

8

GREAT CHARGERS

Bench-tested and editor-approved TEXT AND PHOTOS BY JOHN REID

A charger is an essential investment that will pay dividends in the performance of your battery packs. Ease of use, safety features, and adaptability are important considerations when you're in the market for a new charger, and here we bench-test the latest units available so that you can pick the one that's right for you.



AMain Hobbies Prodigy 612 DUO AC/DC

This is a well-built, midsize charger with dual charging ports, and can charge two different battery types and sizes at the same time. The two-line LCD backlit screen makes it very easy to navigate to the correct menu for any type of charge settings. This unit can charge a 6-cell LiPo battery up to 12A/100W for each charging port. The 20-model memory (10 on each side) lets you store your most common battery types. Precharge function helps you save lithium batteries, with a short charging time to bring up the voltage on batteries that have been discharged too low. The separate port buttons and LED light nicely display which charging station is in use. You can also check on individual cell status during and at the end of the charging cycle. amain.com

- Ease of use**
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- Safety features**
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- Adaptability**
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FEATURES

- › Dual-channel charger
- › Maximum 12A charge current per channel (up to 100W)
- › Precharge function to help restore lithium packs with low cells
- › Many safety features

QUICK SPECS

Charges: LiPo, Li-Ion, LiFe, Ni-Cd, NiMH, Pb
Output: 0.1-12A
Discharge: 0.1-5A
Cells: LiPo, Li-Ion, LiFe 1-6S, Ni-Cd, NiMH 1-16S, Pb 1-10S
Charging modes: Balance, Charge, Discharge, Cycling, Storage
Balance board: XH type LiPo
Price: \$119.99

WHAT'S IN THE BOX Prodigy 612 DUO AC Charger, DC Power Input Cable w/ XT60 Connector, AC Power Input Cable, Tamiya Charge Lead, T-Plug Charge Leads (2), Alligator Clip Charge Lead, Battery Clamps (2), XH Type LiPo Balance Board (2), manual

Hitec X2 AC Pro Multi-Charger

This charger looks a bit different than others; it also performs differently and offers up some unique features. The menu system is easy to navigate, and the manual is set up well and explains everything in concise detail. The X2 can handle all battery types, including high-voltage LiPo batteries. The cool thing about this charger is that it offers up a total of 200 watts of power in AC (300 watts in DC) that can be distributed in any ratio between the two charging ports. Other advanced functions include a battery meter and battery internal resistance meter mode. You can even configure your settings so that you can see your charge progress on your smartphone or PC (requires extra USB cable or Wi-Fi module). This charger can handle any-size battery that you might have, offers up all kinds of data about that battery, and also includes a built-in heavy-duty 60W soldering iron with adjustable temperatures. hitecrd.com

- EASE OF USE**
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- SAFETY FEATURES**
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- ADAPTABILITY**
●●●●●

FEATURES

- › Ultimate power distribution of 200W total output to either channel
- › Includes 60W soldering iron
- › USB support for PC and Wi-Fi smartphone interface

QUICK SPECS

Charges: LiPo, Li-Ion, LiFe, Ni-Cd, NiMH, Pb
Output: 0.1-10.0A
Discharge: 0.1-5.0A
Cells: LiPo, Li-Ion, LiFe, LiHV 1-6S, Ni-Cd, NiMH 1-15S, Pb 1-10S
Charging modes: Fast, Balance, Charge, Discharge, Cycling, Storage, Re-Peak, Auto Charge
Balance board: XH
Price: \$199.99

WHAT'S IN THE BOX

X2 AC Pro Charger, XH adapters (2), power cord, charging cables (2), XT60 connector charging cables (2), soldering iron handle, soldering tip (pencil), soldering tip (chisel), soldering iron stand, cleaning sponge



Rating System

EASE OF USE

How easy the charger was to set up and start charging, how easy the menu system was to navigate, and how easy it was to switch between different battery types and sizes

●●●●● So easy that you don't even have to read the manual (but we still recommend that you do for important information)

●●● Requires some reading of the manual to move from feature to feature

● Even after reading the manual, you still have to try to figure it out

SAFETY FEATURES

What features are in place to prevent incorrect charging settings (including battery size and type), overcharging (such as time-out and optional temperature module), and whether the user has to confirm settings before charging

●●●●● All of the safety features, including optional temperature module

●●●● Main safety features, but not including time-out and optional temperature module

● Lacks the minimum safety feature to make it safe for LiPo charging

ADAPTABILITY

Whether the charger can be used on the bench or in the field (110V, 12V, or both), what battery types the charger can accommodate (LiPo, Li-ion, LiFe, Ni-Cd, NiMH, Pb), and how many cells it can handle

●●●●● Can handle all voltage input (110V, 12V) and all types of battery chemistries

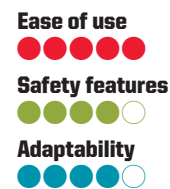
●●● Works with only one voltage input (110V or 12V) but can handle all types of battery chemistries

● Works with only one voltage input (110V or 12V) and handles one type of battery chemistry



Hobby People Activator Ultra 100

I found this charger's one-screen layout to be very intuitive, and it allowed me to see all the information needed to get the charging process going. The touch-screen buttons are straightforward, and the clear graphics make it easy to set up and use without having to refer to the manual. Presets are all on one screen, with buttons large enough for even a fat finger to select. Easily adjustable cut-off parameters make this one of the safest chargers out there; the only thing that it lacks is an optional temp probe. If you don't want a complicated charger but still need a lot of charging power and features, this is a good choice. hobbypeople.net



FEATURES

- › 3-inch, easy-to-see backlit touch screen
- › Allows for multichemistry charging
- › Easy-to-adjust alarms and audible indicators

QUICK SPECS

Charges: LiPo, Li-Ion, LiFe, Ni-Cd, NiMH, Pb
Output: .01-8A
Discharge: .1-3A
Cells: LiPo, Li-Ion, LiFe 1-6S, Ni-Cd, NiMH 1-16S, Pb 1-10S
Charging modes: Fast, Balance, Charge, Discharge, Cycling, Storage, Battery Check, Manual
Balance board: JST-XH balance ports
Price: \$129.99

WHAT'S IN THE BOX Activator Ultra 100, AC Power Input Cable, DC input power cord w/ alligator clips, output power adapter cord with T-style battery connector, manual

Horizon Hobby Prophet Sport Quad 50W

The first cool thing about this charger is that you can charge four different battery packs at the same time, max 50 watts per channel. The menu system makes this one of those chargers that you don't have to worry about always having the manual with you. I like that each of the lithium choices has its own menu as you cycle through the battery types. This is the perfect field charger for the pilot who has a lot of 2200mAh 4S or smaller packs that need to be charged quickly (quad FPV racing comes to mind). Individual cell charging performance can be seen with one click of a button during and after charging. With two ports on each side, it is easy to tell which packs are ready to come off the charger. Useful as both a bench and field charger, this bad boy can make quick work of a backlog of discharged battery packs. horizonhobby.com



FEATURES

- › 50W per channel
- › Charge four different battery-pack sizes and types
- › Four easy-to-see and easy-to-use menu screens
- › An affordable and durable charger, perfect for many charging needs

QUICK SPECS

Charges: LiPo, Li-Ion, LiFe, Ni-Cd, NiMH, Pb
Output: 0.1-6.0A
Discharge: 0.1-9.0A
Cells: LiPo, Li-Ion, LiFe 1-6S, Ni-Cd, NiMH 1-15 cells, Pb 1-12S
Charging modes: Balance, Charge, Discharge, Cycling, Storage
Balance board: JST-XH and Thunder Power
Price: \$189.99

WHAT'S IN THE BOX Prophet Sport Quad; EC3 (2), T-Type (2), and Rx (1) charge leads; power cord; XH (2) and TP/FP (1) balance boards



8 GREAT CHARGERS

Graupner Polaron EX 1400W

The Graupner brand is designed around form and function, and this charger takes up a small amount of real estate on the bench. This powerful unit is capable of producing up to 700 watts per channel with 8-cell packs, but it does require a 24-volt power source. A stylus attached to the charger makes it easier to use the touch-screen menu system, but I had no problem using my fingers to move from screen to screen. The unit also works with the new high-voltage LiPo batteries; you just need to set the charging voltage at 4.35 volts per cell. On the bench with a 24-volt power supply, this charger makes quick work with even my largest packs, and offers up a number of menus that show the health and well-being of each cell. With a total of 40 profile memories (20 each side), this is the charger that I will often go to. openhobby.com

FEATURES

- › Charges up to 700W from each channel
- › USB port for updates and software monitoring and logging
- › Built-in functionality for servo testing, ESC setting, and USB external charging
- › Charges HV LiPo batteries

QUICK SPECS

Charges: LiPo, Li-Ion, LiFe, Ni-Cd, NiMH, Pb
Output: 0.1–30A (max 700W)
Discharge: 0.1–10A (max 60W)
Cells: LiPo, Li-Ion, LiFe 1–8S, Ni-Cd, NiMH 1–16S, Pb 1–12S
Charging modes: Fast, Balance, Charge, Discharge, Cycling, Storage
Balance board: XH 8S boards (2)
Price: \$349.00

WHAT'S IN THE BOX

Polaron EX 1400 charger, EH to XH 8S adapter board with 8S cable, USB cable, DC input cable, temp sensor (2), charge cable (2), alligator clip (2), charger stand, manual

Ease of use
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Safety features
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Adaptability
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Great Planes ElectriFly Triton EQ

The Triton charger has been a staple on pilots' benches and field boxes for quite some time, and continues to be a reliable go-to charger for many people. It is designed for the indoor pilot who may not have the largest battery pack in need of charging. I found the menu system to be a little different to navigate than on other chargers, but it was still very intuitive. The manual is excellent, with its full-page pull-out reference charts to guide you through the menu windows. This is an easy charger to use, and will handle all of the different battery types up to 6-cell packs. The two-line LCD screen can be viewed from a number of different angles. Because of the option to use DC or AC power, this little charger is a good all-around tool for many pilots. electrify.com

Ease of use
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Safety features
●●●●○

Adaptability
●●●●○

FEATURES

- › Touchpad controls for easy input
- › Adjustable LCD screen for easy viewing
- › Both AC and DC power input
- › Easy-to-navigate menu system

QUICK SPECS

Charges: LiPo, Li-Ion, LiFe, Ni-Cd, NiMH, Pb
Output: 0.1–5A (max 63W)
Discharge: 0.1–1.0A (max 60W)
Cells: LiPo, Li-Ion, LiFe 1–6S, Ni-Cd, NiMH 1–14S, Pb 1–6S
Charging modes: Charge, Discharge, Cycling
Balance board: XH/TP
Price: \$99.98

WHAT'S IN THE BOX ElectriFly AC/DC TritonEQ, FlightPower/TP, ElectriFly/XH adapters, AC power cord, DC power cord w/ alligator clips, instruction manual

How Many Watts Do You Need?

To determine if a charger is suitable for your application, you must perform this calculation to determine the maximum amp rate the charger can supply. Start by dividing the watts of the charger by the voltage of the battery pack. This will tell you the maximum amp rate the charger can deliver (watts / voltage = amps).

For an example, we have a 6S LiPo battery pack and a charger that delivers 100 watts to the charging port (keep in mind that a 100-watt charger with two charging ports may only deliver

50 watts per port). Divide 100 watts by 22.2 volts (6 cells) and you have 4.5 amps. This means that the charger can supply a maximum of 4.5 amps to a 22.2-volt 6S battery.

Of course, the charging amp rate would gradually reduce as the battery voltage increases during the charge cycle. In this example, you could only charge a 6S 4500mAh battery at 1C charging rate. Any battery larger than that would be charged at less than the 1C rate, which means it may take a little longer depending on the discharge of your battery.



HobbyKing Reaktor 300W 20A AC/DC

The newest charger in the extensive line of Reaktor chargers offers up the same large power performance in a versatile, lightweight model that works off of AC and DC voltage. One of the things I like best about this unit is the ease of navigation through the menu system; I didn't need to refer back to the manual when working with this charger. The manual, however, is easy to follow and understand. You can log your charging data (onto 16Mb internal flash storage) and load that into log view and examine the data. Other nice features are the ability to see the internal resistance of each cell and being able to charge or discharge batteries to storage levels. If you need a single battery charger that is easy to transport and will work for both the field and bench, this is a good buy. hobbyking.com

Ease of use



Safety features



Adaptability



FEATURES

- › Data storage for up to 10 packs in memory
- › Individual cell balancing charge and discharge
- › 10-charge parameter memory
- › Can measure per-cell internal resistance

QUICK SPECS

Charges: LiPo, Li-Ion, LiFe, Ni-Cd, NiMH, Pb

Output: 0.1–20A (max 300W)

Discharge: 0.5–20A (max 20W)

Cells: LiPo, Li-Ion, LiFe 1-6S, Ni-Cd, NiMH 1-17S, Pb 1-12S

Charging modes: Balanced, Fast, Charge, Discharge, Precharge, Storage, Cycling

Balance board: JST-XH

Price: \$114.55

WHAT'S IN THE BOX Turnigy Reaktor, Alligator Clip Charge Lead, Charge Lead—no connector

IMPORTANT SAFETY CHARGING TIPS

Do's

Always balance-charge the battery. This can help the charger detect any issue during the charging process. It is also the best way to extend the battery pack's life.

Always use a LiPo charging bag for storage and during charging.

Always charge at 1C, when you have the time. This puts less stress on the battery pack and will allow more charges on the pack.

Always read and understand the instructions carefully before operating any battery; this is well worth your time.

Don'ts

Do not overdischarge the LiPo battery pack. If your speed control cuts off, land the plane right away; continuing to fly could ruin the battery pack.

Do not leave the battery in your model when charging. The battery pack should always be out of the model when connected to the charger.

Do not leave the battery unattended when charging. This is perhaps the most important rule: Never leave it alone, and always be in the same room.



Thunder Power TP820HVC

This charger has been the flagship model for Thunder Power from the beginning, a solid charger that can be upgraded through firmware updates. Keeping pace with the industry, this updated version includes a setting for charging high-voltage LiPo packs. A simple four-button, intuitive navigation guides you through all the menus for the correct selection of battery types and size for each charging port. The compact design and wide input voltage latitude make it great for both bench and field charging. There is plenty of power to charge even the largest battery I own, and storage function will take the battery down to the correct voltage, making it easy for me to put away my packs for the winter. If you're going to have only one charger for all your battery needs, you just can't go wrong with the TP820HVC. thunderpowerrc.com

Ease of use



Safety features



Adaptability



FEATURES

- › Up to 800W of power (400W per charging port)
- › 24 user-programmable memories
- › Adjustable charge capacity limit and per cell end and low voltage cut-off
- › Balance board works on both TP and JST-XH connectors

QUICK SPECS

Charges: LiPo, Li-Ion, LiFe, NiCd, NiMH, Pb

Output: 0.2-20A

Discharge: 0.2-10A

Cells: LiPo, Li-Ion, LiFe 18S, HV Lipo 2-7S. NiCd, NiMH 1-24 cells, Pb 6-30V

Charging modes: Balance, Charge, Discharge, Cycling, Storage

Balance board: TP and JST-XH

Price: \$270.00

WHAT'S IN THE BOX TP820HVC, charger leads (2), TP and JST-XH balance board, instruction manual