# Vu push button reaction switches (pair) Product No. 2331PK

Push button reaction switches are digital switch-type sensors that have two states, ON and OFF.

These are push-to-make switches fitted with a red LED to give a visual indication of the switch's state. The switch is normally open (OFF). When the red button on the top of the housing is pressed the switch is closed (ON) and the red LED on the front will light.

The switches are supplied as a pack of 2 and can be used singly or in pairs to provide timing and event monitoring. They connect to Vu via a jack to mini DIN sensor lead (part number 2398) suitable for use with the Vu data logger.

## Connecting

If the switches are used for **Timing** operations and only one is used, it must be connected to input **A**. If two are used they should be connected to input **A** and **B**.

- Connect the jack plug end of the sensor cable to the input socket on Vu.
- Connect the other end of the sensor cable to the shaped socket on the Switch.
- Vu will detect that the Switch is connected and will either show as On/Off or as a percentage value, depending on the mode used.

## Primary investigations

- Reaction time game
- Counting objects (traffic, people, animals, etc.)
- Measure speed (cars, people, etc.)
- Record the differences in time taken to walk, run or hop over the same distance.
- Record the time taken by a vehicle to pass from one point to another.
- Introducing the idea of the computer acting as a stopwatch e.g. starting and stopping timing.
- Introducing the fact that speed can be calculated directly if the distance between the start and finish line is used.

E.g. How many? Hops and Jumps, Speedy cars?

### Example of using a switch to time events

**Time from A to A** (using the Push-button switch as a stopwatch). Connect a single switch to input A. Timing will start when the push-button switch connected to input A is pressed (ON) and will continue until the switch is pressed again (ON).

**Time from A to B**. Connect the two switches to input A and B. Timing will start when the push-button switch connected to input A is pressed (ON) and stop when the switch connected to input B is pressed (ON).

**Speed/Velocity from A to B** uses the same method as Time from A to B together with the distance measurement (in m) between the connected switches to calculate the velocity.

$$\text{Velocity} = \frac{\text{Distance from A to B}}{\text{Time}}$$

## Advanced user information

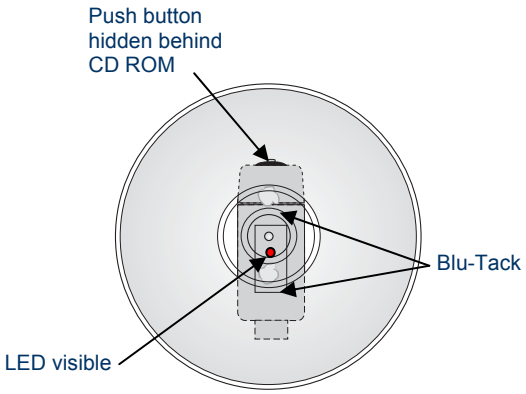
Can also be used:

- In pairs for speed of reaction investigations (connected to the inputs labelled A and B).
- To mark an event whilst logging e.g. the point at which a chemical was added, the time an indicator changed colour (connected to either input).
- To trigger the start of a recording.

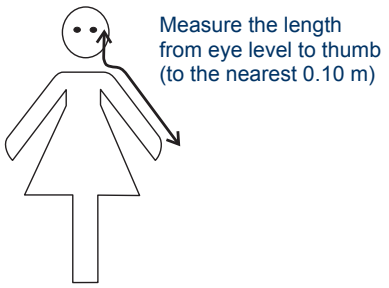
### Recording reaction time on Vu

1. Connect a Push-button Reaction switch to input A and another to input B on Vu. Give the switch that is connected to input A to the tester and the switch connected to input B to the test subject. The push-button part of the switch should be hidden from the view of the test subject so they will not see any movement of the tester's hand or fingers but will still see the LED.

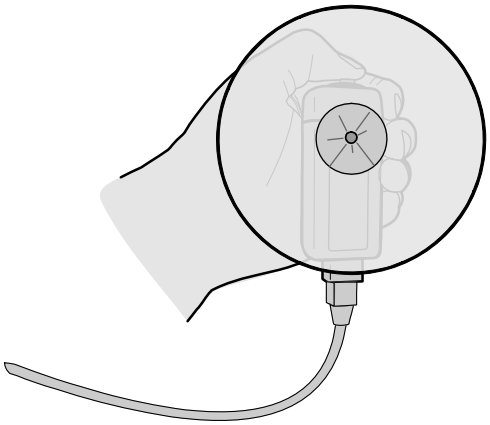
   ***Note**: The switch could be hidden behind a CD ROM with the LED made visible through the centre hole.*

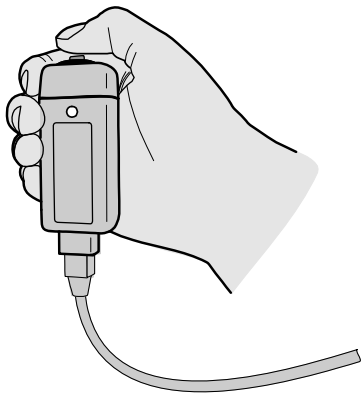



2. To record the speed of reaction you will need to enter the distance (in m) between the stimulus (the test subject seeing the LED light up) and the response (the test subject pressing the switch) i.e. use a fabric tape to measure the length from the subjects eye level, down the neck, along the outstretched arm to the thumb tip.




3. On Vu select **Timing ► Speed ► Speed A – B ►**. Scroll to select the closest distance measurement (eye level to thumb) ►.





4. The tester should press their switch, which will make the LED light.

   The test subject must respond by pressing their switch as soon as they see the LED light.

5. Repeat for at least 10 measurements and stop logging ■. Press ► to confirm.

6. Use **Review** to examine the collected data and work out an average.

### Using a switch to mark an event

A digital switch-type sensor can be used to mark a point or the length of an event whilst data is being logged. If a switch (which can be connected to any of the inputs on an EASYSENSE unit) is pressed during logging it will alter its value from under 6% when off to over 90% when on, to create a spike on the graph. If the switch is left on it will continue to mark the graph until it is switched off.

## Warranty

All Data Harvest Sensors are warranted to be free from defects in materials and workmanship for a period of 12 months from the date of purchase provided they have been used in accordance with any instructions, under normal laboratory conditions. This warranty does not apply if the Sensor has been damaged by accident or misuse.

In the event of a fault developing within the 12 month period, the Sensor 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.