USB-E
USB Event Logger

files thru the air

- Functions as an event logger, state change logger and event counter
- Logging rate of up to four times per second for events, two times per second for state changes and 100 times per second when counting
- Stores up to 32,510 readings in event mode
- Stores up to 32,510 readings in state change mode
- Stores up to 32,510 timed intervals in event counter mode
- Accepts input voltages of up to 24V
- Volt free contacts option (normally open contact only)
- Rising and falling edge triggering
- LED flash on event / state change
- Connection via two screw terminals
- USB Interface for set-up and data download
- Supplied with replaceable internal lithium battery, Free PC control software and measurement leads

This standalone data logger can record events (detecting an input and storing the time and date), record state changes (similar to an 'event' but also recording when the input reverts back to normal) and count events (count the number of events that happen during a timed interval). Up to 32,510 events or state changes can be recorded and up to 32,510 timed intervals in event counter mode (with 65,536 events in each interval).

Events and state changes can be triggered by either a rising edge (a voltage going from low to high) or falling edge (a voltage going from high to low). It is also possible to use volt free contacts. Instead of measuring an external voltage, the data logger applies a voltage across the screw terminals and detects when the input closes (i.e. a relay or microswitch).

Fast logging rates allow event capturing at speeds of up to two times per second and state changes at speeds of up to four times per second. Event counting can operate at speeds of up to 100 times per second (when the LEDs are turned off). The user can easily set up the logger, and download the stored data by plugging the data logger into a PC's USB port and running the purpose designed software under Windows 2000, XP, Vista, 7 & 8. Data can then be graphed, printed and exported to other applications.

The data logger is supplied complete with software, measurement leads terminated with crocodile clips and a long-life lithium battery which allows logging for up to 1 year. Functionality of the unit is indicated by flashing red and green LEDs, with an option to flash the red LED every time an event occurs.

Specifications	Minimum	Typical	Maximum	Unit
Time between events	500			Milliseconds
Time between state changes	500			Milliseconds
Time between event counts	10*			Milliseconds
Input voltage **	3		28	V d.c.
'Volt free contacts' voltage ***	2.75		3.6	V
'Volt free contacts' current		35		µA
Timing accuracy †			±3	Seconds per 24 hours
Operating temperature range	-35 (-31)		+80 (176)	°C (°F)
1/2AA 3.6V Lithium Battery Life ‡		1		Years

* 10 milliseconds can only be achieved with the LEDs disabled. If the LEDs are enabled, the time between the event counts is reduced to 50 milliseconds
** see 'Voltage input range' section for details
*** Voltage will decrease as battery is discharged
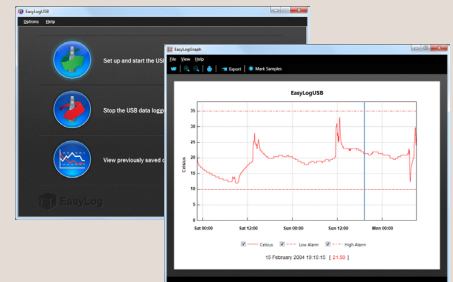† Per day at 20ºC
‡ Assuming 1 event every 5 mins at 20ºC in Voltage input mode

FREE PC CONTROL SOFTWARE POWERED BY EASYLOG

The FilesThruTheAir™ control software is available as a free download from www.filesthrutheair.com. Easy to install and use, the control software is compatible with 32-bit and 64-bit versions of Windows XP, Vista, 7 & 8. The software is used to set up the logger, download, graph and annotate data or export in Excel, PDF and jpeg formats.

The software allows the following parameters to be configured:

• Logger name
• Measurement parameter (°C or °F)
• Logging rate (customisable between 1 second and 12 hours)
• High and low alarms
• Immediate and delayed logging start

Download the latest version of the software free of charge from www.filesthrutheair.com
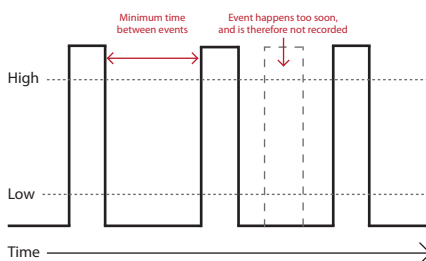
VOLTAGE INPUT RANGE

The logger features a selectable voltage input range, which allows the logger to operate with a wide variety of system. Each input range has a different high and low 'trigger voltage' (i.e the voltage at which the logger considers a signal to be high or low).
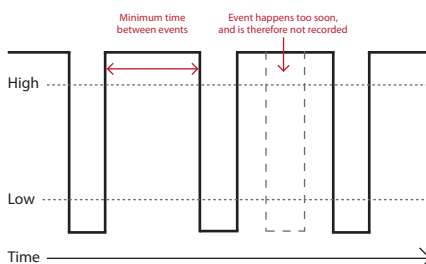
Voltage range	Low trigger voltage	High trigger voltage
0 - 3V	0.8V	2V
0 - 5V	1.3V	3.4V
0 - 12V	3.2V	8V
0 - 24V	6.4V	16V

EDGE TRIGGERING

If the user selects 'rising edge' triggering, then an event is recorded at the point a signal goes from low to high. This is the default setting.
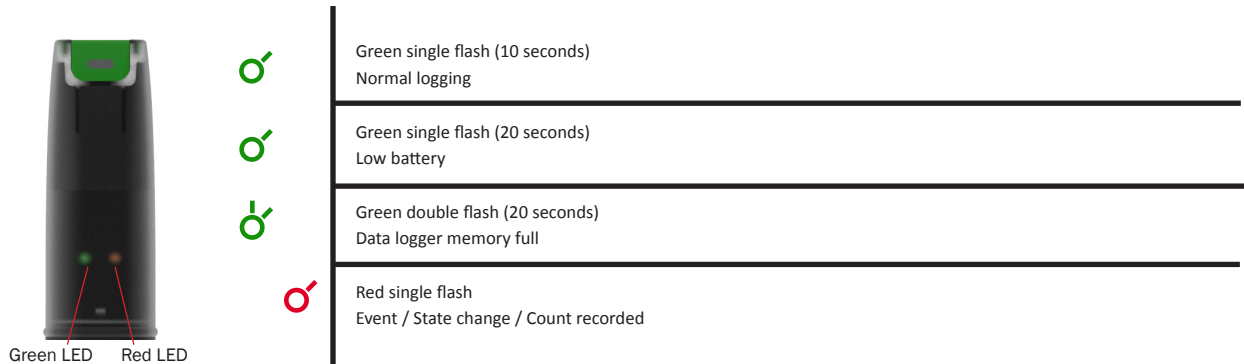

If the user selects 'falling edge' triggering, then an event is recorded at the point a signal goes from high to low.
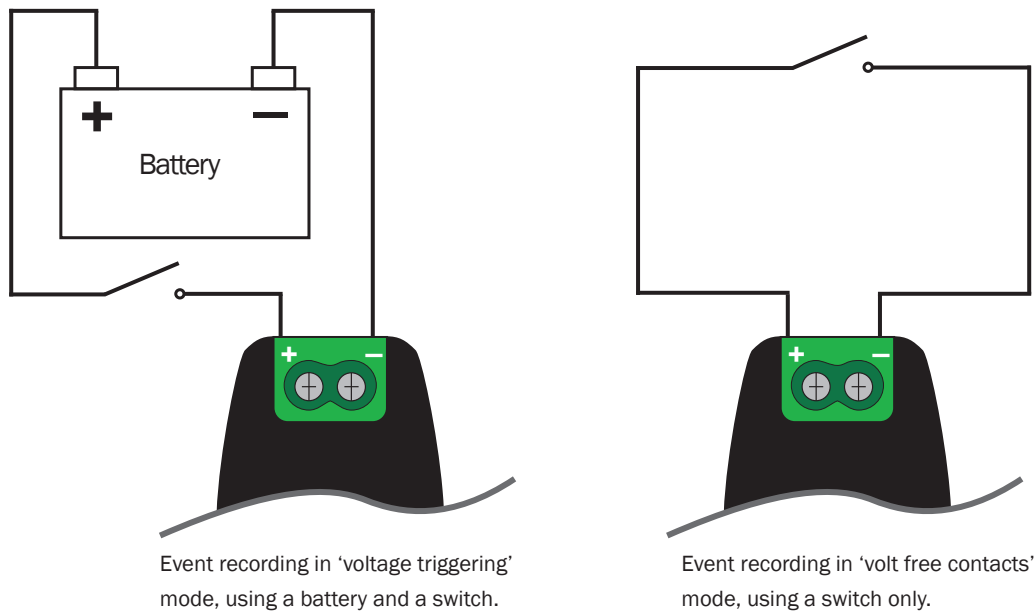
LED FLASHING MODES

USB-E features a red and a green LED to indicate the status of the data logger.

Green single flash (10 seconds)	Normal logging
Green single flash (20 seconds)	Low battery
Green double flash (20 seconds)	Data logger memory full
Red single flash	Event / State change / Count recorded

Green LED   Red LED

CONNECTION AND APPLICATIONS

Event recording in 'voltage triggering' mode, using a battery and a switch.

Event recording in 'volt free contacts' mode, using a switch only.

BATTERY REPLACEMENT

We recommend that you replace the battery every 12 months, or prior to logging critical data.

The USB-E does not lose its stored readings when the battery is discharged or when the battery is replaced; however, the data logging process will be stopped and cannot be re-started until the battery has been replaced and the logged data has been downloaded to PC.

Only use 3.6V 1/2AA lithum batteries. Check with your supplier that the battery you are ordering is 'press fit' and is not fitted with solder tags. Before replacing the battery, remove the USB-E from the PC.

Note:
Leaving the USB-E plugged into the USB port for longer than necessary will cause some of the battery capacity to be lost.

WARNING

Handle lithium batteries carefully, observe warnings on battery casing. Dispose of in accordance with local regulations.