

Fire Bird V NiMH External Battery Charger



Notice

The contents of this manual are subject to change without notice. All efforts have been made to ensure the accuracy of contents in this manual. However, should any errors be detected, NEX Robotics welcomes your corrections. You can send us your queries / suggestions at info@nex-robotics.com



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- **Robot's electronics is static sensitive. Use robot in static free environment.**
- **Read the Robot's manual completely before start using this robot**



Recycling:

Almost all of the robot parts are recyclable. Please send the robot parts to the recycling plant after its operational life. By recycling we can contribute to cleaner and healthier environment for the future generations.

Experimental Set up:

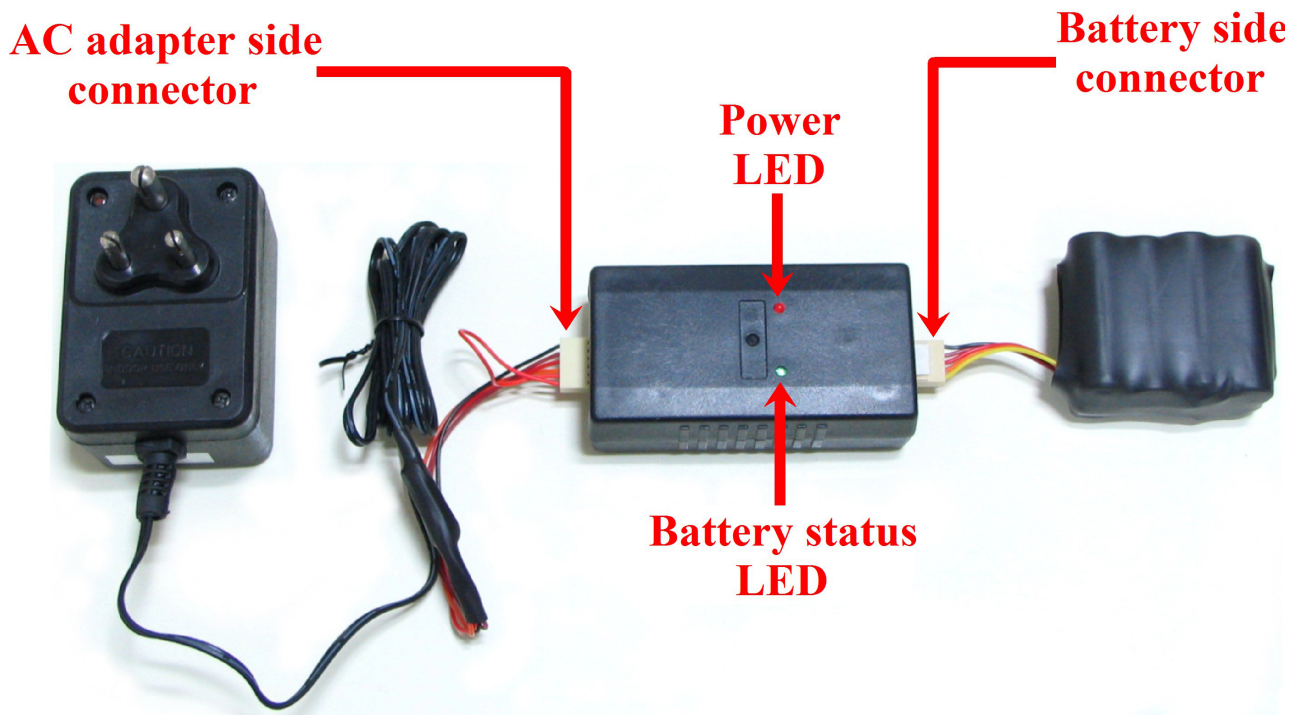


Figure 1: Experimental Set up for battery charging

Battery charging procedure:

- Remove the battery from the robot and insert the battery in battery connector and Fire Bird V's charger adaptor in the power connector. These are 5pin and 6pin connectors so that there is no risk of interchanging of the connectors. Figure 1 shows the connections.
- Connect AC adapter in the mains and turn it on. After a small delay, green LED will turn on along with the one long beep two short beeps followed by delay of 1 second. This tone will be sounded only once. This audio tone confirms that battery charging is started. If you do not hear this tone, then repeat above steps.
- When battery is fully charged, green LED will turn off and buzzer gives 2 short beeps followed by 1 second delay continuously. Depending on the version sometimes robot will also give 1 long beep followed by delay.
- If there is any fault then charger will give different buzzer beeps to indicate nature of fault. Next section describes the interpretation of the battery state with beeping buzzer.

Battery status indication based on the buzzer beeps while battery is being charged:

1. Battery entered in the charging mode:

For battery charging first, connect the battery to the charger and then connect power supply to the battery charger and power up the battery charger. On start up, battery charger will give 1 long beep followed by 2 short beeps only once and then green LED of charger remains ON for throughout this mode. Green LED may turned off for few seconds periodically.

2. Battery is fully charged:

When battery is fully charged, green LED will turn off and buzzer gives 1 or 2 short beeps followed by 1 second delay.

3. Charge termination due to over current:

During charging process, if charge current exceeds safe threshold value then battery charger will terminate charging and buzzer gives 4 short beep repeated after delay of 1 second continuously.

4. Charge termination due to time out:

If battery is not fully charged in 8 hours, then charger will stop battery charging and buzzer gives 3 short beeps repeated after delay of 1 second. If battery is unused for long time then it is possible that charger may have terminate battery charging due to timeout. In such case, discharge the battery fully and again start charging. You should repeat this for at least 3 to 4 times till timeout problem gets resolved. If the issue is still not resolved, then battery may have reached end of its usable life but you can still use battery with the robot. However the run time of the charged battery will be reduced significantly.

5. Charge termination due to battery failure:

At any time during battery charging if charger detects failure in the battery then it stops charging battery and buzzer gives 1 very long beep with a very short delay in between. In this case battery needs to be replaced or charger may have been damaged.

Important:

If you are using battery after a long time, then you have to charge and discharge it at least few times to bring the battery to its full storage capacity.

Note: For more details on battery charging please refer Fire Bird V Atmega2560 Hardware manual.