
Regulator Programming for LiFePO₄ BatteriesDecember 2017

Introduction

Balmar MC-614, MC-624 and MC-612 regulators produced after September 2017 contain a standard program for charging lithium (LiFePO₄) batteries. Consult the **Regulator Operation Manuals** available on the Balmar website (www.balmar.net/operation-manuals/) to select the LiFePO₄ standard charge profile (“LFP”) for current production Max Charge regulators. If you purchased a Balmar regulator prior to September 2017, you can still set up your regulator to charge LiFePO₄ batteries by using the **Advanced Programming Mode** available in every Max Charge Regulator.

Instructions

First, please contact your battery manufacturer to acquire the factory-specified voltages for Bulk, Absorption and Float stages. Changes should be made to the standard “UFP” Program to achieve the required specs. Float-Absorption-Bulk voltages must be changed in this sequence, as Bulk cannot be lower than Absorption and Absorption cannot be lower than Float. A minimum 0.1 volt difference is necessary between stages. The battery must be providing at least 12.5 volts in order to save the program changes. The regulator will scroll through the program mode three times to give you the opportunity to make the required changes. These program modifications will change Bulk, Absorption and Float times to the maximum 6 hours. The instructions below assume the following values:

Bulk	=	14.2V
Absorption	=	14.1V
Float	=	14.0V

1. Turn power to the regulator on.
2. Once the regulator is running place the magnet on the Red Dot.
3. When display shows “PRO”, remove the magnet.
4. The display will then show standard programming mode. At the end, the display will show “- - -” (3 dashes) Place the magnet down when “- - -” is displayed. The display will then show “AP0, AP1...APx”. When the display shows “AP5” pick the magnet up. The display will show “PRA”.
5. When “FV” is displayed place magnet back down. The display will show Float Voltage.
6. Continue to hold the magnet down, displayed voltage will begin to count up.
7. When display shows “14.0” pick the magnet up.
8. When “F1c” is displayed place magnet down.
9. Continue to hold the magnet down; the display will show “003” and begin to count up. When the display shows “060”, pick the magnet up.

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10. When “AV” is displayed place the magnet back down; the display will show Absorption Voltage.
11. Continue to hold the magnet down, displayed voltage will begin to count up. When display shows “**14.1**” pick the magnet up.
12. When “A1c” is displayed place magnet down.
13. Continue to hold the magnet down, display will show “003” and begin to count up. When display shows “060” pick the magnet up.
14. When “BV” is displayed place magnet back down; the display will show Bulk Voltage.
15. Continue to hold the magnet down. When display shows “**14.2**”, pick the magnet up.
16. When “B1c” is displayed place magnet down.
17. Continue to hold the magnet down, display will show “003” and begin to count up. When the display shows “060” pick the magnet up.

Setting Belt Load Manager

1. Place magnet down on the red dot, when “PRO” is displayed, pick the magnet up.
2. When “bEL” is displayed, place magnet down. When the display counts up to “b-3” pick the magnet up.
3. Let the display scroll through 3 times and it will automatically save the program changes.

Additional Notes

- It is strongly recommended that an alternator temperature sensor (MC-TS-A) be use as the Li-Ion batteries will draw high current and heat up the alternator.
- Many LiFePo₄ batteries have a Battery Management System that may disconnect the battery from the alternator when charging is complete. The alternator needs to be shut down before the battery is disconnected as running an alternator without some type of load will damage the alternator.
- We also recommend you set the alternator temperature to 90°C (AL1)

Balmar Technical Support is available from 8:30 am – 7:30 pm EST Monday through Friday. Please call on us at +1-360-435-6100 x3 should you have any questions about Balmar products.