

Communication Options for the APC AV S20 and Home Automation Networks

Abstract

The APC S Type AV Power Conditioner with Battery Backup is an all-in-one power protection unit that is well suited for high-performance home automation networks and AV systems. This note presents multiple strategies for communication between the APC AV S20 (S20BLK) and home automation networks.

Introduction

The quality and availability of power for high-end AV and home automation systems is just as relevant and important as it is for any computer system or network. Poor power can have a noticeable impact on sound and video quality. Component power supplies and electrical circuits can be stressed or even destroyed outright. Power outages can result in the loss of system presets and in missed DVR recordings. The presence of hard drives and network connectivity makes AV systems even more susceptible to damage or lowered performance as the result of power disturbances. Blackouts can make home security and automation systems inoperable. With premium surge protection, isolated noise filtering, voltage regulation and pure sine wave battery backup, the S20BLK is an all-in-one power protection solution.



In addition to providing power protection, the APC S20 Power Conditioner with Battery Backup can be remotely managed and monitored via a variety of methods. This remote control can help avoid costly and time-consuming service calls. Installers and users can use the Internet to remotely reboot hung equipment, adjust various unit parameters, initiate self-tests and monitor changing unit and power conditions. Further, installers can program their home automation networks to respond to the S20's built-in Environmental Monitoring Unit which measures ambient temperature and humidity. Methods of communication are explained in detail in the following paragraphs.

Communications and Management Options

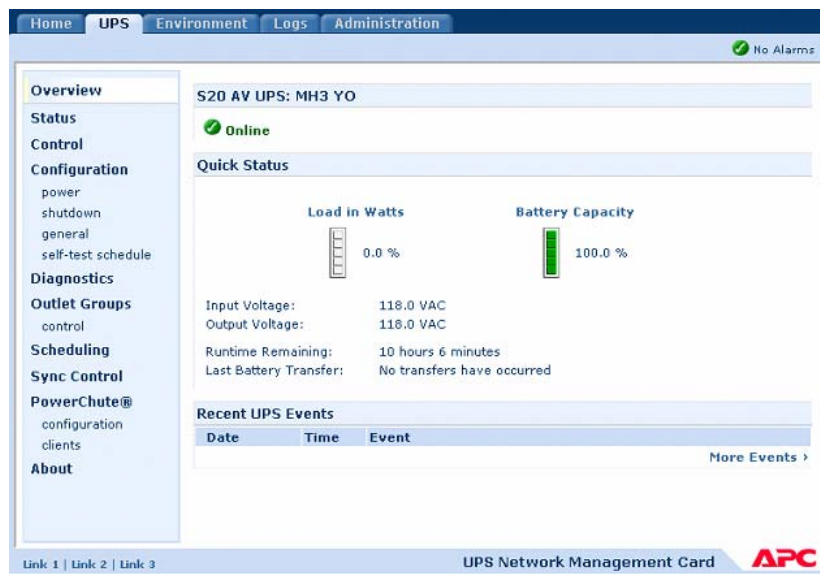
The ability to communicate with the S20BLK is an essential component to complete power protection of AV and home automation systems. A universal serial bus (USB) port, Network Management Card (embedded Web server), and RS-232 port provide multiple methods for monitoring and managing the S20BLK, and the equipment connected to it.

Universal Serial Bus

The USB port is located on the rear panel of the S20BLK, and is used to communicate with APC PowerChute® Personal Edition software, which is easy to use, safe system shutdown software, with sophisticated power management functions. When installed on a Microsoft Windows or Mac desktop, PowerChute Personal Edition will automatically save open files, and gracefully shut down the operating system in the event of an extended power outage. Through PowerChute Personal Edition, operating parameters such as unit sensitivity and voltage transfer points can be configured, and battery and power conditions can be monitored. The PowerChute Personal Edition CD-ROM and necessary USB cable are supplied with the S20BLK. Additional information on PowerChute Personal Edition can be found on the APC web site at the following URL:
<http://apc.com/products/family/index.cfm?id=129>

Network Management Card

The embedded Network Management Card in the S20BLK allows it to connect to any Ethernet network. The Ethernet port is located on the rear panel, and connecting to it enables users to remotely monitor and manage the S20BLK from any Web browser. The Network Management Card interface, shown in Figure 1 below, displays information such as input power and UPS battery capacity, and also provides diagnostic and control capabilities. For example, the outlets on the S20BLK can be powered OFF and ON in the event of a hung device that needs to be rebooted.



Additional information on the APC Network Management Card can be found on the APC web site at the following URL:
<http://apc.com/products/family/index.cfm?id=98>

RS-232

A DB-9 RS-232 port is also located on the S20BLK rear panel, and can be used to communicate with the S20BLK via a proprietary protocol. The UPS-Link Communications Protocol is an ASCII-based control language that makes possible a full RS-232 communications path between the S20BLK and a host computer terminal. The control language is made up of commands and alert messages specific to APC AV UPSs and includes UPS Control Commands, UPS Status Inquiry Commands, UPS Power Inquiry Commands, and UPS Alert Messages.

Those installers who wish to integrate the UPS Link protocol directly into a home automation system should first contact the home automation network vendor, as some have developed their own modules to integrate the S20BLK into their systems. If there is no existing module integration, APC can license the UPS Link protocol. To obtain an application to license the protocol, contact APC Technical Support at 800-800-4272 or www.apc.com/support.

Conclusion

The ability to communicate with the APC AV S20 completes an already comprehensive power protection solution for AV and home automation networks, providing necessary management and monitoring tools. In addition, the multiple methods of communication facilitate flexible installation into almost any environment.