ScienceCube

[KDS-1009]

Voltage Probe

User's Manual

Beyond **S**cience and **E**ducation

Short Description

The Voltage Probe can be used for a wide variety of experiments both indoor and outdoor.

The Voltage Probe is designed for exploring the basic principles of electricity. Use this probe to measure voltage in low voltage AC and DC circuits. With a range ±12.0 V, this system is ideal for use in "battery and bulb" circuits.

Use it with the Current Probe (KDS-1010) to explore Ohm's law, phase relationships in reactive components and much more. This differs from the Voltage Probe that comes with your interface in that neither clip is connected to ground. Use multiple Probes to explore series and parallel circuits.

Using the Voltage Probe with a computer

The Voltage Probe can be used with window and ScienceCube® Interface Lite II, ScienceCube® Interface Pro or Data Logger Max Series that Korea Digital provides.

① Connect the Voltage Probe with an interface, datalogger and a computer.
② Start Excel program, ScienceCube Studio II, Simple logger or SC logger.
③ The PC program will identify Probe automatically, then you are ready for collecting data.

Suggested Experiments

■ To demonstrate of *Ohm's Law*
■ Measure voltage by connect to resistance or both terminals of battery
■ Measure the voltage of electrical devices
(LED, Resistance, Diode, Capacitor, etc)

- Measure the voltage of connection resistance in series and connection resistance in parallel.

  (Compare series connection resistance & parallel connection resistance)

- Measure the voltage of connection battery in series and connection batteries in parallel.

  (Compare connection resistance in series & parallel connection resistance in parallel)

Setting the zero point

Even when voltage is open, or disconnected from a circuit, it carries a value above 0, generated by the surrounding noise. Be sure to set zero point before executing an experiment.

[Setting the zero point]

① Execute [zero point settings] in excel for specific value of voltage that is to be the canon zero point.

② Go on to the experiment after setting zero point. The original value will e restored and the set value will not be in effect when you select [original] from [zero point setting] or when you disconnect the Probe

③ When you've gone through this process, the setting will be saved in the interface. When the interface is disconnected from the computer or when the probe is disconnected, the initial setting will be restored

Caution

- *NEVER* use high voltage or household A*C*

Technical Data

Range	-12.0 V ~ +12.0 V
Resolution	3.1 mV (12bit AD)
Input Impedance	10 MΩ