

4. Troubleshooting

- If FAB does not activate it may be due to one of the following or a combination
- Unit connected incorrectly (reverse polarity – change the wires to the correct terminals.
- Bad connection – clean and tighten connection terminals of FAB unit.
- Battery has a short – have an auto electrician inspect the problem.
- Battery voltage is below the activation voltage – recharge the battery.
- 5 amp blade fuse on positive cable is blown, open fuse holder and replace blade fuse.

5. Warning

- FAB is supplied with wires 400mm in length. The (Black negative wire only can be extended up to a max. of 700mm so when the cables are spread apart they will reach terminals 1.5m apart.
- For recovery of severely sulphated batteries, remove battery from vehicle before attaching FAB and battery charger or alternatively disconnect battery leads.
- If checking state of health of multiple individual batteries, allow a cooling down period of 30 sec between each test to avoid damage to unit and voiding of warranty.

6. Important

- Ampere Hours (Ah) is the rating for reserve capacity for auxiliary applications and must not be confused with Cold Cranking Amp (CCA) the rating for engine starting applications.
- Although FAB will help reduce electrolyte boil-off, levels should still be checked monthly.
- Because of the possibility of injury, always use caution and wear protective clothing and eye protection when working with batteries.
- Pulsing DC current produced by this product may interfere with the correct operation of some electronic devices when the unit is placed near antennas. Install the unit away from antennas.
- Ensure unit is fixed clear of any moving parts and wires are zip tied to avoid damage.
- Do not use solvents to clean unit.

7. Warranty

- Megapulse warranty covers defects in workmanship and materials for 7 years from purchase date.
- The warranty is not transferable and does not restart if and when a faulty unit is replaced.
- The warranty does not cover misuse, accident, alteration or abnormal operation.
- No warranty exists for usage outside specifications.
- For warranty replacement return faulty units to a Megapulse reseller with proof of purchase.

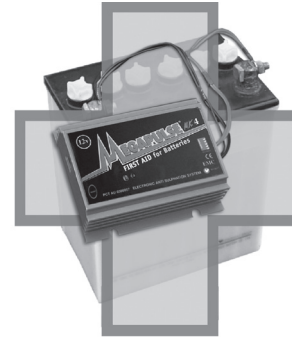
8. Models: 6, 36 & 48 volt

- The red LED on these models indicate that the battery has reached 80% depth of discharge and should be recharged immediately.

6 volt:	Mode 1 (Low) active > 5.3v	Mode 2 (Window) N/A	Mode 3 (High) N/A
12 volt:	Mode 1 (Low) active > 10.5v	Mode 2 (Window) active 10.5v to 12.8v inactive > 12.8v	Mode 3 (High) active > 12.8v
24 volt:	Mode 1 (Low) active > 21.0v	Mode 2 (Window) active 21.0v to 25.6v inactive > 25.6v	Mode 3 (High) active > 25.6v
36 volt:	Mode 1 (Low) active > 31.5v	Mode 2 (Window) N/A	Mode 3 (High) active > 38.4v
48 volt:	Mode 1 (Low) active > 42.0v	Mode 2 (Window) N/A	Mode 3 (High) active > 51.2v



Installation and User Guide



Pulse technology

Congratulations on purchasing the most effective technology available today for obtaining maximum performance & maximum service life from Lead-Acid batteries. Megapulse FAB is not a charger it is a proven electronic device using a patented Pulse Technology to make batteries work harder and last longer by preventing a common cause of premature battery failure 'Sulphation build-up on the battery plates'. Pulse Technology has been tested and proven by respected scientific organizations to be an effective remedy against Sulphation. Pulse Technology has been in Military use for over 15 years.

How do I install Megapulse FAB?

- Simply install FAB to the positive and negative battery terminals, (refer to diagrams in section 3).
- FAB will start de-sulphation of your battery immediately after installation.
- Secure FAB to firewall with screws or use zip tie to fasten to battery or battery cables.

What can I expect after installing FAB?

- FAB will go through an 8 step commissioning and battery test sequence, where it will establish the health (12v & 24v models) or state of charge (6v, 36v & 48v models) of your battery.
- The battery load test will then be repeated every 21 hours (12v & 24v models only).
- After activation FAB will flash green or red depending on result of load test (12v & 24v models).
- After activation FAB will flash green or red depending on the state of charge of the battery bank (6v, 36v & 48v models only) Refer to section 8 of this manual.
- The LED display flashing sequence of 1 flash / sec. for 30 seconds followed by both LED lit for 1 second indicates that FAB is carrying out a battery voltage measurement.

What do Green LED flashes mean?

- Repeated Green LED flashes (12v & 24v models only) means your battery successfully passed the load test and will be maintained in peak condition by having FAB permanently installed.
- Repeated Green LED flashes (6v, 36v & 48v models only) means your battery is in a charged state.
- If you move FAB to other batteries, make sure it is installed for a minimum period of 8 weeks.



What do Red LED flashes mean?

- Red LED flashes (12v & 24v models means 'check battery'.
- Red LED flashes (6v, 36v & 48v models means 'battery bank is discharged to 80%, recharge now'.
- FAB restores lost capacity due to sulphation within a minimum time of 6 weeks providing the battery is mechanically sound.

Factors resulting in Red LED Flashes - Check the following:

- Low electrolyte – add de-mineralized water to bring cell levels to maximum.
- Battery is low in charge or flat – recharge battery immediately.
- Sulphation – FAB is designed to eliminate this problem but a minimum of 6 weeks is required.
- Poor connections – Check all wires connected to the battery are firm and clean.
- Battery case distortion – batteries sag over time due to high temperatures in the engine bay. Nothing can be done to rectify this problem.
- Battery plate corrosion – over time battery plates will corrode and batteries will ultimately fail.
- Plate material shedding – this is due to road vibration combined with chronic under-charging causing the plate material to be soft and fall out of the plate grid. Installing FAB will maximize charging, therefore reducing plate material shedding by keeping it firm and in place longer.

What can I do to slow down Sulphation?

- Keep FAB permanently installed on your batteries.
- Refrain from discharging batteries below 50%.
- Recharge batteries as soon as possible after discharge.

1. General information

- Installing FAB is quick, easy and requires no special skills or tools.
- FAB is compatible with all charging systems & is protected against accidental reverse polarity connection.
- FAB must be installed directly on the battery or battery bank.
- Multiple Units can be installed in series configuration on large battery banks eg. 4 x 36v units can be installed in series on a 144v system, or 3 x 48v units can be used on the same system.
- Each FAB conditions 1500 Ah of capacity, adding more FAB raises the rating by 1500 Ah each. For specific installation diagrams please email info@megapulse.net
- FAB is primarily designed as a pulsing device not a battery load testing device.
- FAB will pulse the battery with the correct amount of pulse regardless of the load test result.
- FAB is water, dust and vibration proof, complying to P67 waterproof rating.
- FAB is equipped with a 3 second start up delay to eliminate sparking upon connection to the battery.
- FAB automatically deactivates when the temperature of the internal electronics rises beyond 70C.
- FAB is equipped with an electronic 3 Mode Activation Switch (12v, 24v models only).
- 12v & 24v models mode 1 (constant suitable for all applications. Mode 2 (window suitable for when radio interference is experienced while driving, switching to mode 2 deactivates the unit while driving and re-activates the unit when the engine is off. Mode 3 (high activation suitable for electric vehicles where interference is experienced during driving. Factory default setting is mode 1.
- For 36v & 48v models, factory default setting is high activation, 36v model is active above 38.4v while the 48v model is active above 51.2v.
- FAB employs an intelligent state of health detection system, automatically adjusting the pulse output to achieve maximum de-sulphation in the shortest time.
- FAB performs an industry standard battery load test (12v, and 24v models only).
- Load test result displayed as Green LED battery Ok / Red LED check battery.
- FAB performs the load test after installation and repeats it every 21hr (12v, & 24v models only).
- The on-board battery load test is limited to batteries of 10 Ah capacities and above.
- FAB MK4 is supplied with an external 5 amp blade fuse on the positive cable.

8 Step Commissioning Sequence upon installation

Please Note there is a 3 second start up delay when the unit is connected to the battery.

1. Red + Green LED will flash alternating for 3 seconds (indicates unit start-up).
2. Green LED lit for 1 second indicating factory default low activation mode (12v & 24v models only).
3. Red LED lit for 1 second indicating factory default high activation mode (36v & 48v models only).
4. Red + Green LED will be lit for 1 sec. every 30 sec. (indicates periodical battery voltage check).
5. If the battery is below 13v (12v systems) the load test is performed or below 26v for 24v systems.

6. Red or Green LED will flash depending on result of the load test (12v & 24v models only).
7. Red or Green LED will flash depending on battery state of charge (6v, 36v & 48v models only).
8. Step 4 is then repeated every 30 sec. indicating that FAB is constantly monitoring the battery.

2. Changing the Activation Mode

After FAB has activated, place the magnet on the spot marked "magnet", wait for LED to confirm the activation mode has been changed by displaying one of the following

12v model (3 mode) Mode 1 Green (active above 10.5v), Mode 2 Green + Red (active 10.5v to 12.8v inactive above 12.8v), Mode 3 Red (active above 12.8v)

24v model (3 mode) Mode 1 Green (active above 21v), Mode 2 Green + Red (active 21v to 25.6v inactive above 25.6v), Mode 3 Red (active above 25.6v)

36v model (dual mode) Mode 1 Green (active above 31.5v), Mode 2 Red (active above 38.4v)

48v model (dual mode) Mode 1 Green (active above 42v), Mode 2 Red (active above 51.2v)

Please Note After the activation mode has been changed, remove the magnet from the unit, as FAB will not resume pulsing until the magnet is removed.

3. Installation instructions

Remove nuts from the battery clamps. Do not remove clamps from the battery attach the eyelet connector of the Red (+) wire onto the bolt of the positive post clamp. Repeat for Black (-) wire, attaching it to the bolt of the negative post. Diagrams for common configurations are shown here, for specific installation instructions please email technical support at info@megapulse.net.

