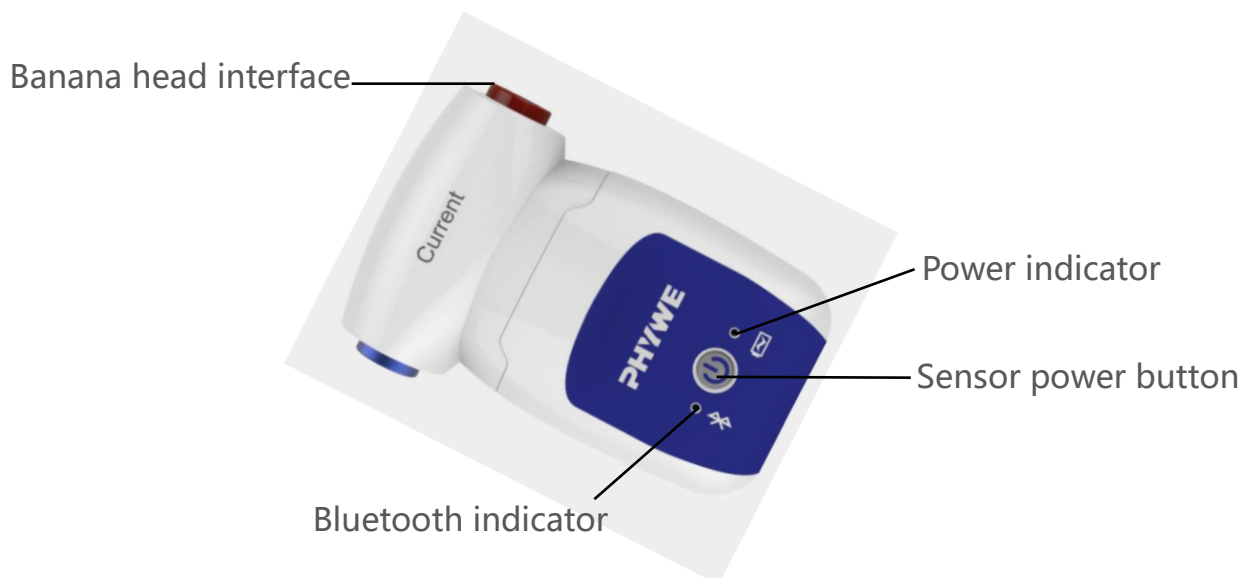


BLE Current Sensor

No.: W0004



Sensor Introduction

❖ Feature

Using BLE bluetooth connection technology and USB communication technology, fast turn on & off, instant connection, create wireless experiment environment. Data-transmitting distance is long, safe and stable, and reliable transmission is achieved in 30m open and unobstructed environment.

Built-in replaceable battery, independent power supply, low energy, long endurance. Multiple sensors are supported simultaneously during the experiment.

❖ Function

Suitable for current measurement in middle school chemistry, biology, physics experiments.

Sensor Specification

BLE Current Sensor	
Range	-1A~1A
Resolution	12bit
Accuracy	±1%F.S.
Sampling Rate	1000 times/s (MAX)
Communication Distance	≥30m (open and unobstructed)
Battery Model and Capacity	502030 3.7V 250mAh lithium battery
Range	Type-C interface
USB Version	USB 2.0 at full speed

⚠ Note: Do not exceed sensor range when using

Hardware Configuration

- Type-C USB cable
- Red, black alligator clip wires

Button Light Information

The power button operation and equipment light display information as following:

Operation	Function description
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Long press 3 s	Turn on/off
Short press	Prevent accidental touch is meaningless
Short press twice	Stop offline experiment and return to the broadcast state
Short press three times	Start the real-time offline experiment 1

Bluetooth Indicator	Device Status
Red flashes 2s/ time	Bluetooth waiting for connection
Red flashes 4s/ time	Offline experiment is in progress
Green flashes 2s/ time	Connection Status
Green flashes 4s/ time	Online experiment is in progress
Red, green light flash three times alternately	Scan for devices
Red, green light flash three times at the same time	Offline experiment completed
Red flashes 6 times	False alarm
Red flashes 10s/ time	Wait to start collecting offline

⚠ Prompt: Reasons for issuing false alarms include: a、There is insufficient space for off-line experiment. b、There is insufficient space for offline experiment to begin. c、Other offline experiments are being conducted while offline.

Power Indicator	Device Status
Red flashes 2s/ time	Low battery warning (not automatically turn off the power)
Red lighting	Charging
Green lighting	Charging completed

Equipment use

- 1、 Turn on the sensor power, open the computer software, click on the software Bluetooth scanning function , select the corresponding sensor to connect;
- 2、 After connecting the red and black alligator clips to the sensor, parallel the sensors to the circuit;
- 3、 Click  to start the collection and record the data;
- 4、 Click  to stop collection.

Calibration

- The sensor needs to be calibrated before use. Short the red and black alligator clips and click the calibration button on the software to calibrate the sensor.

Data Collection

- ❖ Online collection
 - The regular way is continuous online collection. After the device is connected with the terminal, data can be collected online.
 - The device priority is continuous collection. Offline acquisition is not started as long as online acquisition is in progress.

❖ Offline collection

It is divided into two modes: instant offline collection and timing offline collection.

- Instant offline collection: Press the button shortly three times to start. When the offline collection is not completed, timing offline collection will not be started; the instant offline collection is already completed and the timing offline collection has not started yet, the scheduled time is started and the timing offline collection is started.
- Timing offline collection: The timing time of the software is set up, and the instant offline collection can not be turned on until the finishing of timing offline collection.

Typical Experiment

- Series and parallel connection of resistor
- VA characteristics of small bulb
- Measure the EMF and internal resistance of battery
- Ohm' s law

⚠ Note:

- Current sensor to be used in series in the circuit.
- Need to be calibrated before using.
- Current sensor can withstand current is not more than 3A.

Risk Warning

- It can seriously reduce the service life of the equipment when using in damp, corrosive gas, high temperature and other harsh environment.
- Be sure to remove the charger within 4 hours after full charge, so as not to affect the battery life.

- When the equipment power is low, please charge in time to avoid long time in low battery status.
- In case of any failure, please contact our company immediately. Do not disassemble the battery, disassemble the battery and use the sharp tool to penetrate the battery.
- When the temperature rise or other suspicious phenomenon is found in the use of electrical equipment, the power outage will be stopped immediately.

FCC Statement

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.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception,

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

FCC RF Radiation Exposure Statement

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction