

Vector AC/DC NX85 Delta Peak Charger

We take a look at this latest Fusion charger from Logic RC

We all seem to take battery charging of our transmitters and receivers for granted. In most cases we are supplied with an appropriate charger when we buy our radio outfit and just plug it in to charge overnight before flying. This is all very well if you have an AC mains supply close at hand, but it can be very inconvenient if you are out in a field camping or holidaying without the comforts of AC power at hand.

Various multi-chargers on the market these days will allow such field use, but one thing they cannot do is charge a Tx or Rx NiMH battery as well as a flight pack at the same time, so what do you do? The answer is quite simple really – use a second charger.

The Fusion Vector AC/DC NX85 charger has been purposefully developed by Logic RC specifically for charging Tx and Rx NiMH and NiCad batteries, either at home or at the field.

and fitted with a cigar lighter adaptor, terminating with a 2.5 mm Power Plug to insert into the charger.

While the case construction is of durable plastic, a navy blue front panel is protected with a film covering. On the front panel we see an AC Input rocker On/Off switch, a rotary five-position Charge Rate selector switch, and a dual red/black Sprint Clip Connection to insert any of the five different charge lead connectors that include:

Futaba Tx, JR/Spektrum Tx/Rx, Traxxas and Tamiya types.

Three coloured LED lights on the front panel indicate the charge state; a top red LED will glow to indicate Power On, the bottom red LED will glow to indicate Fast Charging, and a green 'Trickle Charge' LED will glow to indicate when the battery is fully charged.

A cooling fan mounted inside the back of the charger prevents accidental overheating and has cooling vents at the rear.

A single sheet operating instruction leaflet is enclosed split into seven languages detailing the Specs, Features, Safety Precautions, and Operation.



Description

The NX85 charger is easily identifiable by its colourful box artwork that is now an established trademark of the Logic RC Fusion range of quality chargers.

Being dual power input the NX85 charger comes with a standard UK 3-pin AC 240 volt mains plug terminating with the common 2-pin plug that inserts into the charger. As an alternative means of powering up the charger a 12 to 14 volt DC lead is also supplied,

This unit is either AC or DC operation and supplied with both leads



Features

Before we look at the operation perhaps it would be a good time to just mention some of the main features.

Not many budget-priced mains chargers allow you to vary the charge rate, but with the Vector NX85 you have a choice of five different settings for different applications: 0.5 A, 1.0 A, 2.0 A, 3.5 A, or 5.0 A for NiCad or NiMH battery packs of between 4 to 8 cells. This enables charging for small capacity batteries for example a 500 mA 4.8 volt receiver pack, to a much larger 8.4 volt NiMH flight battery of 3000 mA or greater. However, it must be remembered that this is a Nickel-Cadmium (NiCad) or Nickel Metal-Hydride (NiMH) Delta-Peak charger and not suitable for Lithium-Polymer (LiPo) or Lithium-Iron (Li-Fe) cells.

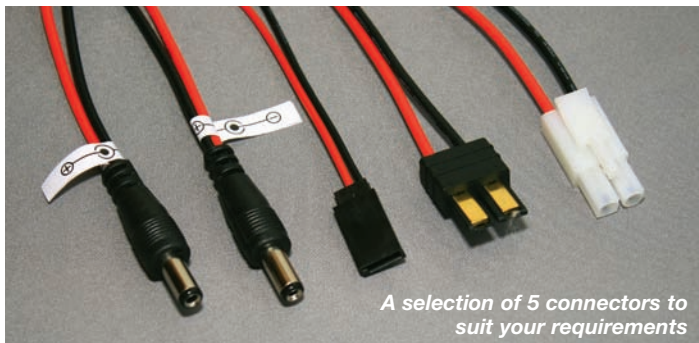
Delta Peak charging is a method for determining when NiCad and NiMH batteries are fully charged. It works like this:

As the charger adds energy to the battery the voltage it generates rises. As the battery reaches its fully charged level, the energy the charger pushes into the battery is dissipated by the battery as heat, causing the capacity of the battery to drop slightly, lowering the capacity and hence voltage of the battery. The charger is then able to look for this drop in voltage and stop charging.

NiCad cells work well with delta peak voltages (the size of the voltage drop when fully charged) of 5 mV. As we know, NiMH cells are much more sensitive to overcharging than NiCad cells so it is advisable to use 'zero delta peak' (no voltage drop, just a 'levelling off').

To use delta peak charging, the charge rate must be high enough to cause the cell to heat slightly at the end of the charge. One advantage of using delta peak charging is that the voltage drop can be observed even in a large pack of cells, allowing the charging to be stopped as soon as the first cell reaches its limit. Usually a charge rate of 1C (the stated battery capacity; e.g. 2000 mA) works well.

WARNING: Delta Peak charging should never be used to charge LiPo cells, or any cells not advised by the manufacturer, as permanent damage is likely, and could result as the cause of fire.



A selection of 5 connectors to suit your requirements

Operation

There is nothing difficult about operating this charger; it's as easy as they come. The instructions are basic, and to be honest it is so simple that anyone can operate it.

With the choice of connector types for Tx and Rx, the majority of modellers will have no problems selecting the correct type and inserting the bare ends of the charge lead into the charger's Sprint Clip output connector, ensuring of the correct polarity; black wire = - black terminal!

The charger can now be connected to either the mains or 12 volt input by using the supplied power lead (a suitable Fusion Power Supply can be used here also) and plugging into the appropriate power source socket on the back of the NX85 charger. Next you select the appropriate charge rate from the 5-position Charge Rate switch on the front panel. It is advisable not to try to charge cells faster than they are designed to accept. (Refer to the battery manufacturer's instructions if in doubt.) By connecting a battery the charge will commence, indicated by the lower red LED.

When the charge is completed the charger switches to trickle charge indicated by the green central LED.

Logic RC have thoughtfully included a calculation in the instructions to assist charge time for a discharged battery pack. So let's assume we have a typical 1000 mAh Tx or Rx battery, then the Charge Rate setting on the charger should be set to 1.0 Amp to give an approximate charge time of approximately 1 hour. If you choose to select 0.5 A then it will take twice as long, and if you elect 2.0 A then it will only take 30 minutes (approx), but check that your battery is capable of accepting a faster than 1C charge before attempting this.

Suitable Safety Precautions are given in the instructions, and should be adhered to at all times.

Summary

During testing we charged several batteries from this charger and found that they all received a full charge. It should be mentioned that this is not a cell-cycler (discharge-charge) unit, and therefore is suitable for charging purposes only – this is reflected in the low retail price, and for my money is worth every penny!

NX85 SPECS

- NiCad/NiMH – 4~8 Cells
- Charge Rate Selectable – 0.5 A, 1 A, 2 A, 3.5 A & 5 A
- Charge Status – LED
- AC Input – 110~240 V AC or 12 V DC (cigarette lighter adaptor included)
- Futaba Tx, JR/Spektrum Tx, Rx, Traxxas and Tamiya type charge leads included
- 4 mm Sprint Clip Connection
- Delta Peak



Left: Fusion NX83 AC only Tx/Rx charger is a standard replacement for most manufacturers' chargers



Above: Align the Power Plug 'TIP' pin to the required polarity, -NEG, or +POS as shown

Fusion NX83 AC Tx/Rx Delta Peak Charger

In addition to the Fusion NX85, Logic RC have also introduced this smaller mains only Tx/Rx dual charger. It has been suitably designed by Logic RC for use as a replacement NiMH or NiCad cell charger of between 4 to 6 cells (750 mA Delta Peak) for Rx, or 4 to 8 cells (150 mA Constant Current) Tx cells, and suits most Futaba, Hitec, and JR/Spektrum transmitters and receivers.

Thoughtfully two different sized Power Plug adaptors have been supplied to suit your requirements, and the polarity for the equipment can be selected by reversing the connection on fitment to the plug; the instructions clearly indicate the appropriate connection required for these popular brands.

The charger's Tx lead plug has a 2-pin female socket and the connections are clearly marked on the socket moulding +POS or -NEG; the Power Plug adaptors are marked TIP and this should line up with the appropriate polarity you require when you plug it into the lead socket. The word TIP then indicates the polarity of the central pin of the Power Plug. Red LED lights indicate power to the Rx and Tx batteries on charge.

The Tx charge is designed for slow charging of around 10 hours plus, and therefore does not require a cut-off, and the LED will show red at all times while the Tx is connected.

For the receiver pack a standard 3-pin Futaba plug is fitted that will accept Hitec and JR types as well.

Being designed for faster charging for the Rx battery with Delta Peak cut off, the Rx LED will change from red to green indicating the charge is complete.

The NX83 charger works as well as any manufacturer's type, but offers the user single charger with a range of connection types for different transmitter brands, therefore offering a single charger instead of the array that is sometimes accumulated and used in many households and workshops. **RCMW**

INFO

- Manufacturer:** Logic RC
- Distributor:** Logic RC
- Price UK:** Fusion Vector NX85 AC/DC Charger – £23.99
Fusion NX83 Tx/Rx AC Charger – £9.99

Contacts
Logic RC
www.logicrc.com
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Above/inset: The Power and Charging LEDs show up clearly; inset green LED shows trickle charge

