Apache Smart Charger 2020 #PPR-SC2020

Available OnLine at www.richmondrc.com

The Apache 2020 is an economical Smart Charger that works with any reliable 12-15V DC input to charge Lithium Polymer Batteries. You set the charge current and the output voltage & the Smart Charger does the rest.

Output Current can be set at 110mAh, 250mAh, 500mAh, 750mAh or 1200mAh. Output Voltage can be set for 3.7V (1 LiPo cell), 7.4V (2 LiPo cells) or 11.1 (3 LiPo cells). Indicator lights warn if you choose the wrong voltage and indicate the charging status.

The Apache 2020 comes with alligator clips for connecting to the 12-15VDC power source and a female JST connector for the output.

Please ensure you read all instructions & labels before connecting or operating your charger. Read everything once and then read it again! Once you've read things over twice, here are some basic parameters that will help you with charging.

A) Look at your battery label and confirm the Voltage and mAh capacity numbers. For example, 11.1V 1800mAh is a popular LiPo battery used to power many VMAR Electric ARF models.

B) Consult your charger manual with regards to how to set the voltage and charge current. Some chargers use switches, some use jumpers. The Apache 2020 uses jumpers. Also note what the indicator lights are used for.

C) Set the Charger Voltage first. Make sure you get it right. 1 cell LiPo packs need 3.7 volts, 2 cell LiPo packs need 7.4 volts, 3 cell LiPo packs need 11.1 volts. If your pack says 11.1 volts on its label, set your charger to 11.1 volts.

D) The maximum charge rate should be 1C meaning that the battery should never be charged faster than within 1 hour. For example, a battery having a capacity of 1800mAh should be charged at 1800mA or less while a battery having a capacity of 1200mAh should be charged at 1200mA or less. Again using the 11.1V 1800mAh battery that is popular with many VMAR Electric ARF's as an example, you would set your charger to 11.1 volts and a charge rate of 1800mAh or less for this battery. If your charger has a maximum rate of 1200mA like the Apache Smart Charger 2020, then a 1200mA maximum charge rate will charge a fully discharged 1800mAh battery in approximately 1.5 hours. This time will be less if the pack has not been discharged and may be more when allowing for trickle charging to top up the battery to full capacity.

E) Only after carefully setting the voltage and the charging current should you hook up your charger to your power source & your battery to the charger. Immediately look at the indicator lights to ensure that you have hooked things up properly. **If any indicator, heat, noise or smell suggests that something is wrong disconnect all wiring and review the instructions again.**

WARNING

CEASE USE & DISCONNECT WIRING IMMEDIATELY IF CHARGER OR BATTERY:
Swells, Smells or Overheats then Re-locate Battery to Safe Outdoor Location.
Do NOT Short Circuit, Drop, Mechanically Damage or Immerse
Ensure Discharge Current is Limited to Maximum Battery Discharge Rate

DO NOT CHARGE UNATTENDED

Do NOT Charge Near Flammable Materials. Do NOT Charge when Charger or Battery is Hot.
Use a Protective Circuit Module (PCM) between Charger and Battery.
Ensure Charger Voltage is Correct. Ensure Charge Rate is 1C or Less

PROTECTIVE CIRCUIT MODULE POLYPRO
www.richmondrc.com

What the heck is a *"PROTECTIVE CIRCUIT MODULE" (aka PCM) ?*

Should I use a PCM?

PCM's are designed to further reduce the risk of damage to your LiPo pack during charging. Given that LiPo's are somewhat costly & have no warranty, the more protection the better. Our POLYPRO PCM units are designed to work with our POLYPRO LiPo packs and the Apache Smart 2020 Charger.

The PCM makes the Smart Charger even smarter by working with the white voltage port connector on POLYPRO LiPo's to help keep any cell from overcharging. PCM's also come with the proper plugs for connecting the Apache 2020 to your POLYPRO LiPo.

#PPR-PCM2S for 2 cell POLYPRO packs.
#PPR-PCM3S for 3 Cell POLYPRO packs

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PLEASE READ THIS FIRST!

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DO NOT CHARGE UNATTENDED

Do NOT CHARGE NEAR FLAMMABLE MATERIALS. Many people place their battery pack in a small metal box or in a metal bread pan when charging. Although you need to be careful not to have any exposed leads or wires when working around metal, a metal box or pan in most cases is a good idea. Do not leave or charge your battery or charger on a car seat, dashboard or carpet.

Do NOT CHARGE inside an automobile.

Do NOT CHARGE WHEN CHARGER OR BATTERY IS HOT. If a LiPo battery is hot to the touch, it's too hot for charging. Understand why it's hot and if the battery is found to be OK, then wait until the battery cools before charging it.

To charge a LiPo Battery charger you MUST **USE A LITHIUM POLYMER (LiPo) BATTERY CHARGER.** LiPo battery chargers are very different than other battery chargers. The charger must reduce charge current to .05C above 4.20V/cell and terminate the charge when the battery has been charged to 4.3V/cell.

CHARGE AT THE CORRECT VOLTAGE. Ensure that your LiPo Charger output voltage is correct. This is related to the number of cells in the LiPo battery pack. See additional information overleaf and in charger manual.

Do NOT CHARGE at faster than a 1C rate. For example, an 1800mAh LiPo battery should be charged at 1800mA or less while a 1200mAh LiPo battery should be charged at 1200mAh or less.

USE A PROTECTIVE CIRCUIT MODULE (PCM) between your LiPo battery and your LiPo battery charger whenever possible. If your battery has a Voltage Port lead (usually lighter weight wires leading to a multi-pin connector) that is separate from the power leads (2 heavier weight wires), the battery will usually support the use of a PCM. The PCM helps to ensure that no cell in the pack gets overcharged. POLYPRO PCM's are designed for Voltage Ports on POLYPRO LiPo's.

AVOID FIELD CHARGING. You are far better off, to have 2, 3 or more LiPo battery packs charged up before you arrive at a flying field or other activity venue rather than trying to get by with 1 pack and field charging it between use. If you want your LiPo batteries to last longer and work better then fewer charge cycles at the right temperature, in a controlled environment,with a good shop LiPo battery charger is preferred to rushing a field charge immediately after use so that you can get back into action again.

ALWAYS DISCONNECT AFTER CHARGING. Do not leave your charger connected to your battery even if the charger is turned off.

FOR PREMIUM 20C PACKS ASK FOR

LITHIUM POLYMER BATTERY PACK
POLYPRO™

www.richmondrc.com

For more information about POLYPRO LiPo batteries, accessories, connectors, chargers & VMAR Electric ARF models
Visit us on the web at www.richmondrc.com
Our Support Services Knowledge Base is a good source of technical information.

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