

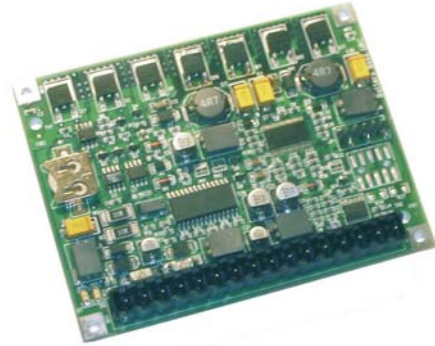
Battery Boss - URC

Smart Charger, 3.3V and 5V Regulator & Battery Protection

Index Designs

Features

- Provides tapered charge using a single low cost power resistor.
- Regulated 5V & 3.3V outputs at 3.5 Amps each.
- Battery output is protected and current limited.
- Enhances battery life through smart charge and discharge control.
- RS-232 port for remote control & monitoring.



Applications

- Vehicle based monitor systems
- UPS for tool control systems

- Ship board electronics
- Solar panel power systems
- Remotely controlled power

General Description

The Battery Boss-URC is a multi-function power controller / UPS with built in battery charger, output regulators and electronic circuit breakers. Low cost "Tapered Charging" is implemented through a MOSFET and external power resistor.

An internal microprocessor and Real Time Clock provides many software features. Automatic wake-up, watchdog timer and battery condition cycles are just a few.

Battery and Operating Features

The URC supports various battery chemistries, capacities and operating conditions. Charging current, voltage limits, load current limits and various timers can all be configured via EEPROM constants.

A built in RS-232 serial port allows a remote processor to read time and date, set "Auto-Wake Up" timers, monitor voltages and currents, activate a built in Watch Dog Timer and control overall system power. Power and battery failures are monitored and reported.

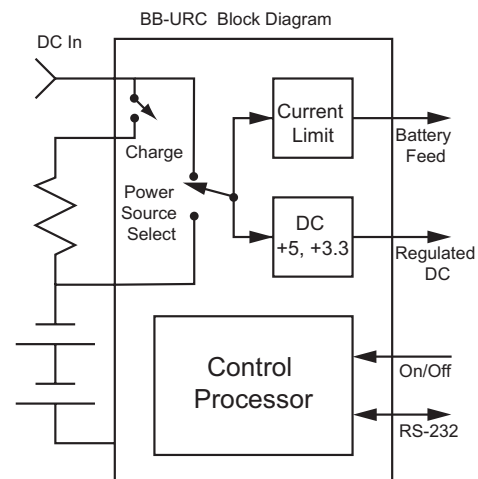
Functional Description

Power from the external DC source is "Diode ORed" with battery circuits. The highest voltage, either the battery or DC input, provides power to a "Battery Output" and internal switching DC regulators. Both battery and switching regulator outputs are current limited and under processor control.

A power MOSFET and external power resistor are used to control charging. When charging is required

the MOSFET is turned on and the battery is charged. The input voltage must be greater than the battery voltage to support charging.

Block Diagram



The above block diagram shows input power, battery and basic output connections. Also shown are the On/Off control signals and RS-232 channel.

Specifications:

Input Voltage Range	8 to 30 Volts
Output Voltage	Battery Output: 5 Amps DC Outputs: 3.3V@3.5A, 5V@3.5A
Size and Mounting Hole Location (Inches)	Size: 4.0 x 3.0 x 0.40 Mounting Hole Dia.: 0.125 Hole Centers: 3.7 x 2.7

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