

Description

The ICS charger is a dual bay, stand alone battery charger with the versatility to accommodate a broad array of cell chemistries and configurations. Typical applications include lithium ion (1 to 8 cells), nickel metal hydride (2 to 20 cells), nickel cadmium (2 to 20 cells), and lead acid (2 to 12 cells). The maximum charge current is easily adjustable from 500mA to 4000mA. The unit may be ordered with a plastic housing and output cable for use as a finished product.

The ICS charger uses an external power supply. Depending on the application, this may be either a universal input switching supply or an inexpensive iron-core wall adaptor. Since the current sensing occurs in the negative battery lead, there must not be a common ground connection established between the battery and the external power supply.

Absolute Maximum Ratings

Input voltage 40DC

General

Adjustable charge current 500mA to 4000mA
 Current tolerance $\pm 10\%$
 Voltage limit 4V to 35V
 Voltage limit tolerance $\pm 0.2\%$
 Operating temperature 0°C to 50°C

Physical and Environmental

Dimensions 6.50" x 4.50" x 1.40"
 (165mm x 114mm x 36mm)
 Weight 4.2oz (119g)
 Material FR4
 Storage temperature -20°C to 80°C
 Humidity 15% to 95% (non-condensing)

Optional Components

Length 8", stripped and tinned
 Red wire Positive battery lead
 Black wire Negative battery lead
 Green wire Thermistor lead
 (used only with NiMH and NiCd)
 Input connector 2.5mm or 2.1mm
 (center positive)

LED Indications

Off No battery detected
 Power-up Red-yellow-green-off
 Green flashing Fast charging
 Green solid Fully charged
 Yellow solid Out of temperature range
 Red/green flashing Shorted terminals
 Red flashing Error

ICS	Lithium Ion Chemistry	NiMH Chemistry	NiCd Chemistry	Lead Acid Chemistry	Timed
Termination Algorithm	CCCV	dT/dt (Thermistor required)	Negative delta V	CCCV	Timer
Applicable Range	N/A	Capacity/3 to 3x Capacity	Capacity/3 to 3x Capacity	N/A	< Capacity/6
Termination Value/Point	Current falls to limit value/5	0.75°C/minute $\pm 0.1^\circ\text{C}/\text{minute}$	52mV $\pm 5\text{mV}$	Current falls to limit value/5	Customer specified
Top-off Charge	1 hour or current falls to limit value/10	1 hour at C/10	1 hour at C/10	N/A	N/A
Trickle Charge	N/A	Continuous at C/300	Continuous at C/300	Float	Continuous at C/300
Charge Current Limit	Customer specified	Customer specified	Customer specified	Customer specified	Customer specified
Charge Voltage Limit	Customer specified	Disabled	Disabled	Customer specified	Customer specified
Override Timer	None	4 hours	4 hours	None	Customer specified
Restart Threshold	7/8 of termination voltage or every 2 hours	N/A	N/A	7/8 of termination voltage	N/A
Number of Cells	1 to 8	2 to 20	2 to 20	2 to 12	2 to 20