



## Power Box GVP-15

### 15A MPPT Solar Charge Controller with Power Management

Genasun's GVP-15 "Power Box" is a complete power management solution for precision equipment operating in harsh environments. Constructed with cold-rated ceramic components, the operating temperature range and life expectancy exceed all other solar charge controllers. Equally important, the Power Box has an extremely low self-consumption, making it perfect for long polar winters, and its low electrical noise and regulated output eliminate interference with sensitive electronics.

## Features

### **Maximum Energy Capture. Minimum Self-Consumption.**

- 99% Peak efficiency.
- Broad efficiency curve for excellent low-light operation.
- 20HZ Continuous Maximum Power Point Tracking.
- Low System Operating Current (2.3mA at night with display on).

### **Reliability in Harsh Environments.**

- Ceramic Construction. No electrolytic capacitors.
- Conformally Coated.
- Primary and secondary battery inputs for uninterrupted power.
- No fans, relays, switches, or other moving parts.

### **Advanced Electronic Protections**

- Reverse polarity protection on both batteries and PV array input.
- Short-circuit protection on array and load.
- Uninterrupted operation of all systems not experiencing a fault.
- Automatic reactivation of systems when the fault is removed.

### **Portable. Deployable.**

- Lightweight.
- Small Footprint.

### **Metering via Integral LCD display**

- Battery voltages (primary and secondary).
- Solar charging current.
- Status of load output (Pri/Sec/Off indicate load power source)

### **Designed for Low Noise Operation**

- Best in class noise on inputs and outputs.
- Auxiliary 11.4V regulated output for seismic sensors.

# Specifications



## Electrical

- Peak Efficiency 99%
- Nominal Battery Voltage 12V
- Primary Battery Voltage Range 8-20V
- Secondary Battery Voltage Range 8-18V
- Max. PV charging current 15A
- Max. PV Open Circuit Voltage 34V
- Max. Recommended PV Power 200W
- Night Consumption 2.3mA
- Reverse polarity protection on all inputs

## Mechanical

- Supplied as bare PCB
- Fits Vynckier VM753 Enclosure
- Dimensions 6.2" x 4.175" x 0.8"
- Weight 185 grams
- Electrical connections Male Faston/quick-disconnects

## Environmental

- Electrical operating temperature -40°C to +70°C (tested -78°C to 100°C)
- Display operating Temperature -30°C to +70°C
- Storage temperature -40°C to +85°C
- Humidity 100% non-condensing
- Conformally Coated

## Warranty

- 5 Year

# Operation

## Unregulated Load Output:

- Protects secondary (rechargeable) battery from over-discharge
- Backs up load with optional primary (non-rechargeable) battery
- Switches load to primary when secondary reaches 11.2V
- Switches load back to secondary when secondary reaches 12.6V
- 10A max. output current
- Output voltages >10V at full load during power switching transition.
- Short-circuit protection with automatic recovery.

## Regulated Load Output:

- 11.4V nominal
- Runs from unregulated output
- < 1V dropout
- < 100mVpp ripple, 0-1Aout.
- 1A continuous output
- Short-circuit protection with automatic recovery

## System Diagram

