

# CP4N

## 4-Series™ Control System



- 4-Series™ control system with 2 GB SDRAM and 8 GB flash memory
- Embedded 4-Series multicore CPU processor
- iPhone®, iPad®, and Android™ device control app support
- XPanel computer and web based control
- Modular programming architecture
- Onboard IR/serial, COM, I/O, relay, Cresnet® network, and high-speed gigabit Ethernet control ports
- Control subnet port providing a dedicated local network for Crestron® devices
- High-speed USB 2.0 host port memory card slot
- Support for Crestron Fusion® software and XiO Cloud® service
- Enterprise-class network security and authentication
- SNMP V3 remote IT management support
- Native BACnet network/IP support
- Installer setup via software, web browser, or cloud
- IPv6 ready
- Integrates with Apple® HomeKit® technology
- Rack mountable

The CP4N is a secure, high-performance control processor with a powerful 4-Series™ control engine. The CP4N is designed to integrate and automate technology within any modern networked home, commercial building, or government facility. An isolated control subnet port provides a Gigabit Ethernet LAN dedicated to Crestron devices.

### 4-Series Control Engine

4-Series control systems come equipped with an upgraded multicore CPU, delivering a sizable speed and performance increase compared to all Crestron 3-Series® control processors. The improved performance allows 4-Series control systems to handle the increasing demands of an advanced automated system. Crestron 4-Series delivers a dynamic and secure control system platform capable of managing a room full of disparate technologies.

Reliable networking and IP control afford seamless integration with other systems and devices, with add-on control capability using Crestron touch screens, wireless remotes, and mobile device apps, as well as remote management through Crestron Fusion® software and the XiO Cloud® service.

### Modular Programming Architecture

The CP4N provides a modular programming architecture that allows the CP4N to run up to ten programs simultaneously. Programmers can develop and run independent, device-specific programs, enabling each program to be optimized for a specific function and allowing for changes to be made to one program without affecting the whole system.

### Dedicated Control Subnet

The Crestron Control Subnet is a Gigabit Ethernet network dedicated to Crestron devices. Via the Control Subnet port, an installer can connect a single touch screen or wireless gateway or can add a Crestron PoE switch ([CEN-SW-POE-5](#) or [CEN-SWPOE-16](#), both sold separately) to handle multiple touch screens, gateways, AV components, and other devices. Auto-configuration of the entire subnet is performed by the CP4N, discovering each device and assigning IP addresses without any extra effort from the installer.

A separate LAN port provides a single-point connection to the local network, requiring only one IP address for the entire control system. The LAN port allows for interconnectivity between devices on the local subnet and other devices, systems, servers, and WAN/internet connections outside the local subnet. For sensitive applications that require heightened security, the entire Control Subnet can be isolated completely from the local network.

### Onboard Control Ports

Through a full complement of onboard control ports, the CP4N can be integrated with a wide variety of audio, video, lighting, motorized shades, thermostats, door locks, sensors, security systems, and other equipment.

- Gigabit Ethernet provides an interface for connecting to the building network and controlling Crestron AV switchers, audio processors, power controllers, and other IP controllable equipment.
- Cresnet® network connectivity provides support for Crestron lighting dimmers, motorized shades, sensors, thermostats, keypads, and more.
- Onboard RS-232, IR/serial, relay, and Versiport I/O control ports enable direct integration with all types of third-party equipment.

Expanded connectivity can be provided to the CP4N via Crestron [control port expansion modules](#), [Ethernet to Cresnet bridges](#), [wired Ethernet I/O modules](#), [wireless network I/O modules](#), or [infiNET EX® network wireless gateways](#) (all sold separately).

## 4-Series™ Control System

### Crestron Fusion Room Monitoring and Scheduling

Crestron Fusion provides an integrated platform for creating smart buildings that save energy and enhance worker productivity. As part of a complete managed network in a corporate enterprise, college campus, convention center, or any other facility, the CP4N works with Crestron Fusion to enable remote scheduling, monitoring, and control of rooms and technology from a central help desk or mobile app. It also enables organizations to reduce energy consumption by tracking real-time usage and automating control of AV, lighting, shades, and HVAC. For more information about Crestron Fusion, visit [www.crestron.com/fusion](http://www.crestron.com/fusion).

### XiO Cloud Provisioning and Management

4-Series control systems leverage the power and flexibility of XiO Cloud services, enabling users to remotely provision, monitor, and manage Crestron devices across an enterprise network. XiO Cloud can be used to configure and load programs to the control system before it is received, making the control system fully functional as soon as it is connected to the network. XiO Cloud is built on the Microsoft® Azure® software platform and utilizes Microsoft's industry leading Azure IoT Hub technology. XiO Cloud enables installers and IT managers to deploy and manage thousands of devices in the time it previously took to manage just one. Unlike other virtual machine based cloud solutions, Azure services provide unlimited scalability to suit the ever growing needs of an enterprise. For more information, visit [www.crestron.com/xiocloud](http://www.crestron.com/xiocloud).

### Enhanced Enterprise-Grade Security

The CP4N is an enterprise-class control processor that can be deployed across hundreds of spaces and set up easily using a web browser, [Crestron Toolbox™ software](#), or XiO Cloud. It employs standard network security protocols, including 802.1X network access control, Active Directory® service authentication, SSH, TLS, and HTTPS to ensure reliability and compliance with your organization's IT policies.

The CP4N is configured to meet Crestron's enhanced security standards right out of the box. The CP4N ships with authentication enabled and requires that an administrator account be created before access is granted to device configuration and control interfaces.

### SNMP V3 Support

Built-in SNMP V3 support enables integration with third-party IT management software, allowing network administrators to manage and control Crestron systems on the network in an IT-friendly format.

### BACnet Support

Native support for the BACnet™ communication protocol provides a direct interface to third-party building management systems over Ethernet, simplifying integration with HVAC, security, and other systems. Using BACnet, each system runs independently but communicates together on one platform.<sup>1</sup>

### Apple HomeKit Integration

The CP4N supports integration with an Apple® HomeKit® technology system. Once the CP4N is paired with a HomeKit system via [SIMPL](#) programming, a Crestron [TSR-310](#) can be used to control supported Apple devices. A pairing QR code is affixed to the CP4N that makes it easy to pair the control system directly to the Apple Home app.<sup>2</sup>

## 4-Series™ Control System

### Specifications

#### Control Engine

Crestron® 4-Series™; real-time, preemptive multi-threaded/multitasking kernel; Transaction-Safe Extended FAT file system; supports up to 10 simultaneously running programs

#### Communications

<b>Ethernet</b>	100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, industry-standard TCP/IP stack, UDP/IP, CIP, DHCP, SSL, TLS, SSH, SFTP (SSH File Transfer Protocol), FIPS 140-2 compliant encryption, IEEE 802.1xX, SNMP, BACnet and IP <sup>1</sup> , IPv4 or IPv6, Active Directory® service authentication, HTTPS web server, HTTPS web browser setup and XiO Cloud® client, SMTP email client
<b>Control Subnet</b>	100/1000 Mbps Ethernet, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP server, DNS server, port forwarding, isolation mode
<b>Cresnet® Network</b>	Cresnet master mode
<b>USB</b>	Supports USB mass storage class devices via the rear panel USB 2.0 host port, supports computer console via the front panel USB 2.0 device port
<b>RS-232/422/485</b>	For 2-way device control and monitoring, COM port supports RS-232 up to 115.2k baud with software handshaking, one port also supports RS-422 or RS-485 and hardware handshaking
<b>IR/Serial</b>	Supports 1-way device control via infrared up to 1.2 MHz or serial TTL/RS-232 (0–5 V) up to 115.2k baud

#### Memory

<b>SDRAM</b>	2 GB
<b>Flash</b>	8 GB
<b>Memory Card</b>	Supports SD and SDHC cards up to 32 GB
<b>External Storage</b>	Supports USB storage devices up to 1 TB

### Connectors and Card Slots

<b>RELAY OUTPUT 1-8</b>	(2) 8-pin 3.5 mm detachable terminal blocks; Comprises (8) normally open, isolated relays; Rated 1 A, 30 VAC/VDC; MOV arc suppression across contacts
<b>I/O 1-8</b>	(1) 9-pin 3.5 mm detachable terminal block; Comprises (8) Versiport digital input/output or analog input ports (referenced to GND); Digital Input: Rated for 0–24 VDC, input impedance 20k Ω, logic threshold >3.125 V low/0 and <1.875 V high/1; Digital Output: 250 mA sink from maximum 24 VDC, catch diodes for use with real world loads; Analog Input: Rated for 0–10 VDC, protected to 24 VDC maximum, input impedance 21k Ω with pull-up resistor disabled; Programmable 5 V, 2k Ω pull-up resistor per pin
<b>IR - SERIAL OUTPUT 1-8</b>	(2) 8-pin 3.5 mm detachable terminal blocks; Comprises (8) IR output ports; IR output up to 1.2 MHz; 1-way serial TTL/RS-232 (0–5 V) up to 115.2k baud; IRP2 IR emitters sold separately
<b>COM 1</b>	(1) 5-pin 3.5 mm detachable terminal block; Bidirectional RS-232/422/485 port; Up to 115.2k baud; hardware and software handshaking support
<b>COM 2-3</b>	(2) 3-pin 3.5 mm detachable terminal blocks; Bidirectional RS-232 ports; Up to 115.2k baud; software handshaking support
<b>MEMORY</b>	(1) SD memory card slot; Accepts one SD or SDHC card up to 32 GB for storage of log files
<b>USB</b>	(1) USB Type A connector, female; USB 2.0 port for storage devices
<b>LAN</b>	(1) 8-pin RJ-45 connector, female; 100/1000Base-TX Ethernet port;
<b>CONTROL SUBNET</b>	(1) 8-pin RJ-45 connector, female; 100/1000Base-TX Ethernet port; Provides a dedicated local network for Crestron devices

## 4-Series™ Control System

<b>NET</b>	(1) 4-pin 3.5 mm detachable terminal block; Cresnet master port; Outputs power to Cresnet devices only if the included power pack is connected to the 24 VDC power input jack; Alternately functions as a Cresnet power input to power the unit from a Cresnet power supply; See "Power" section below for additional details
<b>24VDC 2.0A</b>	(1) 2.1 x 5.5 mm DC power connector; 24 VDC power input; PW-2420RU power pack included; Passes through to the NET port to power Cresnet devices; See "Power" section below for additional details
<b>G</b>	(1) 6-32 screw; Chassis ground lug
<b>COMPUTER (front)</b>	(1) USB Type B connector, female; USB 2.0 computer console port; For setup only

### Controls and Indicators

<b>PWR</b>	(1) Green LED, indicates operating power is supplied from the power pack or Cresnet power supply
<b>NET</b>	(1) Amber LED, indicates communication with Cresnet devices
<b>MSG</b>	(1) Red LED, indicates control processor has generated an error message
<b>HW-R</b>	(1) Recessed push button, initiates hardware reset
<b>SW-R</b>	(1) Recessed push button, initiates software reset
<b>LAN (rear)</b>	(1) Bicolor green/amber and (1) Amber LEDs; Green/amber LED indicates Ethernet link status and connection speed; Amber LED indicates Ethernet activity
<b>CONTROL SUBNET (rear)</b>	(1) Bicolor green/amber and (1) Amber LEDs; Green/amber LED indicates Ethernet link status and connection speed; Amber LED indicates Ethernet activity

### Power

<b>Power Source Options</b>	Power pack or Cresnet (connect only one)
<b>Power Pack (included)</b>	Input: 100–240 VAC, 50/60 Hz; Output: 2.5 A @ 24 VDC; Model: PW-2420RU

<b>Cresnet Power Usage</b>	15 W (0.625 A @ 24 VDC) when powered by a Cresnet power supply only
<b>Available Cresnet Power</b>	24 W (1 A @ 24 VDC) when powered by the included power pack only
<b>Power Consumption</b>	15 W (not including any connected Cresnet devices)

### Environmental

<b>Temperature</b>	41 to 113 °F (5 to 45 °C)
<b>Humidity</b>	10% to 90% RH (noncondensing)
<b>Heat Dissipation</b>	50 BTU/hr

### Enclosure

<b>Chassis</b>	Metal, aluminum, black finish
<b>Faceplate</b>	Extruded metal, black finish, polycarbonate label overlay
<b>Mounting</b>	Freestanding or 1 RU 19-in. rack mountable (adhesive feet and rack ears included)

### Dimensions

<b>Height</b>	1.70 in. (44 mm) without feet
<b>Width</b>	17.28 in. (439 mm); 19.00 in. (483 mm) with rack ears
<b>Depth</b>	6.56 in. (167 mm)

### Weight

3.12 lb (1.42 kg)

### Compliance

**Regulatory Model: M201903003;**  
UL® Listed for US & Canada, CE, IC, FCC Part 15 Class B digital device

### Models

**CP4N**  
4-Series™ Control System

### Included Accessories

**PW-2420RU**  
Desktop Power Pack, 24 VDC, 2.5 A, 2.1 mm, Universal

### Available Accessories

For supported accessories, visit the CP4N product page at [www.crestron.com](http://www.crestron.com).

## 4-Series™ Control System

### Notes:

1. A BACnet and IP license is required. A free license is available to support up to 50 BACnet objects on a single 4-Series control system. Enabling support for more than 50 BACnet objects requires the purchase of one [SW-3SERIES-BACNET-50+](#) license. The CP4N supports a maximum of 1000 BACnet objects when dedicated for BACnet use only. Actual capabilities are contingent upon the overall program size and complexity. To obtain the license, visit [www.crestron.com/bacnetlicense](http://www.crestron.com/bacnetlicense).
2. This feature is only available when using the TSR-310. Other Crestron touch screens, handheld remotes, and keypads are not supported. For these interfaces, traditional IR or CEC control must be used to control supported Apple devices.

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 contact us for additional information by visiting [www.crestron.com/contact/our-locations](http://www.crestron.com/contact/our-locations) for your local contact.

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).

Crestron, the Crestron logo, 3-Series, 4-Series, Cresnet, Crestron Fusion, Crestron Toolbox, infiNET EX, and XiO Cloud are either trademarks or registered trademarks of Crestron Electronics, Inc. in the United States and/or other countries. Apple, HomeKit, iPad, iPhone, and iPod touch are either trademarks or registered trademarks of Apple, Inc. in the United States and/or other countries. Android is either a trademark or a registered trademark of Google Inc. in the United States and/or other countries. Active Directory, Azure, and Microsoft are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. UL is either a trademark or a registered trademark of Underwriters Laboratories, Inc. in the United States and/or other countries. Wi-Fi is either a trademark or registered trademark of Wi-Fi Alliance in the United States and/or other countries. Other trademarks, registered trademarks, and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Crestron disclaims any proprietary interest in the marks and names of others. Crestron is not responsible for errors in typography or photography.

Specifications are subject to change without notice.

©2021 Crestron Electronics, Inc.

Rev 10/05/21

# CP4N

## 4-Series™ Control System

