

# ***SIRIUS CHARGE PRO Series***



***PLUS***  
Battery Conditioning  
Fast Field Charger

## WELCOME TO SIRIUS CHARGE

- SIRIUS CHARGE is a fast, fully automatic field charger for **NiCd or NiMh** batteries.
- Our RPC™ charging technique cures NiCd "memory", rejuvenates old batteries, and greatly extends the life of all NiCd and NiMh batteries. Because it is so effective, it totally eliminates the need to “cycle” your batteries.
- SIRIUS CHARGE is “**GOOF PROOF**”. You cannot harm the charger OR your batteries by **plugging anything in backwards!**
- The SIRIUS CHARGE PRO Series also has a Voltage Boost Circuit, to assure a *full* transmitter charge from an input voltage as low as 10 volts.

## WHAT YOU CAN CHARGE

SIRIUS CHARGE will automatically charge many different sizes of batteries commonly used in radio control sets.

**The maximum range of NiCd battery sizes is:**

**4 to 8 cells, 250 to 2000 mAh, with the Transmitter cord**

**4 to 6 cells, 250 to 4000 mAh, with the Receiver cord**

**The maximum range of NiMh battery sizes is:**

**4 to 8 cells, 500 to 2000 mAh, with the Transmitter cord**

**4 to 6 cells, 500 to 3000 mAh, with the Receiver cord**

## SIRIUS CHARGE INPUT VOLTAGE

SIRIUS CHARGE requires a 11 to 18 volt DC power source, such as:

- A 12 volt field box battery (Gel Cell, etc.)
- A 12 volt auto battery
- A 12 volt DC power supply, commonly used for CB radios or car stereo.

## SIRIUS CHARGE INPUT CURRENT

### **Warning**

Some automotive-type battery chargers put out high voltage pulses capable of damaging SIRIUS CHARGE. You may use an auto battery charger as a power source **ONLY** if it is **ALSO** connected to a 12 volt battery. The 12 volt battery will then act as a filter, and give excellent SIRIUS CHARGE performance.

**Fast charging:** 3 Amps max. (both batteries charging)

**Maintenance Mode:** 200 mA average (100 mA/battery)

**Sleeping** (no **TX** or **RX** batteries connected): 1 mA

## PREPARING SIRIUS CHARGE FOR USE

1. SIRIUS CHARGE is supplied with a Futaba “J” female connector that fits all brands of receiver batteries.(Except old Airtronics) If you need another type of connector, do not splice another wire into the RX wire! Make or purchase an adapter to fit the connector instead.

Example: to adapt to an aircraft-mounted charge receptacle, use an aileron extension cord .

2. The transmitter plug fits Futaba, *Airtronics* and **Hitec**

**Warning: Make sure your connections are WELL INSULATED. Shorting a NiCd battery can start a fire or cause the battery to explode!**

charging jacks. (For **JR** radios, you will need a polarity reverser, available from Peak Electronics.)

3. The Power Input banana plugs fit standard power panel "starter" jacks. Or, you may remove the plugs and connect the wires directly to your field box battery.

4. Set the **RX Battery Size** switch to most nearly match your receiver battery. Don't worry if your battery size is not exactly the same as one of the switch positions.

### Suggested switch settings for various size batteries:

250 to 800 mAh: set to “**500mAh**”

800 to 1500 mAh: set to “**1000mAh**”

1500 to 4000mAh: set to “**2000mAh**”

**NOTE: The RX Size switch changes the computer “maintenance charging profile”. It does NOT change charge current, and it does NOT affect the transmitter charger.**

## SIRIUS CHARGE OPERATION

**1. Connect SIRIUS CHARGE to a DC power source.**

*See page 3 for suitable power sources.*

**2. Plug SIRIUS CHARGE into your transmitter (TX) and/or receiver (RX) batteries.**

• *The computer will automatically turn on and analyze your battery. After 2 seconds, the green TX and/or RX LED(s) will light. A steady green LED indicates "charging".*

**3. Wait for the blinking green LED.**

• *The green LED will start flashing when SIRIUS CHARGE finishes fast charging and enters Maintenance Mode.*

**4. You may leave your battery connected until ready for use.**

• *SIRIUS CHARGE will maintain the charge level and condition the pack as long as you leave it on charge.*

## HELPFUL HINTS:

- Charge your plane often at the flying field. It's safe, easy to do, and your batteries will always be at peak performance.
- You can charge your plane on the way to the flying field using a cigarette lighter adapter (available from Peak), or install banana jacks in the rear of your car or truck (trailer wiring harnesses often have a 12 volt “hot” lead).
- Rotate your charger among your radios: charge one while flying another.

## **IF NOTHING HAPPENS**

The SIRIUS CHARGE computer requires BOTH a power source AND a battery to be properly connected before it will turn itself on.

- **Check the 12 volt DC input for correct polarity.**
- **Make SURE your RX battery is plugged in correctly.**
- **Is your transmitter turned OFF?**
- **If your transmitter has a charging circuit diode,** the TX charger won't turn on. Try connecting the battery directly to the TX cord. If this works, see pages 9 and 10 to jumper the diode.

## **IF THE RED LED LIGHTS**

- A red **TX** LED usually indicates your 12 volt power source cannot supply enough voltage or current. The input voltage must be 10.0 volts or higher with a 1.5 Amp load. Remember, SIRIUS CHARGE is a dual *fast* charger, and it requires a healthy power source.
- If a red LED lights when a battery is plugged in, the battery voltage may be much too low or too high. (Example: If a transmitter battery is connected to the **RX** cord, the computer sees the voltage as too high.)  
(Example: If a single cell is connected to either cord, the computer sees the voltage as too low.)

## **CHARGING TIME**

SIRIUS CHARGE uses a regulated **1100** mA current source for charging. To estimate full charge time for any particular battery, divide the battery capacity by 1100. Some examples:

1100 mAh receiver pack:  $1100 \div 1100 = 1.00$  hours

1600 mAh transmitter pack:  $1600 \div 1100 = 1.36$  hours

2800 mAh receiver pack:  $2800 \div 1100 = 2.55$  hours

***Remember: these times are for fully discharged batteries. Partially charged packs take less time.***

## **IMPORTANT INFORMATION**

**Older batteries often suffer from a loss-of-capacity effect known as "memory". SIRIUS CHARGE can often recondition older batteries to full power.**

***Be persistent!*** You may need to discharge and recharge a battery several times to restore lost performance.

When the green LED is flashing, SIRIUS CHARGE is in Pulsed Maintenance Mode. ***This is NOT a trickle charge!*** The full current charge and discharge pulses are carefully timed to chemically condition the cells, keep them fully charged, and eliminate NiCd "memory" effect without overcharging. Please see page 8 for more information about caring for NiCd batteries.

## **NiCd BATTERY CARE**

- You may "FORM" brand new (never charged) batteries by charging overnight, once, with a trickle charger. The one supplied with your radio will work fine. Then discharge and recharge the pack at least 3 times, With the Sirius Charge. We suggest recharging with your SIRIUS CHARGE every flight for your first 5 flights if you have new batteries.
- Although SIRIUS CHARGE eliminates the need to cycle batteries on a regular basis, we recommend that you do so once a year to test your NiCds for capacity. Use our **SuperTest** Precision Battery Tester, or a cyclor, at the beginning of the flying season.
- When storing NiCd batteries, we suggest using the following guidelines:  
Up to 1 week: Connected to your SIRIUS CHARGE, or, just let them sit.  
Up to 3 months: Just let them sit.  
Up to 12 months: Discharge with a **SuperTest**, then let them sit. Use our **SuperTest**, or a cyclor, to test for capacity before use.

**NEVER store NiCd batteries on a trickle charger!**

## **DOES YOUR TRANSMITTER HAVE A DIODE?**

Some transmitters have a diode installed in the charging circuit. This diode prevents SIRIUS CHARGE from reading the battery voltage. It also prevents discharging your battery through the charging jack, which is an important part of the RPC™ charge technique.

**SIRIUS CHARGE cannot detect your battery (and turn itself on) when there is a diode in the charge circuit.**

If your transmitter has a diode, you may:

- Remove the battery, and charge it directly. Peak Electronics makes adapters for this purpose; call for information.
- Send your transmitter to a Factory Authorized Service Center, and request that they "jumper the charging circuit diode."
- Send your transmitter to Peak Electronics. We will jumper the diode for you at no charge.
- Take your transmitter to a local electronic repair service and request that they "find and jumper the charging circuit diode."
- If you are comfortable with electronic work, you can jumper the diode yourself.

## **IF YOU WANT TO JUMPER THE DIODE YOURSELF**

① **Disconnect the battery while working on the transmitter!**

② **Open the transmitter case and locate the diode.**

Sirius Electronics has free instruction sheets for locating the diode in popular Futaba FM (Futaba AM has no diode) and Hitec radios. We have these sheets posted on our Internet web page: <http://www.SiriusElectronics.com>

Or, have the transmitter model name ready (such as "Futaba 6XA"), and telephone (480) 558-1996 to request a printed copy. Late model Airtronics (except the RD6000) series transmitters do **not** have charge circuit diodes.

③ **Use an ohmmeter to verify the diode you have located is between the battery and charging jack.**

④ **Solder a short piece of THIN wire across the diode.**

30 gauge wire wrap wire is ideal, or, you may use a single strand of stranded hook-up wire. (A thin wire will act as a fuse if you should accidentally short the charge jack.)

⑤ **Reconnect the battery and close the case.**

⑥ **Plug the SIRIUS CHARGE TX cord into the transmitter charging jack. The green TX LED should light after about 2 seconds.**