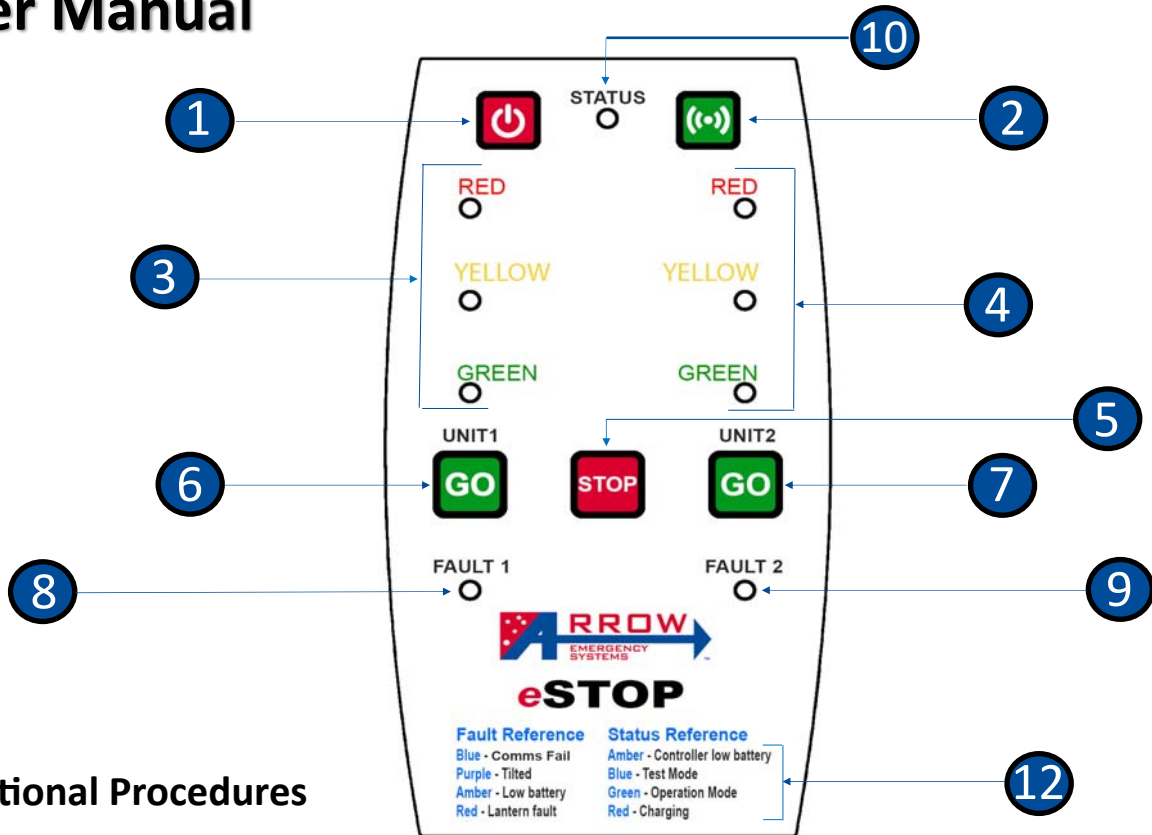


# User Manual



## Functional Procedures

### eSTOP™ Unit (Traffic Light)

1. Connect power cable from eSTOP™ unit to battery box. To switch on the eSTOP™, push the small green button underneath the lantern unit, the unit will start as **Test Mode**. Use the handheld remote controller to operate the units.

*Note: When the unit is in Operation Mode and lantern is red, a strobing amber indicator will illuminate from rear of the unit.*

*When setting up the eSTOP™, the lanterns shall face away from motorists until the unit is activated for use to control traffic.*

### Handheld Remote Control (HRC)

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 start 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.
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 & Battery Charging Instructions

## 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)

1. 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.
2. 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**.

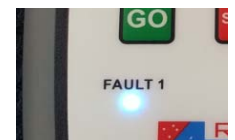
- A fast double beep and green light indicates successful pairing. **Fault1 indicator** will go blue once it's paired and changed to green when synced (wireless communication between HRC and the lantern is established) to the paired unit.
- A long, slow beep and red light on **Status Indicator** will indicate failed pairing.

The following issues may cause failed pairing:

1. USB cable is not attached properly
2. Unit is already paired on Unit2 (right side of the remote).
3. The eSTOP™ unit has no power/is not turned on (push green button at base of eSTOP™).
4. 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. And Fault indicators will indicate Cyan color instead of green. The same process can be done with HRC Unit2.



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

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

1. 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.

## Charging The Handheld Remote Control (HRC)

1. The HRC can be charged from any USB device including the one attached to the eSTOP™ unit base (the screw cap and USB connection are located at the base of the eSTOP™).  
When the HRC is switched off and the USB is attached to a charging device a red charge light indicates that the battery is being charged. When the light is green, the battery is fully charged. A flashing red light indicates that there is a battery fault and the battery should be replaced.

(Note: the battery charge indicator is only active when the remote control is switched off)

While the HRC is powered off and not charging, pressing stop button will light up the Red, Yellow, Green LEDs which indicates 3 battery levels. (refer to operation & service manual for further detail)

## Charging the eSTOP™ Lantern

1. The eSTOP™ is fitted with a light weight LifePo4 battery and is charged by removing the pole screw at the rear box of the eSTOP™ and connecting the battery charger that is supplied by Arrow Emergency Systems.

**Note: using any other non LiFePo4 charger could damage the battery and degrade the life expectancy of the battery.**

## Battery Maintenance

1. When **Status Indicator** shows yellow. The remote must be charged. Running the remote at low voltage for prolonged periods may degrade the battery's integrity and reduce the remote's transmitter power and will affect the reliability of the system.
2. Disconnect and turn all units off when not in use.

**IMPORTANT — As a safety precaution, in case of comms failure/out of range, the lantern will default to red.**