Product Features

Congratulations on selecting the Ethernet Power Controller III, a surge-suppressed rack-mount power switch used for remote control, automatic reboot and power monitoring. Features include:

Simple Web Interface
The internal web server is accessible from any standard web browser. Simply enter an IP address, and the controller may be configured and controlled via the web.

Auto-Ping Reboot
This powerful feature automatically monitors a remote IP address. If a server, router, or other peripheral goes down, the controller will automatically reboot it, without user intervention.

16 Switched Outlets + 2 Unswitched Outlets
Eight switched circuits are provided, each with a pair of outlets. Each pair of outlets can be controlled independently. The outlets are spaced for large adapters and plugs. Two unswitched and unmetered circuits are provided for “always on” devices.

Local Control, Manual Lockout and E-Stop
Front panel controls are provided to manually override software control. Each outlet can be switched on or off manually, or locked to prevent remote control. An E-Stop switch disables all switched outlets for quick shutdown in emergencies. A 2x16 LCD displays status for each relay. Display operation is customizable using a simple scripting language.

Password Security
Multi-user password security is provided to limit access to the power controller. The administrator selects which outlets each user controls.

Sequenced “On Timer”
A programmable delay timer allows outlets to be switched on in sequence, rather than simultaneously. Most devices draw more power when they are initially switched on. Using this timer, more equipment can be attached to a single circuit without overloading. Programmable scripts can also be used to create customized power-up and power-down sequences with variable timing.

Redundant Power Supply
Dual, redundant switching power supplies are included. The loss of either main power circuit will not affect the controller itself. Separate A/B power circuits are provided for redundancy.

MOV Surge Suppression
Dual 3600J metal oxide varistors clamp power surges and spikes, protecting all attached devices.

Scripting Language, Syslog, and Utilities
A scripting language can be used to create custom control and reboot sequences, schedule periodic reboots, customize the LCD, and control serial devices. Both internal and external system logs are provided. Windows utilities send status notifications, warnings, and power bills via email.

Field Upgradeable Firmware
Firmware is field upgradeable via Ethernet using the web UI or a command line utility.

Low Power Consumption
Lowest power consumption in the industry for an 8-channel product.
Standard Package Contents

1. Ethernet Power Controller III
2. Dual Power Cords – Permanently attached per UL

Please contact the shipping carrier immediately if your package appears opened or damaged in transit. Call DLI at (408) 330-5599 for tech support, service, replacement batteries and hardware upgrades.

Important Factory Defaults

DEFAULT IP ADDRESS
The factory default is 192.168.0.100

DEFAULT ADMINISTRATOR LOGIN
User name: admin (lower case)
Password: 1234

To reset the IP address and admin login to factory defaults, press the reset button under the Ethernet jack – Gently!

Note: Reset-to-defaults sets the admin login and IP address, but it doesn’t affect outlet names, links, and stored scripts. Auto-Ping and auto-start of custom scripts is disabled.

Quick Setup

Use these shortcuts if you are an experienced installer. If this is your first time, please skim the entire manual first.

1. Remove the power controller from its shipping carton. Save the carton and packing for future hardware upgrade.
2. Attach the power cords to two protected power sources with a capacity of at least 15 amperes each.
3. Attach the cable from the controller to a port on your LAN. If the default IP address of http://192.168.0.100 isn’t compatible with your network, a crossover cable may help during initial configuration. Switch power on. If you are connected to a switch, you may need to cycle power to the switch to establish a connection.
4. Ping the default address: http://192.168.0.100 to confirm that a reliable network connection is established. If you don’t receive a response, use a crossover cable and see the “Windows IP setup.” Section below.
5. Log in to the power controller using the default user name admin and the password 1234 “admin” must be entered in lower case.
6. Click on the Settings link to reach the configuration page.
7. Configure the switch as described below. After each change, click Submit and wait for the page to refresh before continuing.
8. The front panel keypad can be used to manually switch circuits on or off. To lock an outlet in the on or off position, hold the O or 1 key down for three seconds. Locked outlets can’t be controlled over the web interface.

Tip: A three-bulb electrical safety-tester is handy for configuring the controller before attaching your equipment.

Windows IP Setup

If your default Windows settings won’t access the default IP, use a crossover cable and follow these steps to add a compatible IP such as 192.168.0.1 Before adding an IP, close other programs and browsers.

Windows 2000, 2003, XP
Go to Network Settings –> Local Area Network. Use the keyboard shortcut <Windows-R> - type ncpa.cpl and click OK. Right click on LAN Connection and choose Properties. Highlight Internet Protocol and click Properties. Click Advanced. Under the IP Address settings, click Add. Enter a new compatible IP, such as 192.168.0.1, and a subnet mask of 255.255.255.0. Press Add.
Basic Operation

After power-up, the controller performs a sequence of self-tests to ensure reliability. The static IP on the Settings page is used.

The controller may then be operated via a web browser. To access the controller, simply enter the IP address in the URL field of your web browser. The default is http://192.168.0.100

Home (Outlet Control) Page

To access the home page, first enter the IP address in web browser URL field, then log in. User admin has access to all features. Other users have limited access to outlets as assigned by the administrator. When configuring the power controller for the first time, use the default admin username and 1234 password. The home page contains twelve links to other pages. The first eight are fixed internal links:

Outlet Control
Clicking “Outlet Control” links to the home page used for manually switching outlets on and off. Access to specific outlets is determined by your login.
Help
The Help link displays the latest online manual. Since features are subject to change without notice, this manual may not be an exact match for your controller.

Logout
Logout ends the web session. A login is required to reconnect.

Programmable Web Links
Four additional user-defined web links are provided on the outlet control page. Factory defaults are Manual, FAQ, etc. You may change the name and destination URL for these links on the Settings page. These links are convenient for connecting to other power controllers or to remote sites.

Switching Outlets on and Off
The outlet control page lets you control any pair of outlets (except the always-on pair). A master setting also allows users (with security access) to switch all outlets on or off.

To switch an outlet on or off, simply click to the right of the outlet name or number. Switching is immediate.

You may also Cycle a device which is connected to the controller. This feature is useful for rebooting Ethernet devices which may interrupt the web link to the controller. Clicking Cycle switches power off, waits a few seconds (as specified on the setup page), and then switches power back on. This resets the attached device. You may also cycle all outlets using the Cycle All Outlets button on the bottom of the page.

Depending on your web browser settings, you may need to click the Refresh button to update the on-screen status display after changing settings. The screen refresh rate is configured on the Setup page.

Controller and Outlet Names
Use the controller name fields to assign a Controller Name to the power controller itself. Examples are “Server Rack 4 PDU” or “Reactor Coolant Pumps”. The Controller Name field appears on the top of the home page. Assign a separate name to each outlet, such as “Customer 4” or “Email Server” to make identification of each circuit simple.

Power-On Sequence Delay
When a time value is entered in the “All ON Sequence Delay” field, the power controller will pause for a period of time before switching each outlet on in sequence. This delay helps prevent the power surges and blown circuit breakers which can occur when multiple devices are switched on simultaneously. A delay of 60 seconds is suggested for server applications. You may also enter a screen refresh delay in this section. If “Enable screen refresh” is checked, and a delay value is entered, your browser should periodically update the status screen.

Wrong Password Lockout
After three failed login attempts, the can disable access for a selected period of time (0-60 Minutes).

Power Loss Recovery Modes
The power loss recovery mode setting has three settings which take effect after a power failure:

1. You can turn all outlets off (all systems will be switched off until manually turned on later) by checking the first box.
2. You can automatically turn all outlets on using the “All ON sequence delay” described above. Check the second option to do this.
3. You can return to the same outlet settings that were used prior to the power loss. The “All ON sequence delay” will also be used in this instance. Check the third option for ALL ON.

Note: If you have written a script and enabled scripting, the script will start automatically on power up at LINE 1.
User Defined Links
You may link to other power controllers, your own web pages, or remote web sites by entering up to four URLs and descriptions in the Setup page. For example, enter “Site Two Power Controller” in the description field with a URL of “192.168.0.250” These links appear on the home page.

Access Control
The administrator can restrict user permissions to certain outlets. To set permissions, login as admin, then create a permissions matrix by entering user names on the left and checking permitted outlets to the right of each user name.

Network Settings
A valid fixed IP address, network mask, gateway, and subnet mask must be entered in this section.
When changing IPs, you may need to restart the unit and your network switch to validate the new IP on an “auto-configuring” switch port. Be sure to record the new IP address.
Use the Protect button to lock the network settings. Once protected, the network settings cannot be changed except by pressing the physical reset button on the front of the unit.

Power Factor
The administrator can use this section to adjust the power factor (PF) used to calculate energy usage. This allows the controller to more accurately total power consumption for reactive loads, such as motors or power supplies which are not power factor corrected. A separate PF may be entered for each bus. The default power factor is 1 (100%).

Auto Ping Page
AutoPing Operation and Settings
AutoPing is an automatic system for rebooting IP equipment without human intervention. To use AutoPing, first add an IP address. Next, link that IP address to one or more outlets. Timing settings must also be considered.

Add IP Address to Auto-Ping
Use this option to specify the address of an IP device you wish to monitor. After entering the IP address, the settings page will refresh and you can select the outlets associated with this address. Use the checkboxes in the AutoPing section to correlate the IP address to one or more outlets. If communications to the IP address is lost, these outlets will be rebooted. Four parameters are used for AutoPing operation:

Time between pings
This is the time between each “ping” check of the IP address. 60 seconds should be useful for most applications.

Ping failures before reboot
This sets the number of failed communications attempts that must be sequentially detected before a power cycle. For example, when set to 5, the target system must fail to respond 5 times in a row before it is rebooted. Since occasional network timeouts and packet loss can occur during normal Ethernet operation, a number between 5 and 10 pings is suggested.

Times to Attempt Reboot
If you have an unreliable target device, limit the number of times it will be rebooted by entering that value here. For example, entering 5 will reboot your server up to 5 times before giving up.

Device Reboot Delay
After power cycling to reboot a device, a waiting period will occur before the IP address is re-checked by AutoPing. This delay allows the device time to reboot. Most devices take some time to reboot. Windows and Linux servers can force automatic file system checks which may take several minutes to complete. To allow for startup delays, enter a time delay in the Device Reboot Delay period. For example, a reasonable value for a typical server might be 10 minutes (600 seconds). Entering 600 would cause the power controller to start checking the server for normal operation 10 minutes after reboot.
Serial Port Support

Two serial ports are provided.

**Port 1** is available on the front panel and uses the IBM standard pinout: Pin 2=RXD, Pin 3=TXD, Pin 5=Ground.

**Port 2** is an internal port used for custom upgrades. The scripting utility may be used in versions 1.4.3 and later to control either port. Firmware versions 1.5.0 and later support both scripting and remote web terminal access to both ports.

Voltage / Current Monitoring

The Outlet control page displays separate voltage and current readings for the A and B busses. Each of the four web meters acts independently. The design accuracy of the meters is +/- 5%. The current drawn by the two un-switched always-on outlets is not metered and not included in the total. Always-on outlets may be used for “house power” in datacenter applications. The other outlets may be monitored via the web meters and using the logging utility below.

Power Logging Utility

A Windows based logging utility provides email notifications, graphs and power bills. Learn more and download it free at: [www.digital-loggers.com/pcl.html](http://www.digital-loggers.com/pcl.html)

Emergency Stop Switch

To enable the E-Stop switch, remove the yellow ring under the red button by pulling down on the label. To activate E-Stop Shutdown, press the red button. Rotate the button clockwise to release and restore power.

**WARNING! E-STOP DOES NOT SHUT DOWN THE UNSWITCHED (ALWAYS ON) OUTLETS**

Battery Backup Feature

The web server, LCD, and internal control electronics have rechargeable battery backup. The backup system is designed to keep the power controller running for a few minutes during brief power outages and brown-out. The battery does not provide power to external devices. The battery is located under the removable door on the right side of the faceplate. Connect the battery after applying AC power. Disconnect the battery if the power controller will be unused for a long period of time.

Technical Support

Please register your product. A quick on-line registration gets you free technical support and allows us to inform you when updates and new features become available. To save time, please have a look at the product FAQ page solutions. You may FAX questions to (408) 541-8459 or email: support@digital-loggers.com For phone support, call (408) 330-5599 with the following so we can better serve you:

- The firmware version level installed in the power switch. This information can be found on the lower left corner of the outlet control page.
- A description of the Ethernet devices connected to your unit, for example, a 10/100 PC and crossover cable.
- A copy of your invoice and/or the product serial number.

We Appreciate Your Feedback

At DLI, we listen to customers. Send your suggestions to engineering (at) digital-loggers.com. Since we’re constantly adding and changing features, specifications are subject to change without notice.
Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating input voltage and power consumption</td>
<td>60-240VAC autosensing, 5-15 outlets are UL rated only for 120V use. Idle power 6.2W typical (all outlets off).</td>
</tr>
<tr>
<td>Input frequency</td>
<td>DC-400Hz</td>
</tr>
<tr>
<td>Surge suppressors</td>
<td>Dual MOV, 3600J rating</td>
</tr>
<tr>
<td>Ethernet interface</td>
<td>10/100 autosensing, Static IP, TCP port selectable, 8 pin RJ-45 with internal FCC filtering</td>
</tr>
<tr>
<td>Serial I/O hardware</td>
<td>RS-232, 2 ports, 1 external, supported by scripting utility and web terminal</td>
</tr>
<tr>
<td>Outlets &amp; plugs</td>
<td>18 x outlets NEMA 5-15R, 2 15A plugs, others available custom order</td>
</tr>
<tr>
<td>Password transmission</td>
<td>Encrypted, base 64</td>
</tr>
<tr>
<td>Circuit breakers</td>
<td>2x15A thermal, slow blow, rocker</td>
</tr>
<tr>
<td>Control relays</td>
<td>25A Contact, 10^4 mechanical ops</td>
</tr>
<tr>
<td>Power cords</td>
<td>14AWG low loss stranded, UL SJT FX3C VW-1 150°C rating</td>
</tr>
<tr>
<td>Power fail hold-over time</td>
<td>350ms minimum (all on)</td>
</tr>
<tr>
<td>Current metering</td>
<td>+/-5% or accuracy, 0-20A</td>
</tr>
<tr>
<td>Voltage metering</td>
<td>90-277VAC, 5% accuracy</td>
</tr>
<tr>
<td>Switches &amp; controls</td>
<td>Keypad control selects outlets, On, Off, Cycle (hold to lock/unlock) Processor has reset-to-default button</td>
</tr>
<tr>
<td>Size</td>
<td>19” RETMA rack, 2-U 3.5” height</td>
</tr>
<tr>
<td>Indicators</td>
<td>Power on (8x LEDs), Outlet Status (8x LEDs), Link, Act Audio alert 81dBA at case</td>
</tr>
<tr>
<td>Weight</td>
<td>Bare unit 10.2 lbs, Ship wt. 12.1lbs</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-30º to 17ºF, -34º to 77ºC</td>
</tr>
<tr>
<td>Enclosure material</td>
<td>Cold rolled steel, non flammable, powder coated, plastic fascia only</td>
</tr>
</tbody>
</table>

Limited Five Year Warranty

The terms of this warranty may be legally binding. If you do not agree to the terms listed below, return the product immediately in original unopened condition for a full refund. The purchaser assumes the entire risk as to the results and performance of the unit. DLI warrants this power controller to be free from major defects. No agency, country, or local certifications are included with this unit. It is the responsibility of the user to obtain such certifications if they necessary for the customer’s application. DLI’s entire liability and exclusive remedy as to defective hardware shall be, at DLI’s option, either (a) return of the purchase price or (b) replacement or repair of the hardware that does not meet DLI’s quality control standards and has been returned through proper RMA procedures. DLI’s liability for repair or replacement is to DLI’s customer ONLY. WARRANTY SERVICE DOES NOT INCLUDE SOFTWARE OR HARDWARE UPGRADES. No warranty service will be provided without an original invoice from DLI and an RMA number provided by technical support. RMA material must be shipped prepaid to DLI. RMA numbers are valid for 15 days from date of issue. This warranty does not cover products modified, subjected to rough handling, or used in applications for which they were not originally intended. Batteries are not covered under warranty. Physical damage caused by customer or in transit to DLI is not covered under warranty. No oral advice or verbal warranties made by DLI’s employees, dealers, or distributors shall in any way increase the scope of this warranty. DLI makes no warranty as to merchantability or fitness for any particular purpose. DLI assumes no liability for incidental or consequential damages arising from the use or inability to use this product. This warranty gives you specific legal rights. You may also have other rights that vary from state to state. Since some states do not allow the exclusion of liability for consequential damages, some of the above limitations may not apply to you.

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