CASCADE AUDIO ENGINEERING
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APS IQ4

Category: AC/DC Power Converters

Technical Data Sheet

Take your APS Power Supply to the next level...

The IQ Smart Controller offers automatic charging control for APS Power Supplies, providing longer and safer use of your system's battery. The IQ Smart Controller is compatible with any APS Power Supply model (Except APS-100 Also, the APS-90 is two stage only) and is covered under our standard Two-Year Warranty.

The IQ Controller allows the APS Power Supply to operate as an automatic 3-stage "smart charger." This gives the customer the benefit of Bulk, Absorption, and Float stage charging, increasing the charging capacity of the APS Power Supply and decreasing charge times, insuring proper and safe battery charging and minimizing over-charging. This "smart" technology monitors the battery at all times. If the APS voltage remains in the long term stage for more than seven days, the IQ will automatically deliver a boost charge for a predetermined time, then automatically return to the normal float stage.

☐ **Increased Battery Capacity**
After the Bulk Stage, the batteries are held in the Absorption Stage for a controlled period, insuring a full and complete charge.

☐ **Reduced Battery Stress**
During the Float Stage, the APS Power Supply voltage is reduced. This minimizes gassing while maintaining a full charge at the nominal rate of the battery.

☐ **LED Indicator**
The LED Indicator on the IQ4 informs the user as to the status of the battery and the charging stage. When first activated, the IQ4 will read the number of cells in the battery and indicate the voltage of the battery through a number of flashes.

6 flashes = 12 volt battery
12 flashes = 24 volt battery
18 flashes = 36 volt battery
24 flashes = 48 volt battery

After reading the battery, the IQ4 will initiate either a Bulk Charge phase or Float Charge phase depending on the battery's charge status. When the IQ4 is in the Bulk Charge mode, the green LED indicator will flash rapidly. When the Bulk Charge is complete, the IQ4 begins the Absorption Charge and the LED indicator will flash at a slower rate. When the battery charging is complete and the IQ4 begins the Float Charge, the LED will remain lit and no longer flash. If, when first activated, the battery is not in need of charging, the IQ4 will immediately begin the Float charge phase and the LED will be remain lit after it has counted the battery cells.

☐ **Reduced Charge Times**
The Bulk Stage allows the batteries to be charged from the full rated output of the APS Power Supply. During this stage the batteries are recharged quickly to reduce charge times.

☐ **Weekly Equalization for Longer Battery Life**
If the batteries have not received a "smart charge" during a seven-day period, the IQ Controller will switch the APS Power Supply into a pre-programmed equalization stage to top off the batteries, dissolving any sulfate layer on the battery's internal plates and avoiding stratification.

☐ **Charging Voltages**
The charging voltages used to charge the battery during the three stages differ depending on the voltage of the battery being charged. If you are interested in knowing the various voltages, they are easy to calculate. Follow these simple steps:

1) Determine the number of cells your battery has by counting the flashes on the IQ4 when first activated (1 flash = 1 cell)

2) Multiply the number of cells by the appropriate voltage for the individual charging stage. Use the table below for reference:

Charging Phase	Voltage Charge per Cell
Bulk Charge	2.46
Absorption Charge	2.36
Float Charge	2.26

Example: A 12V battery (6 cells) will Bulk Charge at 14.76V (6 x 2.46).

Installation Instructions Available at www.cascadeaudio.com

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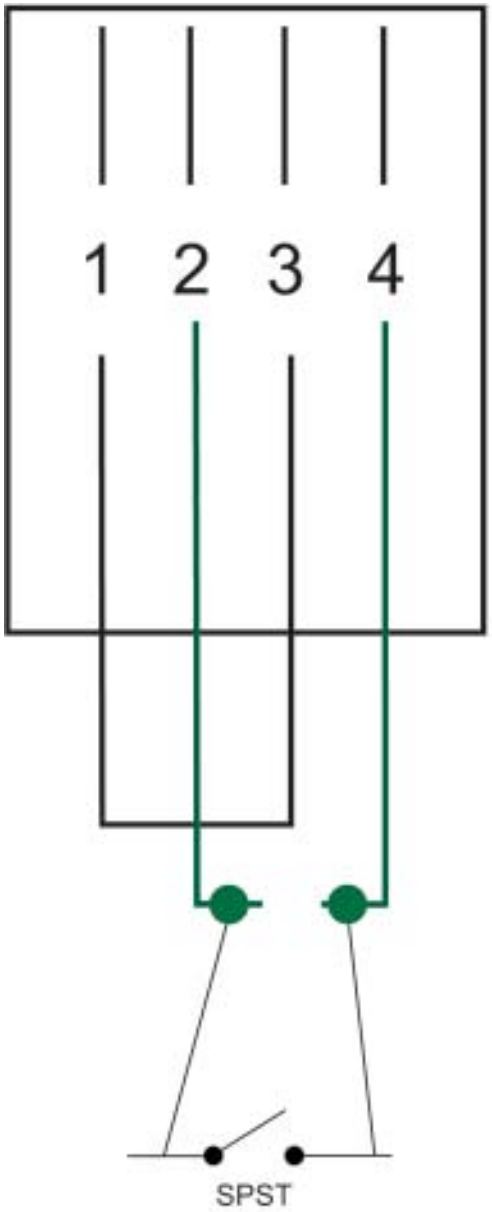
Most APS Power Supplies are available with the IQ Smart Charger already internally integrated within the unit. External IQ models can be installed by simply plugging the IQ cord into the Dual Voltage jack located on the top of the APS Models. The IQ circuitry is then automatically engaged.

INSTRUCTIONS FOR INSTALLATION OF REMOTE TOGGLE SWITCH



Internal Smart Charge Operation:

When the plug is installed with the connection closed (factory shipped), the smart charge interface is enabled. Removing the plug from the socket disables the smart charge interface.

Installation of Toggle Switch:

The connection from pin 2 to pin 4 needs to be interrupted. (The color of the wire may not be green)

Install a SPST (Single Pole Single Throw) switch in line. There is virtually no current present (TTL Level <5 volts)

When pins 2 and 4 are connected to the SPST toggle, the unit functions as follows:

Switch open (no connection between pin 2 & 4)
"Rock & Roll" mode - The unit functions as a power supply.

Switch closed (connection between pins 2 & 4)
"Maintenance" mode - The unit will act as a multi stage charger.

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