

**Partner: Middle Atlantic**  
**Model: RackLink Premium**  
**Device Type: Power Distribution**



**GENERAL INFORMATION**

<b>SIMPLWINDOWS NAME:</b>	Middle Atlantic RackLink Premium v1.2
<b>CATEGORY:</b>	Power Distribution
<b>VERSION:</b>	1.2
<b>SUMMARY:</b>	This module controls communication with a Middle Atlantic RackLink Premium PDU device via IP using the REST API.
<b>GENERAL NOTES:</b>	<ul style="list-style-type: none"> <li>This module acts as the primary communication link between the Crestron system and a single RackLink Premium PDU. Up to 10 of these modules can be included in a single program, each allowing control of a different PDU.</li> <li>Different models exist within the RackLink Premium family. This module will control any of them provided they adhere to the REST API. The module supports a model with a maximum of 16 outlets and 16 dry contacts. Dry contacts are available via external/add-on sensors.</li> <li>Temperature reading is done via an external sensor. Multiple sensors can potentially be attached to the PDU, however the module will only read from the first temperature sensor it finds.</li> <li>Multiple polling enable joins have been included in the module to allow for querying different aspects of the PDU. Some polls, such as outlet information, may contain multiple different queries for each outlet. Depending on the number of outlets, a single poll cycle may contain dozens to over a hundred individual queries to the device and, as such, can be very data and time intensive. It is <b>HIGHLY</b> recommended to only enable the polls that are required for your particular program and to note that, depending on which polls are enabled, feedback from the poll may take some time to query everything and update all signals. As an example, a PDU with 8 outlets and 2 dry contacts was tested during development. With all polls enabled, each cycle took over a minute to complete and refresh. If you are working with a device that has the maximum 16 outlets and 16 dry contacts and have all polls enabled, expect this time to be significantly higher.</li> <li>The polling rate (i.e. the time between the last query in the poll cycle and the first query in the next poll cycle) is always 15 seconds.</li> <li>The module will automatically initialize when the program starts up (or manually when the Reinit signal is triggered). Initialization consists of querying the device for all status information required for proper module operation. Depending on the number of outlets, dry contacts and log entries on the device, this process can be quite time consuming so it is normal for the initialization process to take several minutes.</li> </ul>
<b>CRESTRON HARDWARE REQUIRED:</b>	Crestron 3-Series processor <b>only</b> .
<b>SETUP OF CRESTRON HARDWARE:</b>	Crestron processor and PDU(s) being controlled must be able to communicate directly via IP.
<b>VENDOR FIRMWARE:</b>	N/A



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VENDOR SETUP:

N/A



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**PARAMETER:**

<b>Command_Processor</b>	Setting to indicate the instance of a Middle Atlantic RackLink Premium module. Up to 10 of these modules can be included in a single program, each allowing control of a different PDU.
<b>IP_Address</b>	Setting to indicate the IP Address of the PDU to control.
<b>Username</b>	Setting to indicate the Username for the PDU to control.
<b>Password</b>	Setting to indicate the Password for the PDU to control.
<b>Log_Entries_Per_Page</b>	Setting to indicate the number of log entries at a time the module will send back to the program. This value should correlate to the number of items that make up the list on the touchpanel (Min: 1   Max: 10).

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**CONTROL:**

<b>Reinitialize</b>	D	Pulse to re-establish communication with the REST API and retrieve all pertinent information from the PDU for proper operation of the module This signal is provided as a convenience should it be desired to reinitialize at any point. Initialization will automatically occur when the program starts.
<b>Enable_Debug</b>	D	Set high to enable internal SIMPL# trace messages to be printed in Debugger. These messages may be useful while debugging to see what processes are occurring within the module. Note it is <u>highly recommended</u> to leave this signal low unless actively debugging as it causes additional and unnecessary traffic for normal operation.
<b>Enable_Polling_PDU</b>	D	Set high to enable polling of PDU status information.
<b>Enable_Polling_Outlets_State</b>	D	Set high to enable polling for the power state of every outlet.
<b>Enable_Polling_Outlets_Info</b>	D	Set high to enable polling for status information for every outlet.
<b>Enable_Polling_Dry_Contacts</b>	D	Set high to enable polling for the state of every dry contact.
<b>Enable_Polling_IO_Contacts</b>	D	Set high to enable polling for the state of every IO contact.
<b>Select_Outlet_[1 – 16]</b>	D	Pulse to toggle the selection of an outlet. The internal SIMPL# program will keep track of all currently selected outlets and provide feedback on all currently selected outlets accordingly.
<b>Outlet_Power_On_[1 – 16]</b>	D	Pulse to set the power on for a specific outlet.
<b>Outlet_Power_On_Selected</b>	D	Pulse to set the power on for all currently selected outlets. Outlets will be powered on in sequential order starting at the lowest number outlet selected.
<b>Outlet_Power_Off_[1 – 16]</b>	D	Pulse to set the power off for a specific outlet.
<b>Outlet_Power_Off_Selected</b>	D	Pulse to set the power off for all currently selected outlets. Outlets will be powered off in reverse order starting with the highest number outlet selected.
<b>Outlet_Power_Cycle_[1 – 16]</b>	D	Pulse to cycle the power for a specific outlet.
<b>Outlet_Power_Cycle_Selected</b>	D	Pulse to cycle the power for all currently selected outlets. Outlets will be power cycled in sequential order starting at the lowest number outlet selected.

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**CONTROL *continued:***

Select_Dry_Contact_[1 – 16]	D	Pulse to toggle the selection of a dry contact. The internal SIMPL# program will keep track of all currently selected dry contacts and provide feedback on all currently selected dry contacts accordingly.
Select_All_Dry_Contacts	D	Pulse to select all dry contacts. The internal SIMPL# program will keep track of all currently selected dry contacts and provide feedback on all currently selected dry contacts accordingly.
Clear_All_Dry_Contacts	D	Pulse to clear the selection of all dry contacts. The internal SIMPL# program will keep track of all currently selected dry contacts and provide feedback on all currently selected dry contacts accordingly.
Dry_Contact_State_On_[1 – 16]	D	Pulse to set the state on for a specific dry contact.
Dry_Contact_State_On_Selected	D	Pulse to set the state on for all currently selected dry contacts. Dry contacts will be powered on in sequential order starting at the lowest number dry contact selected.
Dry_Contact_State_Off_[1 – 16]	D	Pulse to set the state off for a specific dry contact.
Dry_Contact_State_Off_Selected	D	Pulse to set the state off for all currently selected dry contacts. Dry contacts will be powered on in sequential order starting at the lowest number dry contact selected.
Dry_Contact_State_Cycle_[1 – 16]	D	Pulse to cycle the state for a specific dry contact.
Dry_Contact_State_Cycle_Selected	D	Pulse to cycle the state for all currently selected dry contacts. Dry contacts will be powered on in sequential order starting at the lowest number dry contact selected.
Log_Page_Top	D	Pulse to request the first page of log entries.
Log_Page_Up	D	Pulse to request the previous page of log entries.
Log_Page_Down	D	Pulse to request the next page of log entries.
Log_Page_Bottom	D	Pulse to request the last page of log entries.
Refresh_Log	D	Pulse to re-request and refresh the list of log entries. Note: this will be done automatically during initial module initialization at program start.
Clear_Log	D	Pulse to clear the log of all entries and refresh the list.

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**FEEDBACK:**

Is_Communicating_FB	D	High to indicate that communication has been established with the REST API and the module has received at least one response to a query. Once communication has been established, the module will attempt to initialize automatically.
Is_Initialized_FB	D	High to indicate that the module has received all necessary information from the REST API that it needs to function properly.
Polling_PDU_Is_Active_FB	D	High to indicate the module is set to poll for PDU status information.
Polling_Outlets_State_Is_Active_FB	D	High to indicate the module is set to poll for outlet power state.
Polling_Outlets_Info_Is_Active_FB	D	High to indicate the module is set to poll for outlet status information.
Polling_Dry_Contacts_Is_Active_FB	D	High to indicate the module is set to poll for dry contact state.
Polling_IO_Contacts_Is_Active_FB	D	High to indicate the module is set to poll for IO contact state.
PDU_Part_Number_FB	S	Serial string indicating the part number for the PDU.
PDU_IP_Address_FB	S	Serial string indicating the IP address for the PDU.
PDU_MAC_Address_FB	S	Serial string indicating the MAC address for the PDU.
PDU_Rating_Voltage_FB	S	Serial string indicating the voltage rating for the PDU.
PDU_Rating_Current_FB	S	Serial string indicating the current rating for the PDU.
PDU_Rating_Frequency_FB	S	Serial string indicating the frequency rating for the PDU.
PDU_Rating_Power_FB	S	Serial string indicating the power rating for the PDU.
PDU_Current_RMS_Voltage_FB	S	Serial string indicating the current RMS voltage for the PDU.
PDU_Current_RMS_Load_FB	S	Serial string indicating the current RMS load for the PDU.
PDU_Current_Temperature_FB	S	Serial string indicating the current temperature for the PDU.
PDU_Current_Humidity_FB	S	Serial string indicating the current humidity for the PDU.
PDU_Current_Wattage_FB	S	Serial string indicating the current wattage for the PDU.
PDU_Current_Power_Factor_FB	S	Serial string indicating the current power factor for the PDU.
PDU_Threshold_Voltage_Low_FB	S	Serial string indicating the low limit of the voltage threshold for the PDU.



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**FEEDBACK** *continued:*

PDU_Threshold_Voltage_High_FB	S	Serial string indicating the high limit of the voltage threshold for the PDU.
PDU_Threshold_Current_Low_FB	S	Serial string indicating the low limit of the current threshold for the PDU.
PDU_Threshold_Current_High_FB	S	Serial string indicating the high limit of the current threshold for the PDU.
PDU_Threshold_Temperature_Low_FB	S	Serial string indicating the low limit of the temperature threshold for the PDU.
PDU_Threshold_Temperature_High_FB	S	Serial string indicating the high limit of the temperature threshold for the PDU.
PDU_Threshold_Humidity_Low_FB	S	Serial string indicating the low limit of the humidity threshold for the PDU.
PDU_Threshold_Humidity_High_FB	S	Serial string indicating the high limit of the humidity threshold for the PDU.
Outlet_Is_Selected_[1 – 16]_FB	D	High to indicate a specific outlet has been selected.
Outlet_Power_[1 – 16]_FB	D	High to indicate a specific outlet is on.
Outlet_Count_FB	A	Value indicating the total number of outlets on the PDU.
Outlet_Name_[1 – 16]_FB	S	Serial string indicating the name of a specific outlet.
Outlet_Current_RMS_Voltage_[1 – 16]_FB	S	Serial string indicating the current RMS voltage for a specific outlet.
Outlet_Current_RMS_Load_[1 – 16]_FB	S	Serial string indicating the current RMS load for a specific outlet.
Outlet_Current_Wattage_[1 – 16]_FB	S	Serial string indicating the current wattage for a specific outlet.
Outlet_Current_Power_Factor_[1 – 16]_FB	S	Serial string indicating the current temperature for a specific outlet.
Dry_Contact_Is_Selected_[1 – 16]_FB	D	High to indicate a specific dry contact has been selected.
Dry_Contact_State_[1 – 16]_FB	D	High to indicate a specific dry contact is on.
Dry_Contact_Count_FB	A	Value indicating the total number of dry contacts on the PDU.
Dry_Contact_Name_[1 – 16]_FB	S	Serial string indicating the name of a specific dry contact.
IO_Contact_State_[1 – 16]_FB	D	High to indicate a specific IO contact is on.
IO_Contact_Count_FB	A	Value indicating the total number of IO contacts on the PDU.



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**FEEDBACK** *continued:*

IO_Contact_Name_[1 – 16]_FB	S	Serial string indicating the name of a specific IO contact.
Log_Entry_Count_FB	A	Value indicating the total number of log entries.
Log_Current_Page_FB	A	Value indicating the current page of log entries. This value is automatically calculated based on the value of the Log_Entries_Per_Page parameter.
Log_Total_Pages_FB	A	Value indicating the total pages of log entries. This value is automatically calculated based on the value of the Log_Entries_Per_Page parameter.
Log_Entry_Number_[1 – 10]_FB	S	Serial string indicating the number/ID for the log at an index in the list. The data on these signals will automatically change as the log list is paged through.
Log_Entry_Category_[1 – 10]_FB	S	Serial string indicating the category for the log at an index in the list. The data on these signals will automatically change as the log list is paged through.
Log_Entry_Date_[1 – 10]_FB	S	Serial string indicating the date for the log at an index in the list. The data on these signals will automatically change as the log list is paged through.
Log_Entry_Time_[1 – 10]_FB	S	Serial string indicating the time for the log at an index in the list. The data on these signals will automatically change as the log list is paged through.
Log_Entry_Message_[1 – 10]_FB	S	Serial string indicating the message for the log at an index in the list. The data on these signals will automatically change as the log list is paged through.





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## TESTING:

<b>OPS USED FOR TESTING:</b>	CP3: 1.8001.4666.20418
<b>SIMPL WINDOWS USED FOR TESTING:</b>	4.3000.01
<b>CRES DB USED FOR TESTING:</b>	226.0500.003.00
<b>DEVICE DATABASE:</b>	200.36000.001.00
<b>SYMBOL LIBRARY USED FOR TESTING:</b>	1207
<b>SAMPLE PROGRAM:</b>	Middle Atlantic RackLink Premium v1.2 Demo IP CP3
<b>REVISION HISTORY:</b>	v1.0 – Initial Release v1.1 – Optimized data received v1.2 – Humidity status pins, IO contact state polling, and IO control status pins added.