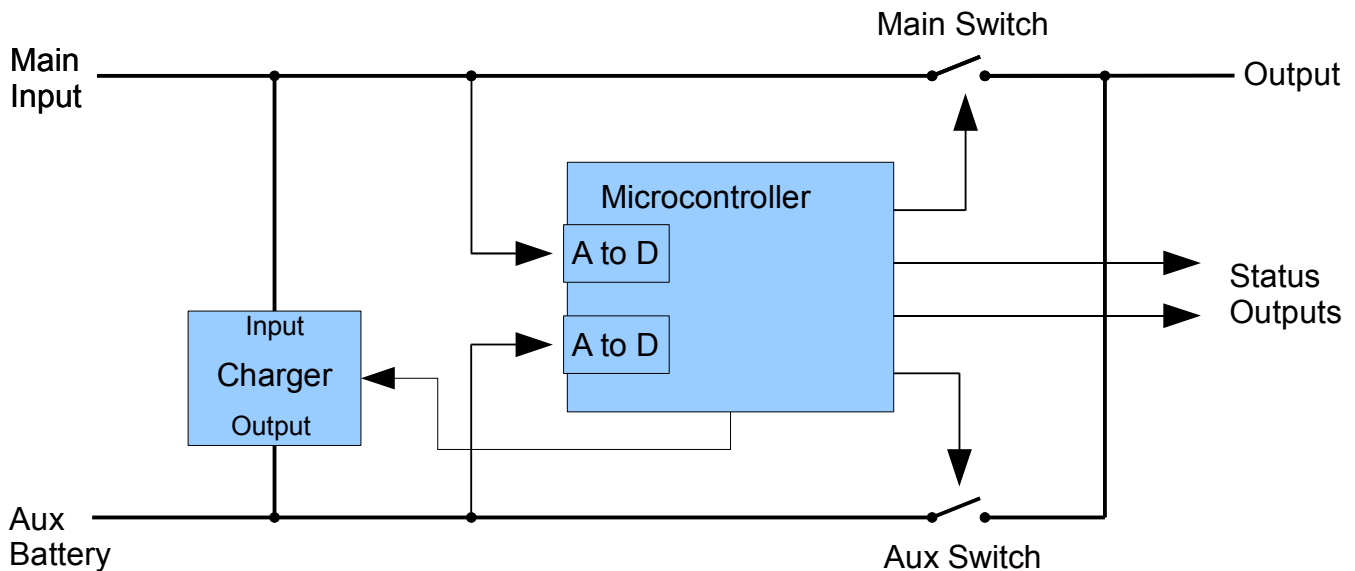


PST-DC-UPS-5A



Theory of operation for the PowerStream 5Amp DCUPS:

The PST_DC_UPS_5A is designed to provide a continuous source of power to a 12 volt load. It is primarily used in a car or truck to prevent computer or other electronic devices from reset or loss of power when the main battery voltage drops when starting the engine. It can also be used to provide power to security systems in the event that the main battery is disconnected.

There are 6 voltage settings used for this product.

- | | |
|-----------------------------|--------------------------------|
| 1) Main ON | 4) Charge OFF |
| 2) Main OFF (The "N" value) | 5) Aux ON (not currently used) |
| 3) Charge ON | 6) Aux OFF (The "P" value) |

The micro controller continually monitors the voltage of the Main and Aux inputs. When the voltage on the Main input goes above Main ON, then the Main switch is closed. When the Main Input voltage falls below Main OFF, the Main Switch is turned off and the Aux Switch is turned on. The Aux switch remain on until the Aux voltage falls below Aux OFF. When the Main Input voltage rises above Main ON, then the Aux switch is turned off and the Main Switch is turned on. Please note that the Main and Aux switches are never on at the same time.

The purpose of having a different ON and OFF levels for the Main Input is to provide some hysteresis to prevent the device from switching back and forth between the Main and Aux inputs due to wire resistance. Normally, we set Main ON about 300mV above the Main OFF value. This difference can be adjusted by special order

Battery Charger:

The battery charge function of this device is capable of charging the Aux battery to 13.8 volts even if the Main Input voltage is as low as 12 volts. The charger turns on when the Main Input voltage is above Charge ON and is turned off when it falls below Charge OFF. Charge ON should always be chosen to be above the Main ON, and Charge OFF should always be chosen to be above Main OFF. Unless otherwise specified, we set Charge ON and OFF to be 100mV above the respective Main ON and OFF levels.