

Frequently Asked Questions

eCONNECT® PDUs



Q. The eConnect PDU is available in five functionality levels. What are the differences?

A. The eConnect PDUs are available in Basic, Monitored, Monitored Pro, Switched and Switched Pro models. The table below compares the main features of the PDUs.

Included Feature	Basic	Monitored	Monitored Pro	Switched	Switched Pro
Locking Outlet Configurations	•	•	•	•	•
Universal Tool-less Mounting for Cabinets	•	•	•	•	•
Low-Profile Design	•	•	•	•	•
Use in High Temperature Applications 149°F (65°C) Ready	•	•	•	•	•
Branch/Phase Circuit Breakers	•	•	•	•	•
Branch/Phase Circuit Monitoring (Voltage, Current, Power, Power Factor, Energy)		•	•	•	•
Local Multi-Functional LCD Display		•	•	•	•
Temp/Humidity Sensor Port/Monitoring		•	•	•	•
Second Temp/Humidity Sensor		•	•	•	•
Network Access For Remote Monitoring (IPv4, IPv6)		•	•	•	•
Network Setup From Local Display		•	•	•	•
Built-in Web Interface and GUI		•	•	•	•
IP Consolidation (PDU Linking)		•	•	•	•
Set Alarm Thresholds		•	•	•	•
Forward SNMP Traps (SNMPv1, v2, v3)		•	•	•	•
Email Alarm Notification		•	•	•	•
Event and Data Logging (Alarms, Metrics, Logins, Setup Changes)		•	•	•	•
Monitored Outlets (Voltage, Current, Power, Energy)			•		•
Group Outlets for Current Monitoring			•		•
Switched Outlets				•	•
Cycle Individual Outlets Remotely				•	•
Cycle Multiple Outlets Simultaneously				•	•

Q. What is the power metering accuracy on CPI eConnect PDUs?

A. The power metering accuracy on CPI eConnect PDUs is ±1% for each breaker. Meters are included in Monitored, Monitored Pro, Switched and Switched Pro eConnect PDUs, and all of these PDUs display total voltage, current, power (kW) and power factor on the local display for each breaker. Pro models also meter voltage, current and power (kW) at the outlet level, which can be viewed remotely using the built-in web interface. Additionally, energy (kilowatt-hours) is displayed when using the web interface.

Q. Can PDUs be ordered without breakers?

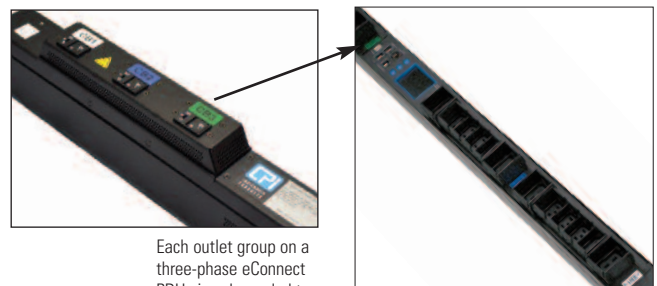
A. No, all eConnect PDUs include UL489 listed circuit breakers.

Q. Can PDUs be ordered with a shorter power cord or a different inlet plug?

A. The standard power cord included on eConnect PDUs is 10'L (3 m). Some models are available with an IEC C20 inlet, allowing the cord to be ordered separately. Other lengths are available when the PDU is ordered as a custom product. Please contact CPI Technical Support for more details.

Q. Can you tell which outlet is fed through each breaker?

A. Yes. On three-phase eConnect PDUs, each breaker crosses two phase busses. The breakers are labeled and color coded. Each outlet group is also color coded to match the connected breaker. Color coding makes it easier to see which outlet is wired through each breaker and to balance loads.



Each outlet group on a three-phase eConnect PDUs is color coded to match breaker



CHATSWORTH PRODUCTS

800-834-4969

techsupport@chatsworth.com
www.chatsworth.com

Frequently Asked Questions

eCONNECT® PDUs

Q. Will the display adjust when the PDU is flipped so that it can be easily read regardless of whether the power cord exits the top or bottom of the cabinet?

A. Yes, there is a user-defined setup option for the display that will rotate the display image 180° so that information is easy to read when the PDU is flipped before mounting into the cabinet.

Q. What information is shown on the local display?

A. The local display provides voltage, current, power (kW) and power factor, as measured at each breaker on the PDU. On single-phase PDUs and split-phase PDUs, there is also a summary of total voltage, current and power (kW) for the PDU. On three-phase units, Line Input Current and a summary of total voltage and power (kW) are shown. On Monitored Pro and Switched Pro models, individual outlet receptacle current can also be displayed. If external sensors are connected to the PDU, the local display also provides temperature and humidity. Alarms are also listed. The local display provides network setup details and can also be used to enter the IP address of the PDU prior to deploying the PDU onto the network.



Q. What is measured by the Monitored and other metered eConnect PDUs?

A. Voltage, current, power (kW), power factor and energy (kilowatt-hours) are measured at each breaker on all Monitored, Monitored Pro, Switched and Switched Pro PDUs. Additionally, voltage, current, power (kW) and energy (kWh) are measured at each outlet on Monitored Pro and Switched Pro models. All values are displayed when using the built-in web interface. Note that Basic models do not include a meter or display any measurements.

Q. What is Secure Array?

A. Secure Array is a feature included with all networked PDUs: Monitored, Monitored Pro, Switched and Switched Pro models. Each of these models includes a Link-in and Link-out port. Up to 32 PDUs can be connected using the Link ports. All PDUs are then accessed from a single Ethernet IP connection. This allows customers to connect to multiple PDUs using a single IP port. A second PDU with an IP address can also be setup within the array of up to 32 units to allow for failover capabilities.



Q. Can linked units be viewed from a single IP address?

A. Yes, linked units are viewed through the Ethernet connection on the primary unit by using that unit's IP address. All linked units are displayed in a tree directory structure at the left side of the PDU's web page screen. Simply click on a unit to view.

Q. If I link units and one loses power, will I still be able to access other units downstream from the PDU that loses power?

A. Yes, the PDU linking feature includes a pass-through connection. You will not be able to view measurements or see alarms for the PDU that loses power, but you will be able to see and access PDUs that are downstream of the PDU that lost power. You can also designate an alarm notification if the connection to a linked PDU is lost.

Frequently Asked Questions

eCONNECT® PDUs

Q. If I link units and the one with IP connection loses power, will I be able to access other units?

A. Yes, you can designate a different PDU as the Alternate. In the event that the Primary PDU loses power, the Alternate will automatically assume the Primary role. You can also designate an alarm notification if the Alternate assumes the Primary role. The Alternate will also need to be connected to the network and use a separate IP connection. You can also manually setup the IP port on another unit that still has power and access the PDUs that way.

Q. What can you setup on the local display, and what must be setup using the built-in web interface?

A. You can enter the IP address (IPv4 or IPv6) for the PDU, the subnet mask and gateway using the local display. This allows your PDU to be setup for your network without the use of a computer. Other programmed features, like the PDU name, outlet and alarm setup and detailed network setup, must be done using the built-in web page.

Q. What is the metering accuracy of the external temperature and humidity sensor?

A. The accuracy of the temperature sensor is ±2%, and the accuracy of the humidity sensor is ±3%.



Q. Does the built-in web interface use a Java applet?

A. No. The PDU includes a built-in web server. A separate Java applet does not need to be installed or activated in your web browser to view the PDU's web pages.

Q. What features are available in the built-in web interface?

A. The eConnect PDUs are available in Basic, Monitored, Monitored Pro, Switched and Switched Pro models. Basic models do not have an Ethernet connection or a built-in web interface, but the other models do. The table below compares the main features of the built-in web interface for the Monitored, Monitored Pro, Switched and Switched Pro PDUs. In general, all models provide remote branch and sensor monitoring and alarms. The Pro models include outlet status and alarms. The Switched models include outlet control.

Included Feature	Monitored	Monitored Pro	Switched	Switched Pro
Password Protected Access	•	•	•	•
Branch Circuit Status (Voltage, Current, Power, Power Factor, Energy)	•	•	•	•
Sensor Status* (Temp. and Humidity)	•	•	•	•
Outlet Status (Voltage, Current, Power, Energy)		•		•
Outlet Group Status (Combined Current)		•		•
Outlet Control (On/Off/Cycle)			•	•
Outlet Group Control (On/Off/Cycle)			•	•
Setup/Configuration				
PDU Settings (name, location, hi/low voltage alarms, warning/critical/low current alarms, alarm interval, log interval, log difference)	•	•	•	•
Environmental Sensor Settings (high/low temperature and humidity alarms, measurement in °F/°C)	•	•	•	•
Network Settings** (TCP/IP configuration for IPv4 and/or IPv6, time servers, web access, console access, SNMP access)	•	•	•	•
PDU Cloning (copy settings to linked PDUs)	•	•	•	•
Monitored Outlet Setup (name, description, hi/low current alarms)		•		•
Switched Outlet Setup (name, description, on/off/cycle, on delay, cycle delay)			•	•
Time and Date Setup**	•	•	•	•
Update Firmware (USB or network)***	•	•	•	•

Notes: *Sensor Status is only reported when an external sensor (P/N 17761-003) is attached to the PDU.

**Network Settings and Time and Date Setup are disabled on linked PDUs.

***Firmware updates cannot be transferred between linked PDUs. Updates are not reversible.

Frequently Asked Questions

eCONNECT® PDUs

Q. How are users notified of alarms?

A. There is an LED on the eConnect PDU above the local display that changes from green to yellow for a warning alarm, and yellow to red for a critical alarm. Alarms are also summarized on the local display. When accessing the unit using the built-in web interface, all alarms are noted with color coding and are summarized on a page tab. When PDUs are linked, all alarms for all linked PDUs are summarized on the tab. Alarms are manually acknowledged (reset) using the built-in web interface. Alarms can also be notified through email or SNMP versions 1, 2 and 3 protocol.

Q. Does the PDU support serial setup?

A. Yes. Monitored, Monitored Pro, Switched and Switched Pro PDUs can be configured using a serial connection, but a proprietary cable and software are required. Order the Serial Setup Cable (P/N 35941-131) from CPI. This cable has an RJ45 connection on the PDU side and a DB9 connection on the computer side. If you do not have a DB9 connection, you will also need to order a USB converter separately. Download the eConnect Serial Communicator software and User's Manual from the CPI website:

<http://www.chatsworth.com/Support-and-Downloads/Downloads/Software/>

Serial setup instructions are covered in the eConnect Serial Communicator User's Manual.

Q. What do the LEDs next to the outlets on Switched and Switched Pro PDUs mean?

A. The LEDs indicate whether the outlet is switched on or off. A blue light indicates on, and an amber (yellow-orange) LED indicates off. It is a good practice to turn outlets off when they are not being used, so the impact of additional power requirements can be considered before adding load to the PDU.

LED, blue light indicates on



Q. On Switched and Switched Pro models, can outlets be switched on/off at the PDU?

A. No, outlets can only be switched on and off through the Ethernet connection using the built-in web page (http) or SNMP, or through the serial connection using the eConnect Serial Communicator software.

Q. What is the power on sequence for outlets when the PDU is initially powered or temporarily loses power?

A. When first powered on, all outlets should remain off until the main control module powers on. Then, all outlets are turned on. The outlet power on sequence takes only a few seconds. Users can set initial power on delays to sequence outlet power and reduce problems caused by inrush current. If there is a temporary loss of power, all outlets should be off initially when power is restored, and then the main control module should turn on only the outlets that were on when power was lost.

Q. On Switched Pro models, can you see the outlet power measurements on the PDU's local display?

A. You can see outlet current (A) measurements on the local display. You can also see outlet current (A) and power (kW) measurements through the Ethernet connection using the built-in web page (http) or SNMP or through the serial connection using the eConnect Serial Communicator software.

Q. What is the maximum operating temperature for the PDU?

A. eConnect PDUs are rated for use in ambient air temperatures up to 149°F (65°C) at input power rating (kW).

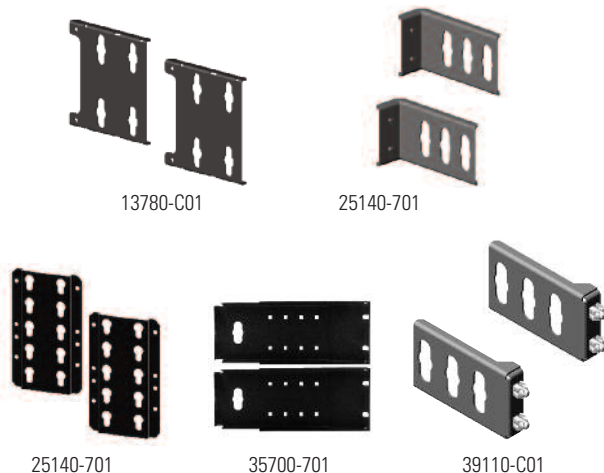


Frequently Asked Questions

eCONNECT® PDUs

Q. Does the PDU include mounting brackets for attaching into racks and cabinets?

A. No, mounting brackets for CPI racks and cabinets are sold separately. Some CPI cabinets include mounting brackets. The PDU includes tool-less mounting hardware – shoulder washers – that attach to the back of the PDU spaced either 64.75" (1645 mm) or 61.25" (1556 mm) apart. The shoulder washers insert into a keyhole shaped opening on rack and cabinet mounting brackets. This method of tool-less mounting is used by CPI and several other cabinet manufacturers. Mounting is used by CPI and several other cabinet manufacturers. If you need a bracket to fit a non-CPI rack or cabinet, please contact CPI Technical Support (800-834-4969).



Q. Is it possible to move the buttons on the rear chassis in order to accommodate the PDU in shorter cabinets and/or provide additional input cord space?

A. Yes, every eConnect PDU comes with four mounting button locations designated A1, A2, B1 and B2, depending on cabinet height and mounting button distance required. Please see PDU manual for additional information.

Q. Do eConnect PDUs have locking C13 or C19 outlets?

A. Yes, several eConnect configurations within each functionality level include locking C13 and C19 outlets.

Q. Does the locking capability require special power cords?

A. No, eConnect Click Secure technology does not require a proprietary power cord. It will work with any standard power cord that has a straight C14 or C19 plug.

Q. How tall is the breaker doghouse area compared to the rest of the PDU?

A. Most of the PDU is low-profile outlet area that is only 2.2" (56 mm) high. The breakers are located on one end of the PDU in a breaker doghouse area that is slightly higher. On three-breaker models (P/Ns Px-1xxxx) and six-breaker models (P/Ns Px-2xxxx), the breaker doghouse area is only 2.8" (71 mm) high and only 0.6" (15 mm) higher than the rest of the PDU. On six-breaker models (P/N PX-3XXXX), the breaker doghouse area is only 3.2" (81 mm) high and only 1.0" (25 mm) higher than the rest of the PDU.

Q. Will the locking outlets on the PDUs take up extra space in cabinets and racks?

A. No, the new locking outlet options have no increasing effect on the profile of the PDUs. Although the new locking outlets may visually appear to take up extra space, when inserted, they do not extend any further than the boots of most power cords. No extra space allowance is needed to accommodate the new locking outlet feature on any of the eConnect PDUs.

Q. What is the purpose of the USB port?

A. The USB port can be used to locally update the firmware of each individual PDU or small devices, such as a USB lights or other handheld, intelligent devices.



Frequently Asked Questions

eCONNECT® PDUs

Q. How do you upgrade the firmware on the PDU?

A. The latest firmware is posted on the CPI website at: <http://www.chatsworth.com/Support-and-Downloads/Downloads/Software/>. The firmware can be installed locally using a USB drive, or download the eConnect Firmware Upgrade software to manage network updates for multiple PDUs.

Q. Does CPI offer power cords for C20 inlet PDUs?

A. Yes, CPI offers a variety of North American and International power cords for 120V nominal and 240V nominal applications. Please see our catalog for additional information. (Power Management Catalog.pdf)



Q. Do eConnect PDUs support Authentication Protocols?

A. Yes, CPI eConnect PDUs support Radius and LDAP Authentication Protocols without any additional software. The PDU supports four user accounts.

Q. Can eConnect units be ordered in different colors?

A. Standard eConnect units are black in color. Custom solutions with different colored faceplates can be requested through the Custom Products team.



Q. What relay architecture do the eConnect Switched and Switched Pro units use?

A. All eConnect Switched and Switched Pro units use a "Normally closed" relay architecture. The benefit of this architecture is that the unit will continue to provide basic power distribution in the event the power supply within the unit gets compromised.

Q. Can eConnect PDU be used with a DCIM Software?

A. Yes, eConnect PDU supports SNMP v1, v2c, v3 communications, which are supported by most DCIM software. It will provide unit measurements for voltage (V), amperage (A), power (kW), power factor (Pf), energy use (kW-hr), temperature and relative humidity. If deploying a Monitored Pro or Switched Pro model, it will also provide power measurements from each outlet. Switched and Switched Pro models provide the ability to control the outlet (on/off/cycle) from the DCIM. Additionally, all threshold alarms are sent as SNMP traps. CPI recommends Sunbird PowerIQ for eConnect DCIM software, which is fully compatible with eConnect PDU, supports all of the features described above, and supports the CPI eConnect Secure Array technology. DCIM will help you maximize the results of using intelligent PDUs by turning the data collected by the PDUs into useful information. Primarily, DCIM trends data in charts and gauges, making it easy to visualize real time and historical conditions in the data center. This capability lets you identify issues before they become problems proactively. Additionally, DCIM is a reporting tool that associates cost with activities: bill back reports, redundancy reports, environmental conditions reports, and available capacity reports. This helps you identify stranded capacity and underutilized equipment to get the most out of your facility and possible defer the cost of new construction. When used together with CPI Passive Cooling technology, you can optimize your data center by minimizing cooling expenses, minimizing networking expenses associated with physical layer (in-rack) monitoring and maximizing power utilization within each rack.

Chatsworth Products (CPI) info:

Contact CPI Technical Support for assistance: 800-834-4969 or techsupport@chatsworth.com. The Technical Support Team assists customers and partners in solving IT infrastructure problems in a timely and accurate manner by understanding their requirements and creating practical and suitable CPI Solutions.