DATASHEET

Crestron to APC Switched Rack PDU Interface

Revision: 1.00
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Summary

This datasheet relates to Ultamation's APC Switched Rack PDU interface module for Crestron control systems. It provides the essential information for integration between the APC PDU and the Crestron control processor, and for programming of the module with a host Crestron program.

This module is designed for use with the APC "AP" series of switched rack PDU. It was created with, and tested with, the APC AP7921 PDU.

Installation Notes

The PDU communicates to the Crestron system directly via an IP connection. No special wiring or configuration is required outside of that needed for a standalone APC PDU installation.

Equipment Setup

Connect the APC equipment as per the APC PDU installation instructions. Specific APC installation instructions can be obtained from:

http://www.apc.com/

Programming Notes

Each of the module files should be placed either in the host program's project folder, or to make the APC PDU interface available to all Crestron programs, in the SIMPL Windows installation's User Macro (for .umc files) and User SIMPL+ (for .usp and .ush files) directories. This pdf should be placed in both directories for SIMPL's F1 help function to work properly.

The interface consists of a single SIMPL module, and a single SIMPL+ module. The SIMPL module is a wrapper for the SIMPL+ module, to allow for a more intuitive signal layout. It is not recommended to use the SIMPL+ module alone.

The APC Switched Rack PDU Module

This module handles all of the IP communications to the APC PDU, including managing connecting and disconnecting from the PDU.

1. Put the username for logging into the PDU via *telnet* into the "username" parameter.
2. Put the password for logging into the PDU via *telnet* into the "password" parameter.
3. Connect the "Tx$", "Rx$", "Connect" and "Connect_Status#" signals to the equivalent signals on a TCP/IP Client in your program. The connection port is 23.

WARNING: Do not place a "1" on the "Connect" signal of the TCP/IP Client. The APC Switched Rack PDUs only allow a single connection at any one time, and will block subsequent connections from other hosts. Leaving the Crestron system connected to the PDU indefinitely will prevent the use of the APC web interface for configuration and monitoring of the PDU.

As such, polling the outlet status and power stats should be done at a very conservative rate, and only when the results of those poll requests are necessary to (for example) update the currently viewed page on a touchpanel.

Version Information

This module has been compiled and tested under:

3-Series FW:	1.012.0023
SIMPL Windows:	4.02.65
Device DB:	66.02.001.00
CresDB:	51.05.007.00
Symbol Library:	948
SIMPL+:	4.02.26
Sample Program:	APC Switched Rack PDU Demo PRO3 (Ultamation).smw

The Protocol Receiver Module

Get_Outlet_Status	Rising edge. Gets the on/off state of all outlets (populating the "State[n]" signals) and also populates all "Outlet_Name[n]" signals.

Get_Power_Stats	Rising Edge. Requests power usage stats from the PDU.
On[n]	Rising Edge. Switches on the outlet at index "n". Immediately updates the "State[n]" feedback signal.
Off[n]	Rising Edge. Switches off the outlet at index "n". Immediately updates the "State[n]" feedback signal.
Reboot[n]	Rising Edge. Reboots the outlet at index "n", switching it off for the duration defined during the PDU setup process. Does not update the "State[n]" feedback signal.
Connection_Status#	Connect to "status" on the TCP/IP client.
Rx$	Connect to "rx$" on the TCP/IP client.
State[n]	Reflects the current power state of the outlet at index "n". Updated by triggering an "On", "Off" or "Get_Outlet_Status" command.
Outlet_Name[n]$	Reflects the current "name" of the outlet, as defined in the PDU configuration. Updated when "Get_Outlet_Status" is triggered.
Volt_Amps#	The current power usage of the PDU, in Volt Amps.
Watts#	The current power usage of the PDU, in Watts.
Amps#	The current power usage of *phase 1* in Amps, multiplied by 10.
Connect	Connect to the "connect" signal on the TCP/IP client.
Tx$	Connect to the "tx$" signal on the TCP/IP client.

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For this purpose, Ultamation define a PROJECT as a single "conceptual" system as viewed by an end-user (not necessarily the commissioning "client").

Examples:
A large residential system with multiple processors and touch panel types is a SINGLE PROJECT.
A common system, rolled out across many apartments in a Multi-Dwelling-Unit project would be considered as MULTIPLE PROJECTS.
A generic system, deployed to multiple teaching rooms in an educational establishment would be considered as MULTIPLE PROJECTS.

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