2022-2166
2025-03-31

Intelligent Sink Trap

COMMERCIAL

Copper ion generator to reduce viruses in standing water inside the sink trap
Approximate life span: 8500 cycles.
Maximum output of 60 mg copper per day

KEEP OUT OF REACH OF CHILDREN
READ THE LABEL AND OPERATING MANUAL BEFORE USING

REGISTRATION NO. 35473 PEST CONTROL PRODUCTS ACT

Circuit Edge Inc.
174 West Beaver Creek Rd.,
Richmond Hill, ON, L4B 1B4,
Phone: (416)-996-1747

Contains Transmitter Module
IC:6514A-RN4020
15VDC

PRECAUTIONS.
KEEP OUT OF REACH OF CHILDREN. DO NOT separate the device from plumbing during normal operations.

DIRECTIONS FOR USE: Refer to operating manual for device settings. Use device admin app to check for end of life and receive device end of life or other malfunction warnings.

NOTICE TO USER: This control product is to be used only in accordance with the directions on this label. It is an offense under the *Pest Control Products Act* to use a control product under unsafe conditions.

Sticker on device

Intelligent Sink Trap
REG. NO. 35473 P.C.P. ACT
READ LABEL AND OPERATING MANUAL BEFORE USING
KEEP OUT OF REACH OF CHILDREN

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PRECAUTIONS:
DO NOT separate the device from plumbing during normal operations

Intelligent Sink Trap

REG NO. 35473 P.C.P. ACT

OPERATING MANUAL

READ THE LABEL AND OPERATING MANUAL BEFORE USING
SAVE THESE INSTRUCTIONS
KEEP OUT OF THE REACH OF CHILDREN

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1. SYSTEM OVERVIEW

The Intelligent Sink Trap (IST) is a stand-alone device which, by controlled generation of copper ions, reduces viruses inside the sink trap. Here are some of the features of this device:

- It easily replaces the existing traps with no extra effort or knowhow;
- Operates with either a AC adapter or battery;
- Can be controlled by an IOS or Android application via Bluetooth Low Energy technology; and
- Can be linked to a hospital's device monitoring system.

2. DEVICE OPERATION

The Intelligent Sink Trap begins operating as soon as it is powered "ON" via the included AC adapter or use of the battery pack (shipped with the device).

After downloading the control application (search for the application "Intelligent Sink Trap" via the "Apple" or "Play" store) for the device on an IOS or Android device.

Once the device is powered on it operates in its default mode and can be visible by running the IST Application (when Bluetooth feature is "ON" via the smart phone)

Note: Each trap has a default "Name" and "Password" which can be changed by the user.

Settings and status that can be controlled/viewed via the application are:

- Health: Functional Status of the Trap
- Cycle: Number of Operation Cycles to date
- Battery or AC Status
- Voltage Level

3. GETTING STARTED

3.1. Package

Each shipped Intelligent Sink Trap unit contains the following:

- 1 x IST device
- 1 x AC adapter
- 1 x four (4) dry Cell Lithium Battery pack

To start the operation, the trap should be installed and powered either by AC or Battery pack.

The AC adapter can be plugged to any standard main power source (80-240 Vac). The location of the DC input on the IST unit is shown in figure 1 below.

Figure 1: DC Input

Battery pack can be installed easily as shown in figure 2 below by removing the three screws and plugging in the pack.

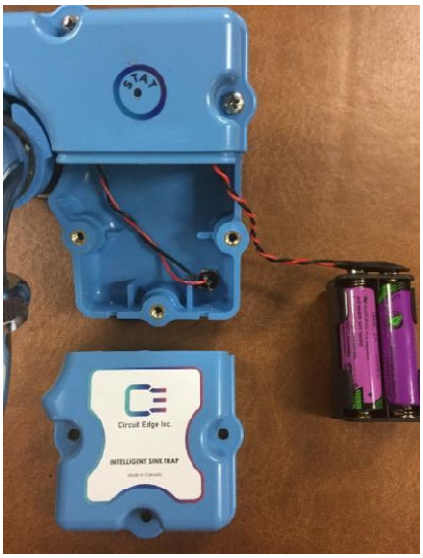
Figure 2: Battery Installment

Please note the following caution.

CAUTION

Before closing the battery lid, ensure no wires are pinched by the lid. After closing the lid, ensure the screws are tightened. **Do not** over tighten the screws.

3.2. Logging On

When the application is successfully installed, the user can open and begin searching for nearby devices. Upon first use, each IST is defaulted to the following name: “IST-xxxx”, where xxxx is the serial number of the device. This allows the user to know which device to begin pairing the application to. The pairing process is automatic and does not require any user intervention.

As an example, by opening the app, the user can access the IST device in its range, as shown in figure 3, B1F03R10W9S2 is the name of IST which means located at Building#1, Floor #3, Room#10, Washroom#9, Sink#2.

By selecting the desired device, the application will begin connecting to the IST as shown in figure 4 below.

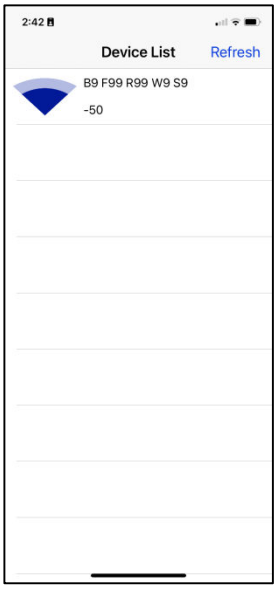

Figure 3: IST Selection

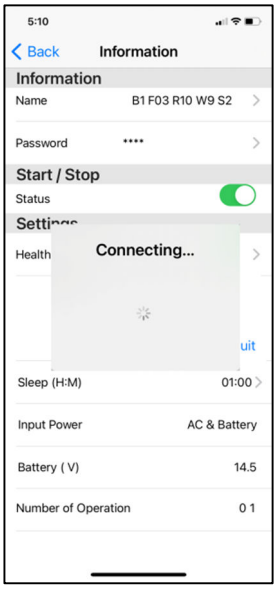

Figure 4: IST Connection

If the connection is not established, the application will request the user to “Retry” or “Cancel”.

After pairing has been completed successfully, the main application page will display various information to control and monitor the operation of the device – see figure 5 below.

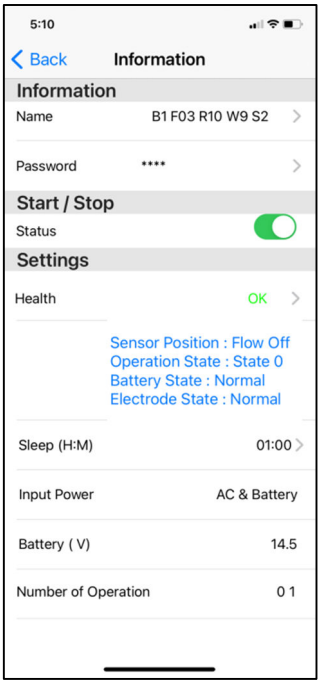

Figure 5: Main Application Page

● 4. USING THE APPLICATION

The application consists of three (3) subsections:

1. **Information**
2. **Start/Stop**
3. **Setting**

○ 4.1. Information

In this subsection the serial number and the name of the device as well as the password bar can be seen. The user cannot change the serial number but can change the "Name" of the sink trap and "Password". The length of the "Name" should be 8 characters long and "Password" should be 4 characters long (there are no restrictions on what type of characters can be used for the name or password).

During the initial device power up, the new password page is displayed in which default password "1234" is to be inserted, then the user can change the password to a desired one as per figure 6 below.

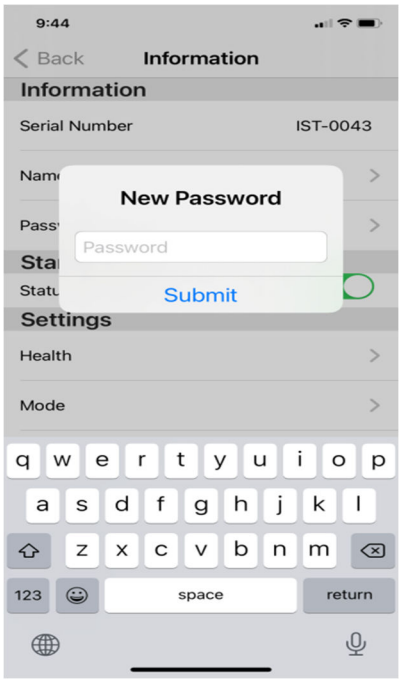

Figure 6: Password Change Set Up

4.1.1. “Name” Change:

To change the “Name” of the sink trap, press the “Name” option that will guide the user to another page. After setting a new “Name” based on the on-screen instruction, press the “Back” tab on the top left corner of the page in order to allow the change to be applied (see figure 7 below). The new name will then be shown on the main page and on the Bluetooth name as well.

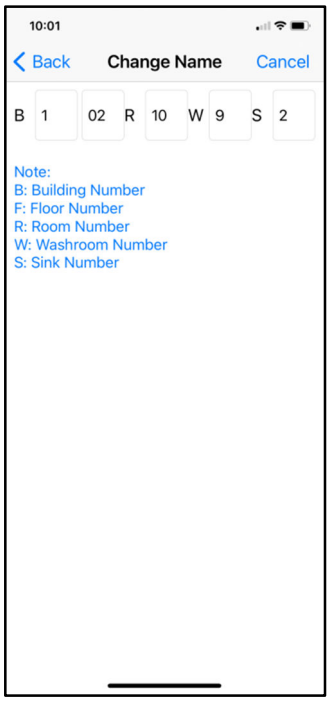

Figure 7: IST Name Change

4.1.2. “Password” Change:

To change the “Password” of the sink trap, press the “Password” option that will guide the user to another page. After setting a new “Password” based on the on-screen instruction, press the “Back” tab on the top left corner of the page in order to allow the change to be applied (see figure 8 below). The new password will then be shown on the main page.

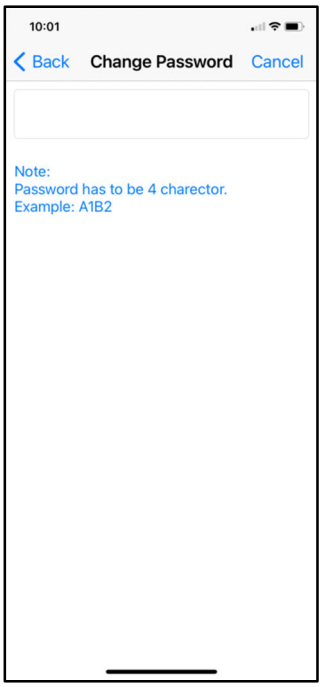

Figure 8: IST Password Change

○ 4.2. Start/Stop

The **Start/Stop** menu will show the status of the unit. In "**Stop**" mode, the unit stops working and by pressing the button, changing the status to "**Start**" mode, the treatment cycle operation will begin based on the user defined "Settings". Note that the color of the button will be changed to green as can be seen in figure 9 and 10 below.

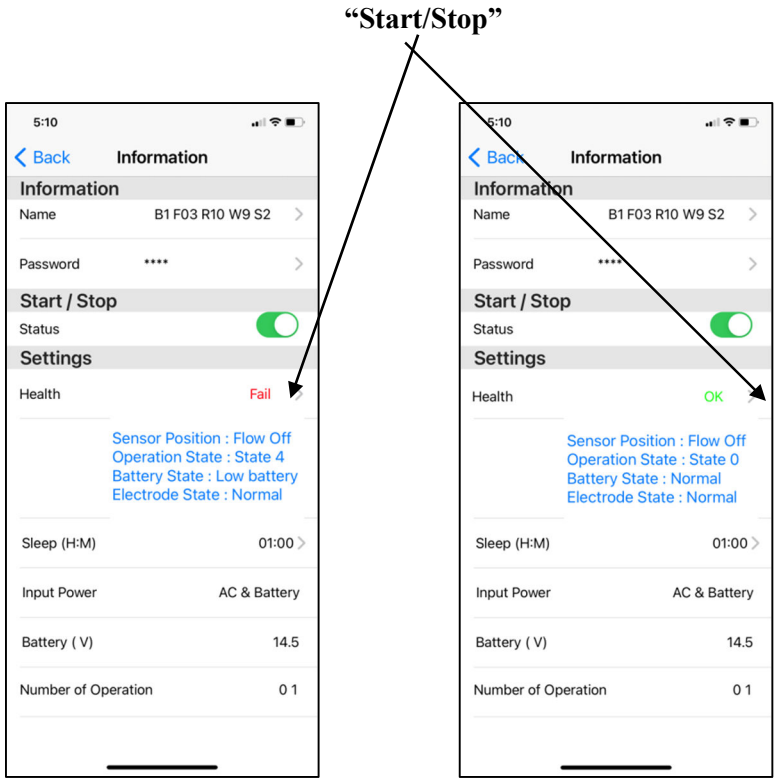

Figure 9: IST Stop Mode

Figure 10: IST Start Mode

○ 4.3. Settings

In the "Setting" section, all necessary information/controls of the device status are accessible.

4.3.1. "Health" state

This information bar is either indicated as "OK" or "Fail" (as can be seen in figure 9 and 10 above). Further details about the health of the device can be viewed under the tab.

If the health is indicated as "OK" it will be displayed as shown in Fig.10 above.

If the health status is indicated as "Fail" it will be displayed as per figure 9, 11, or 12 below. In addition, an alarm may go off (if the dry contact becomes short).

Errors could be "Electrode Short Circuit", "Electrode Open Circuit" or "Low Battery"

"**Open Circuit**" or "**Short Circuit**" indicate failure in Electrodes (Body and Center piece).

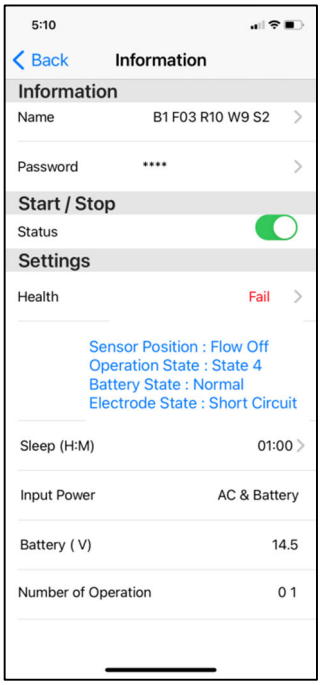

Figure 11: "Fail" Health

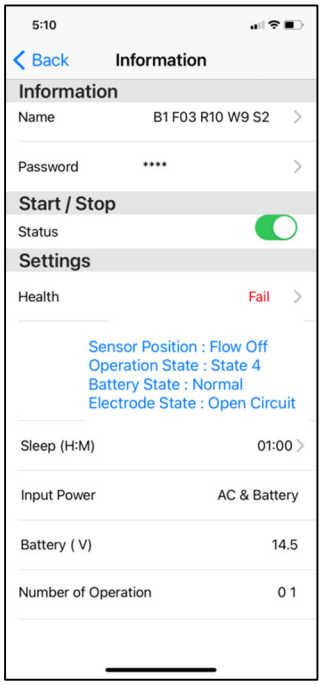

Figure 12: "Fail" Health

4.3.2. "Sleep" state

In system operation, the IST senses the flow of water and the treatment cycle stops if the water is flowing. After the flow stops, the treatment cycle starts after "Sleep" setting time and running for 4 cycles. Each cycle takes 10 minutes and pause for 30 minutes between each cycle.
If the water is not flowing for 24 hours, the status is reset, and it runs another 4 cycles of treatment.

If the water flow starts in between the sequence, then the process will start from the beginning.

4.3.3. Voltage and Number of Operation

Three parameters (input power, battery (V) and number of operation) provide information regarding the source of power (AC, battery, AC + battery) as well as the battery voltage. The number of operations show how many treatment cycles have been performed (this number cannot be changed). See figures 13, 14 or 15 below.

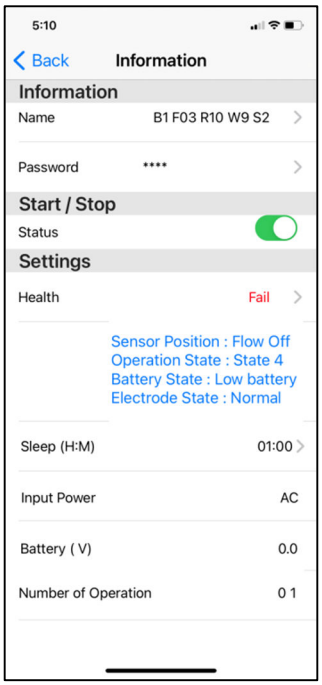

Figure 13: Input Power

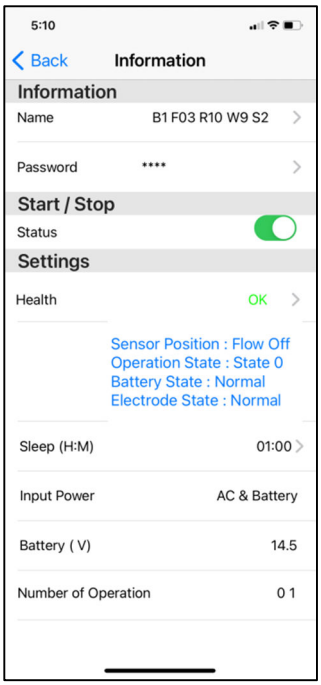

Figure 14: Battery(V)

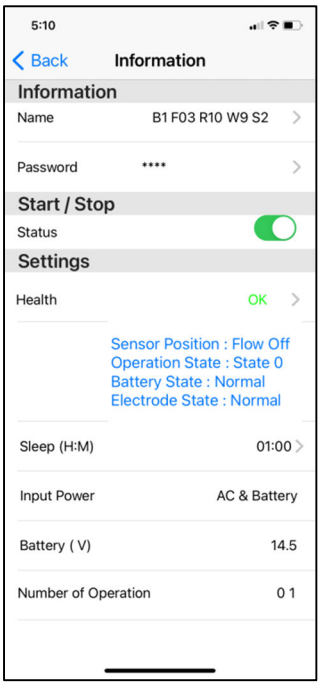

Figure 15: Number of Operation

- # 5. INSTALLATION

5.1. Installation:

The device includes the p-trap and wall pipes.

Installation requires 8 cm of clearing in wall pipe. The standard wall pipe included in the device is 20 cm, that can be shortened by up to 12cm, i.e. 8cm of clearing where the device control is installed.

- # 6. TECHNICAL INFORMATION

6.1. Electrical

The device can be powered either by using the AC adapter or the Primary Lithium battery or both at the same time.

- AC Adapter: Universal Class II cUL, AC/DC Adapter 15VDC, 100mA or more.
- Battery: Primary Lithium Battery, TL-5903, 3.6V /2.4AH

6.2. Dimensions

Electronic part can be added to various standard sink traps:

(LxWxD) = (12.7 cm x 12.7 cm x 4.5 cm) (5” x 5” x 1 ¾”)

6.3. Weight

Electronic Part: 200g

6.4. Compliance

The device is a safe low power device with Fire retardant plastic material. The Bluetooth Low Energy transmitter is certified by IC: 6514A-RN4020.

6.5. Alarm Feature

Besides the alarm feature shown on the application, this device has a dry contact which can be linked to a hospital's monitoring system (Voltage / Current Rating; 24 V / 1 A)

Alarm Contacts

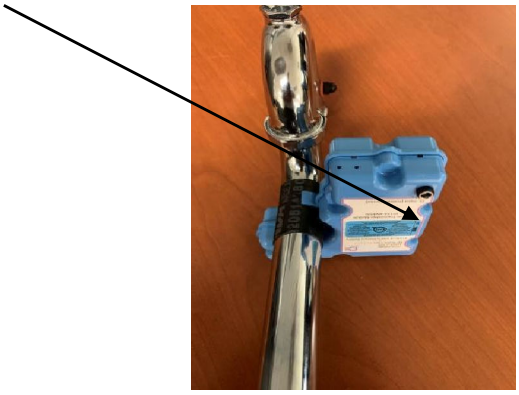

Figure 23: Alarm Feature

7. MAINTENANCE

7.1. Power Supply

In case of AC/DC adapter failure, it should be replaced with the same manufacturer recommended part. Failure to use an approved adapter would void the product warranty.

Battery life is based on the operation cycles. Typically, in default mode the batteries would last between 4 to 6 months.

When The batteries are replaced, the following steps needs to be done.

-Only Use the same battery as the originals (either TL-5003 or UHE ER-14505-H)
-Disconnect the battery holder, remove all 4 cells and replace them with new ones
-Be careful to insert batteries with correct polarity (negative polarity goes to springs)
-Be careful the battery pack terminals do not short by coming together
(For example do not place it on a metal surface)
-Non-rechargeable batteries are not to be recharged
-Exhausted batteries are to be removed from the appliance and safely disposed of
-If the unit is to be stored unused for a long period, the battery pack should be removed

7.2. Electronic Board

In case of electronic part failure, the unit can be replaced easily by removing the 6 Screws and disconnecting it from the sink trap.

7.3. Sink Trap Life Span

The lifespan of the device was measured at ~8500 cycles before the electrode reached its end of life as it was consumed during the operation. The electrode can be replaced by the manufacturer, or the entire unit can be replaced if the trap body shows signs of wear and tear.

At 8500 cycles, assuming 12 cycles run per day on average (typically observed in private/personal wash basins), the device will operate effectively for close to **2 years**. The average number of cycles per day might vary based on usage patterns resulting in slightly reduced lifespan.

To assess the remaining lifespan of the device, and measure cycles per day in your specific setup, check "Number of Operations" as discussed in section 4.3.3 in the status page of the application. Additionally, please note that the device will report an error once the electrode loses integrity and stops operating.