the Access Point network

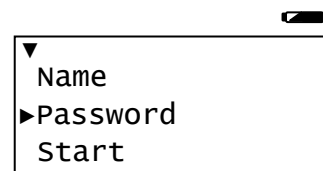
### To change the Access Point name

- Select **WiFi, Setup** and enter the **DHG2020** password.
- Select **Create Network**.
- Select **Name**.
- Use  to delete any characters from the existing name and enter the characters for the new name. Scroll to ✓ (bottom row right) then enter.




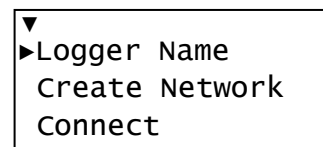
### To encrypt the Access Point network

- Select **WiFi, Setup** and enter the **DHG2020** password.
- Select **Create Network**.
- Select **Password**.
- Enter a suitable password



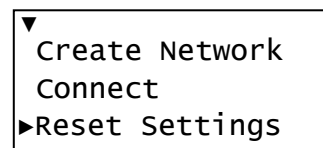
### To change the V-Log logger's name

- Select **WiFi, Setup** and enter the **DHG2020** password.
- Select **Logger Name**.
- Use  to delete any characters from the existing name and enter the characters for the new name. Scroll to ✓ (bottom row right) then enter.

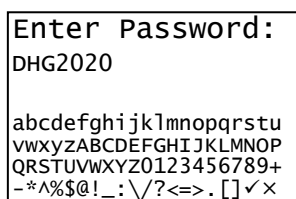








### Reset to the default Access Point Settings

- Select **WiFi, Setup** and enter the **DHG2020** password.
- Select **Reset Settings**. Confirm your choice



## Using the on-screen keypad



- Use  &  buttons to go forward or back through the alphabet / numbers / symbols on the keyboard.
- Use  to select / accept the symbol under the dark cursor.
- Use  to delete a character.
- Move the cursor to the 'tick' ✓ symbol and press  to accept the entered password.
- Move the cursor to the 'cross' × symbol and press  to leave this screen with any characters entered to be rejected and ignored.

## Connecting a group of iPads to a V-Log

It is possible for a group of devices to connect to one V-Log WiFi simultaneously to allow students to work collaboratively on a single experiment.

**Note:** Performance may be impacted if lots of iPads are connected to the same logger.

When connecting to V-Log, the first iPad to connect is given 'control' of the logger and will therefore be able to setup, start and stop the experiment. All subsequent iPads that connect to

the logger are given 'Viewer' status, they will see the setup changes made by the controller, and as data is captured it will appear in real time.

When the recording stops, all iPads will automatically save their own copy of the captured data in the internal iPad memory. One iPad cannot change or delete the data held on another iPad.

To leave a group, simply tap on the status button again to disconnect (bottom right of the iPad screen).

To release or swap control of the V-Log, the controlling iPad simply taps on the Connected button; this will disconnect all iPads. (A new controlling iPad can be chosen by ensuring that it is the first to re-connect.)

## WiFi Technical Details

V-Log WiFi is a wireless enabled data logger. It is classed as a mobile device and has a usable transmission range of 0.2 m to 10 m in open air.

- Compatible with IEEE 802.11b
- Supports WEP, WPA-Personal (TKIP) and WPA2-Personal (AES) Security (802.11i)\*
- Frequency Range: 2412-2462 MHz
- Channels supported: 1 to 11

\*V-Log WiFi will automatically detect and use the required security protocol.

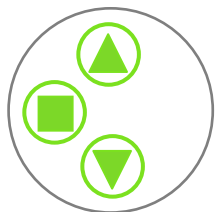
Hereby, Data Harvest Group Ltd., declares that V-Log WiFi is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.




A full copy of the Declaration of Conformity can be obtained by writing to the following address:

Data Harvest Group Ltd.  
1 Eden Court  
Leighton Buzzard  
Bedfordshire  
LU7 4FY  
UK

## Hard Reset

If V-Log fails to respond to the computer or a button press, carry out a hard reset.



1. If necessary attach V-Log to USB power.
2. Press  +  +  at the same time for a second and then release.

If the hard reset has been done correctly, the LCD will display **EASYSense** V-Log and the version number of its operating system before returning to the main menu.

If V-Log still fails to respond, please contact Data Harvest.

**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 V-Log 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 V-Log has been damaged by accident or misuse.

In the event of a fault developing within the 12 month period, EASYSense V-Log 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.

## FCC Details

This device complies with Part 15 of the 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.

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