

# PC-300

## Energy Monitoring Power Conditioner and Controller 300



- *Rack-mountable power conditioner*
- *Eight individual switched rear panel outlets and one unswitched front panel outlet*
- *Adjustable turn-on delay and local/remote switching per outlet*
- *Built-in current sensing and energy monitoring per outlet, plus line voltage monitoring*
- *Professional grade surge protection*
- *UL® 1449 Type 3 Listed*
- *Thermal breaker overload protection*
- *Adjustable over voltage and under voltage cutoff*
- *EMI and RFI noise filtering*
- *Wiring fault detection*
- *Ambient temperature sensing and over temperature cutoff*
- *Ping monitoring (device lockup detection and reboot)*
- *Built-in energy usage and event logging*
- *Front panel main power switch, status indicators, and LCD*
- *Setup and operation via web browser*
- *Integrates with Crestron® control system via Ethernet or Cresnet® network*
- *Remote management via myCrestron, Crestron Fusion® software, or SNMP*
- *Protection status contact closure output*

The PC-300 is a professional grade, rack-mountable power conditioner designed to provide 120 VAC power distribution, switching, surge protection, noise filtering, and energy monitoring for Crestron® control systems, AV systems, computers, and other equipment. Eight individually switched outlets are provided on the rear panel, and a single unswitched convenience outlet is provided on the front. All nine outlets are protected, filtered, and monitored. The switched outlets each have adjustable turn-on delay settings when controlled from the front panel power switch. The switched outlets are also individually controllable via a control system to enable independent switching of devices, on/off power sequencing, load-shedding, and other custom power control functionality.<sup>1</sup>

Built-in RMS voltage and current monitoring enables logging and reporting of the line voltage, current, power, and energy usage at each outlet. An external temperature sensor is included to monitor heat conditions within the equipment rack or room. Network connectivity allows for setup and operation using a web browser, with extensive custom control and monitoring capabilities enabled through integration with a Crestron control system, the myCrestron residential monitoring service, the Crestron Fusion® enterprise management service, or an SNMP client.<sup>1,2</sup> Setup and operation can also be performed through the LCD front panel.

### Power Conditioning

The PC-300 includes the following power conditioning features to maximize overall system performance:

- **Surge Protection:** Provides protection against surges and spikes in the AC power line caused by lightning and other electrical disturbances
- **Under/Over Voltage Cutoff:** Shuts off power to the rear panel outlets if the line voltage strays beyond the normal operating range, which is adjustable
- **Thermal Breaker:** Disrupts power to all outlets in case of an overload condition
- **EMI/RFI Noise Filtering:** Prevents electromagnetic and radio frequency interference that can negatively impact sound and video quality
- **Wiring Fault Detection:** Detects faulty wiring of the incoming AC power line and shuts off power to the rear panel outlets until the fault is corrected<sup>3</sup>

### Eight Stage Turn-On Delay

When operated by its front panel power switch, the PC-300 allows each of its rear panel outlets to turn on in any order according to the delay time set for each outlet. Delayed turn-on is initiated by turning on the front panel power switch or by applying power to the main line input following a power outage or through an externally switched circuit.

Each outlet is independently adjustable to provide up to 10 seconds of delay before turning on, ensuring that the connected equipment gets powered up in proper order with sufficient time for stabilization. The staged turn-on delay helps to prevent transients that can damage components and potentially trip the main circuit breaker. It can also help to prevent audible pops and thumps through connected audio equipment at power-up.

### Remote Controlled Switched Outlets

When connected to the network, each outlet on the PC-300 rear panel can be turned on or off independently using a web browser or control system. This energy-saving feature allows select components to be powered down when not needed.

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Through integration with a control system, custom functionality can be programmed to enable control from a touch screen, keypad, remote, or mobile device. Sequential power-up and power-down functionality can be enabled through control system programming. For systems employing a backup generator or UPS, load-shedding can be performed to shut down unnecessary components during a power outage.<sup>1</sup>

### Energy Monitoring

By sensing the incoming line voltage and the total device load, the PC-300 provides solutions for monitoring, automating, and troubleshooting a system:

- Voltage monitoring allows fluctuations in the power line to be tracked and logged, helping to identify and document problems with the power utility or building wiring.
- Energy monitoring per outlet provides the real power consumption (watts), current draw (amps), and energy usage (watt-hours) for all of the connected devices combined.
- By connecting and testing one component at a time, the PC-300 allows inefficient equipment to be identified and replaced.
- Overall energy usage can be tracked and logged to identify trends and reform energy-wasting behaviors.
- System usage can be tracked to inform the scheduling of maintenance and future purchasing decisions.
- An alert notification can be sent if there is a sudden or abnormal drop in current draw, potentially indicating a device has been shut off improperly or disconnected (effective only when outlets are switched on).

### Ambient Temperature Sensing

The PC-300 offers a complete equipment protection solution by monitoring the ambient temperature within the equipment cabinet or room to prevent overheating. The included temperature sensor connects to the rear of the PC-300 and features a choice of magnetic or adhesive mounting for easy placement within a typical equipment rack enclosure.

The over temperature cutoff threshold can be set to shut down power to the system if conditions exceed a safe operating temperature. Through a control system, the temperature measurement can be utilized to regulate the operation of cooling fans or air-conditioning equipment to keep equipment running cool.

### Ping Monitoring

The PC-300 can be configured to detect an unresponsive device by sending it a ping command at regular intervals. If the ping request is not returned after four tries, the outlet bank feeding the monitored device cycles off and on to reboot the device, quickly restoring normal operation without requiring any intervention.

### Built-In Logging

Events such as power surges, over/under voltage conditions, over temperature conditions, ping failures, outlet switching activity, and sudden changes in current draw can all be logged as they occur. Event logging documents the time and cause of problems and to track system usage. All sensor readings are logged at a configurable interval as short as five seconds providing a minimum of one week's worth of data. Logs can be retrieved periodically to record a detailed history of events and energy usage over time.

### Remote Management and Control

The PC-300 integrates neatly into any system or facility. Used alone, it can be set up and managed through a web browser. It can also be configured to send email notifications in case of certain specified events. Integration with the myCrestron residential monitoring service provides a cloud based solution for homeowners to monitor and manage the PC-300 as part of a complete Crestron home automation system.

Additionally, Crestron Fusion provides an enterprise solution for corporations and universities to manage rooms using the PC-300 throughout a building or campus. Built-in SNMP support enables integration with third-party IT management software, allowing network administrators to manage one or many networked power conditioners in an IT-friendly format.

The PC-300 can also be integrated with a Crestron control system via Ethernet or the Cresnet® network to enable control and monitoring through a touch screen, handheld remote, or mobile device.<sup>1,2</sup>

### UL 1449 Certified

The PC-300 has been tested and certified by UL as compliant with the UL® 1449 safety and performance standard for surge protective devices (SPD).

### Specifications

#### Power Conditioner

<b>Maximum Output Current, Total</b>	15 A @ 120 VAC
<b>Maximum Output Current, Per Outlet/Bank</b>	15 A @ 120 VAC (subject to a maximum total output current of 15 A for all outlets combined)
<b>Filtration</b>	40 dB @ 100 kHz, 50 dB @ 300 kHz, with 50 Ω load
<b>Surge Protection Modes</b>	L-G, L-N, N-G
<b>Surge Protection Shutoff</b>	Shuts off rear outlets if surge protection is compromised
<b>Energy Dissipation</b>	2000 J per mode
<b>Clamping Voltage</b>	370 V
<b>Clamping Time</b>	1 ns
<b>Wiring Fault Detection</b>	Shuts off rear outlets if a wiring fault is detected at the input <sup>3</sup>
<b>Voltage Sensing Range</b>	90 to 160 V rms ±1%, measured at input
<b>Current Sensing Range</b>	0.4 to 15 A rms ±1% (resistive), measured at input
<b>Ambient Temperature Sensing Range</b>	13 to 221 ±4 °F (-25 to 105 ±2 °C)
<b>Under Voltage Cutoff</b>	Adjustable 90 to 110 V, shuts off rear outlets if input drops below set value
<b>Over Voltage Cutoff</b>	Adjustable 130 to 147 V, shuts off rear outlets if input exceeds set value
<b>Over Temperature Cutoff</b>	13 to 221 °F (-25 to 105 °C), shuts off rear outlets if input exceeds set value
<b>Turn-On Delay Adjustment</b>	0.1 to 10 seconds, adjustable per each rear outlet

#### Power

<b>Line Power</b>	15 A @ 120 VAC, 60 Hz
<b>Cresnet® Power Usage</b>	0 W

#### Communications

<b>Ethernet</b>	100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, TCP/IP, UDP/IP, CIP, DHCP, SSL, TLS, SNMP, web server, SMTP email client, web browser setup and control, Crestron® control system integration, Crestron Fusion® monitoring, myCrestron monitoring <sup>2</sup>
<b>Cresnet</b>	Cresnet secondary mode

#### Connectors

<b>120V~ 15A 60Hz</b>	(1) Attached 9.8 ft (3 m) grounded AC power cord with NEMA 5-15P plug; Line power input
<b>OUTLET 1-8</b>	(8) NEMA 5-15R AC power outlets; Individually switched 120 VAC power outlets; Locally switched (via power switch) with adjustable turn-on delay per outlet; Local (via LCD) or remote switchable per outlet
<b>TEMP</b>	(1) 2-pin 3.5 mm detachable terminal block; Connection for external temperature sensor (included)
<b>Y, Z, G</b>	(1) 3-pin 3.5 mm detachable terminal block; Cresnet secondary port
<b>LAN</b>	(1) 8-pin RJ-45 jack; 100Base-TX Ethernet port
<b>G</b>	(1) 6-32 screw, chassis ground lug
<b>ALWAYS ON (front)</b>	(1) NEMA 5-15R AC power outlet; Unswitched 120 VAC power outlet

### Controls and Indicators

<b>PWR</b>	(1) Bicolor green/amber LED, indicates line power is present, illuminates amber when the power switch is off and while booting, illuminates green when the power switch is on and the unit is operating normally, turns amber if the rear outlets have been shut off due to a fault condition
<b>FAULT</b>	(1) Red LED, indicates any of the following fault conditions: surge protection is compromised, line and neutral are reversed, or no ground is detected <sup>3</sup>
<b>PROTECT</b>	(1) Green LED, indicates surge protection is fully functional
<b>SHUTDOWN</b>	(1) Amber LED, indicates power to the rear outlets is shut off due to an over voltage, under voltage, line input miswire, missing ground, or compromised surge protection fault condition
<b>HW-R</b>	(1) Recessed push button, initiates a hardware reset of the internal CPU (does not affect outlets)
<b>Display</b>	(1) 2 in. (52 mm) diagonal, 220 x 176 pixels, 16-bit TFT active matrix color LCD, displays configuration and status menus
<b>Nav Pad</b>	(1) 5-way navigation pad for menu navigation and adjustment of settings
<b>HOME</b>	(1) Push button, opens or returns to the home menu
<b>BACK</b>	(1) Push button, steps menu back one level
<b>Power Switch</b>	(1) Rocker switch, "On" position initiates turn-on delay sequence to the rear panel outlets, "Off" position turns all rear outlets off immediately
<b>THERMAL BREAKER (rear)</b>	Disrupts power to all outlets in case of an overload condition, press to reset after overload condition is resolved
<b>LAN (rear)</b>	(2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity

### Environmental

<b>Temperature</b>	32 to 113 °F (0 to 45 °C)
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<b>Humidity</b>	10% to 90% RH (noncondensing)
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### Construction

<b>Chassis</b>	Steel, black finish
<b>Front Panel</b>	Extruded aluminum, black finish, polycarbonate label overlay
<b>Mounting</b>	1 RU 19 in. rack-mountable (rack ears included)
<b>Temperature Sensor</b>	Adhesive or magnetic mount, 9.8 ft (3.0 m) attached lead

### Dimensions

<b>Height</b>	1.73 in (44 mm);
<b>Width</b>	17.32 in (440 mm), 19.00 in (483 mm) with rack ears
<b>Depth</b>	10.56 in (269 mm)

### Weight

8.2 lb (3.8 kg)
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### Compliance

UL® 1449 Type 3 Listed
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### Models

<b>PC-300</b> Energy Monitoring Power Conditioner and Controller 300
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#### Notes:

1. Email notification and direct integration with myCrestron, Crestron Fusion, and SNMP will be enabled through a future firmware update. Alternately, these services can be integrated now through a Crestron control system with custom programming.
2. Detects most input line wiring faults. Does not detect neutral/ground reversal. Does not discern between ground connections at the AC power line, chassis, or connected equipment (a ground connection at any point will be detected by the PC-300 as normal). The installer is responsible for proper wiring and grounding of this and all connected equipment according to applicable electrical codes, accepted guidelines, and best practices. Proper wiring and function of the AC power source should be verified prior to connecting the PC-300 or any other equipment. Use of this product does not negate the responsibilities of the installer and end-user to exercise all appropriate and required measures for safe and reliable installation and operation.

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This product may be purchased from select authorized Crestron dealers and distributors. To find a dealer or distributor, please contact the Crestron sales representative for your area. A list of sales representatives is available online at [www.crestron.com/How-To-Buy/Find-a-Representative](http://www.crestron.com/How-To-Buy/Find-a-Representative) or by calling 855-263-8754.

This product is covered under the Crestron standard limited warranty. Refer to [www.crestron.com/warranty](http://www.crestron.com/warranty) for full details.

The specific patents that cover Crestron products are listed online at [patents.crestron.com](http://patents.crestron.com).

Certain Crestron products contain open source software. For specific information, please visit [www.crestron.com/opensource](http://www.crestron.com/opensource).

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