

Unit Assembly/On-site Setup



Pull spring pin to release leg



Extend legs out by pushing towards the ground



Place legs onto a flat surface and align adjustable locking column with pin holes to for uneven surface. (red circle)



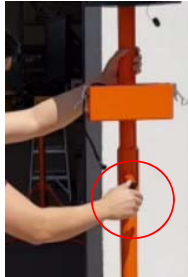
Slide pole up and down to adjust height then release pin to lock in place



Use two hands to lift traffic lantern onto base



Slide lantern into the center locking column



Secure with locking screw to stop lantern from rotating holder



Insert battery pack into battery holder



Lock latches to secure battery box



Connect power cable. Connector latches once pushed in place.



Switch on lantern



Unit is ready to operate with Hand Remote Control

IMPORTANT: ensure eSTOP™ is stable and is weighted down with sandbags prior to operation. One sand bag per tripod leg is required.

eSTOP™ Lantern Unit

1. **Connect power cable** from eSTOP™ unit to battery box. To switch on the eSTOP™ unit, push the small green Power Switch underneath the lantern unit. The green LED light will illuminate when powered on. The lantern unit will be controlled its master - the Handheld Remote Controller (HRC) once the HRC is paired.

Modes - The unit runs in two modes, the 'Test Mode' and 'Operation Mode'.

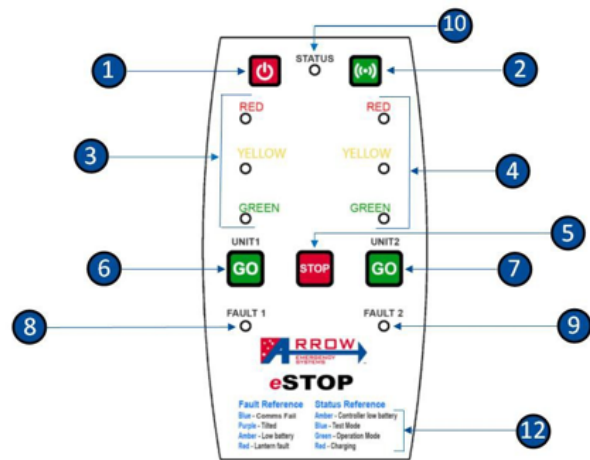
Test Mode – when the unit first powers on, by default is in test mode. In this mode the HRC can be used to perform lantern test. See HRC procedures for LED test function, each lantern will light on for 0.5 seconds.

Operation Mode – The unit can be activated (using HRC) to 'operation mode' after power-on/LED test. See HRC procedures for operation functions, when the unit first activates it will flash Yellow for 5 seconds then default to Red, then **halts for 5 seconds before it can be operated.**

2. When the lantern unit is on the RED state, a small yellow LED, called the "Red Light Indicator" will flash. This Red Light Indicator shall be facing the workers on the worksite. It's purpose is to indicate to the workers on the jobsite that the traffic lantern is on red. The Red Light Indicator shall NOT face the motorists.
3. The eSTOP™ Lantern Unit is also fitted with a "Cut-Off Switch". This is the Power Switch, located at the base of the lantern. This switch will turn off the lantern instantaneously as required. Must also be switched of when not in use.

Note: *When setting up the eSTOP™, the lanterns shall face away from motorists during test mode, then once tested and ready for operation, face the lantern towards traffic. Ensure to start activating the lights after the lantern is facing the traffic, and not to turn the lantern face again.*

Hand Remote Controller – HRC



LED indicators – There is 3 type of LED indicators – Lantern, Status, Fault.

- **Lantern indicators** 3 4 reflects the signal status of the paired lantern units.
- **Status indicator** 10 represents the states and faults of the over system and indicates the following colours:
 - **Red** – when the HRC is off, Red indicates the HRC is charging. When the HRC is on, Red indicates invalid press or fail pairing.
 - **Blue** – once the HRC is powered on, the status indicator is Blue, which represents Test Mode.
 - **Green** – when the HRC is off, Green indicates the HRC is fully charged and stopped charging. When the HRC is on, Green indicates valid press or the system is in Operational Mode.
 - **Yellow/Amber** – the Status will flash Yellow/Amber when the HRC batteries is low.
 - **Blank/no colour** – the HRC is powered off, if Pressing the buttons does not sound a beep then the HRC is faulty or battery is completely dead
- **Fault indicators** 8 9 represents the states and faults of the respected paired unit.
 - **Blue** – HRC is paired to a lantern unit but communication fail (no connection, may need to re-pair).
 - **Purple** – The paired lantern is tilted and/or rotated from its starting position after Activation.
 - **Green** – The paired lantern is communicating and operating normal.
 - **Yellow/Amber** – The paired lantern battery is low.
 - **Red** – The Paired lantern has a lantern fault in one of the LED.

Modes of Operations – The system runs in 2 modes, Test Mode and Operation Mode

- **Test Mode** (Status LED blue) - When the HRC first power up it is in Test Mode, during this mode you can pair/un-pair any Lantern units (refer to pairing section). Once it's paired to a Lantern units (and Fault light is green), you can do a LED lantern test and check the battery of the Lantern unit (refer Lantern Battery section).
- **Operation Mode** (Status LED green) - Once the HRC is paired and the Fault LED is green, the system is be activated into Operation Mode. During this Mode, the operations of a Typical Traffic Signal can be controlled, where the lantern can be controlled to STOP (go to Red) or GO (go to Green).

Operational Steps

1. **Power On** - Press and hold **Power Button** 1 for 5 seconds to power on Handheld Remote Control (HRC).
2. **Fault indicators** - When power is on **Fault Indicator** 8 9 will show different colours according to the fault hierarchy listed under **Fault Reference** 12 when more than one fault occurs, the fault with lower hierarchy will not be displayed until higher level fault(s) have been cleared.
3. **Test** - When first powered on, the HRC will starts in **Test Mode** and the **Status Indicator** 10 will show blue. During **Test Mode** the HRC can be used to pair to a specific eSTOP™ unit (Refer to Pairing section). If the HRC is paired to an eSTOP™ unit the **Fault Indicator** 8 9 will show Blue and change to green when Synced to the paired eSTOP™ unit (allow up to 1 minute for the Fault light to turn green and get synced). Once synced the HRC can be used to control the eSTOP™ unit. Pressing Buttons 6 or 7 allows eSTOP™ lanterns to be tested (A quick flashing sequence of the 3 colours to ensure the lights are working).
4. **Activation** - When ready to operate the eSTOP™, hold down **Activation Button** 2 for 5 seconds to activate the synced eSTOP™ units into **Operation Mode**, the **Status Indicator** 10 will then show Green. The eSTOP™ will only operate when **Fault Indicator** is green. **Note once the eSTOP lantern is activating/activated, it should not be rotated, otherwise a compass position fault will occur with purple faulty indicator.**
5. **Start-up** - Upon switching from **Test Mode** to **Operation Mode** the eSTOP™ lantern will flash yellow for 5 seconds, then default to red. The Hand Control will lock for 5 seconds and all buttons will not work during this time. After 5 seconds the eSTOP™ unit is in **Operation Mode**.
6. **Control Traffic Signals** - Use Buttons 5 6 or 7 to operate the eSTOP™ for traffic control. Use button 6 7 to switch one or the other signal to turn green. (Note: in order to turn a signal green one or both signal must be red first). Use button 5 to change all signals to red. (Note: the yellow lantern will activate for 4 seconds during the transition from green to red. The LED indicators reflect the eSTOP™ lantern status).
7. **De-activation** - In **Operation Mode**, holding **Activation Button** 2 for 5 seconds returns the eSTOP™ units to **Test Mode**. During transition from **Operation Mode** to **Test Mode** both eSTOP™ unit lanterns flash yellow for 5 seconds.
8. **Power off** - In all modes, hold **Power Button** 1 for 5 seconds to commence power off. During **Operation Mode** the HRC will not power off if the paired units lost sync (comms fail) to an eSTOP™ unit.
9. Switch off eSTOP™ power and disconnect battery cable before packing up.

Note: While in "off" mode, pressing "STOP" on the HRC will indicate battery life remaining. In the event of forced power off is required on the HRC, pressing button "1" and "2" at the same time forces the HRC to soft reset then powers off.

Pairing the eSTOP™ Handheld Remote Controller (HRC) to lantern units

The eSTOP™ HRC can be paired to any eSTOP™ lantern units. Once a lantern unit is paired to a HRC it is stored in memory, they will be automatically synced when powered up and ready for operation. By default a HRC is paired to 1 lantern unit only. Repairing is not required unless the HRC is pairing to a different lantern unit, pairing 2 lantern unit to 1 HRC, or lanterns has been mixed up and not knowing which lantern is paired.

It is recommended to begin pairing by un-pairing all lantern units from the HRC, this will reduce confusion about which lantern unit if already paired previously. Follow the steps below to begin the process.

Power on the HRC and the Lantern units, these must be in test mode for pairing (status blue on button 10)

Un-pairing eSTOP™ units

Un-pairing is required if the HRC is already paired to an unknown lantern and unable to sync. To do this the HRC **must be in test mode** (status light is blue), the USB port **must be disconnected** from the eSTOP™ unit. Press and hold Unit1 “Go” button 6 for 5 seconds until a beep sounds. The HRC will flash a red light on the **Status Indicator**, then **Fault1 indicator** will be blank, this indicates no lantern unit is paired to unit1 on HRC.

Repeat this un-pairing process (using Unit2 “Go” button) to un-paired Unit2 (left side of the HRC) if a second lantern is paired to Unit2 side. After un-pairing, **Fault1 and Fault2 indicator will be blank, where no LED is on.**

Pairing eSTOP™ HRC Unit1 (Left side of the HRC)

- When in test mode attach the micro USB cable from the top of the HRC unit to the USB connector on the base of the eSTOP™ lantern unit, show on the image.
- Press and hold Unit1 **GO button 6** for at least 4 seconds until a beep sounds. This single beep indicates pairing has initiated and he button can be released.
When the pairing process is complete the HRC will sound either a fast double beep as well as a green flashing light on the **Status Indicator** or a long single beep with a red light on the **Status Indicator**.
 - A fast double beep and green light indicates successful pairing. **Fault1 indicator** will go blue once it's paired and changed to green when synced (wireless communication between HRC and the lantern is established) to the paired unit.



- A long, slow beep and red light on **Status Indicator** will indicate failed pairing.

The following issues may cause failed pairing:

- USB cable is not attached properly
- Unit is already paired on Unit2 (right side of the remote).
- The eSTOP™ unit has no power/is not turned on (push green button at base of eSTOP™).
- The HRC and Lantern units are not in test mode

Once paired and synced (**Fault1 indicator** is Green, allow up to 60 seconds for this to turn Green), unplug the USB cable, and a lantern LED test (short press unit1 “GO” button) can be performed to test the paired lantern, follow HRC Operational Procedures to perform LED test and operate the lantern units.

For eSTOP™ Multi models only, a second lantern can be paired to Unit1 (same side on the HRC), this is done by plugging the HRC to the second lantern and repeat the same process above. When 2 lantern is paired to Unit1 of the HRC, the lanterns are controlled and behaves simultaneously.



Indicates in Cyan color when 2 unit is paired to one control button.

And Fault indicators will indicate Cyan color instead of green. The same process can be done with HRC Unit2.

Pairing eSTOP™ HRC Unit2 (right side of the HRC)

- Repeat the pairing process by pressing Unit2 GO button 7 in **Test Mode**. Unit1 on the HRC must be paired to an eSTOP™ before Unit2 can be paired.

Note: This is pairing a second lantern to right side of the same HRC, this pairing setup allows 2 lanterns to be controlled such that **only 1 lantern can be Green at a time**, if pairing as single unit operations, only paired to Unit1 on each HRC with each eSTOP™. Unit2 on HRC is not used.