

# 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 ports with PoE+ providing a dedicated local network for Crestron® devices
- High-speed USB 2.0 host port and rear panel memory card slot
- Three control card expansion slots (optional) available via the CAGE3 accessory
- IEC 61000-4-5 Installation Class 4 surge immunity on COM, Versiport, and network connections
- Crestron Fusion® software room monitoring and scheduling support
- XiO Cloud® service provisioning and management support
- 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 AV4 is a secure, high-performance control processor with a powerful 4-Series control engine and an enhanced feature set, including available control card expansion slots (via the CAGE3 accessory) and dedicated control subnet ports. The AV4 is designed to integrate and automate technology within any modern networked home, commercial building, or government facility. The 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 AV4 provides a modular programming architecture that allows it 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 ports, an installer can connect up to four touch screens or wireless gateways or can add Crestron PoE switches ([CEN-SW-POE-5](#) or [CEN-SWPOE-16](#), both sold separately) to handle multiple touch screens, gateways, AV components, and other devices. Each port also supports PoE+ using the optional [PW-5430DUS](#) power supply (sold separately). Auto-configuration of the entire subnet is performed by the AV4, discovering each device and assigning IP addresses without any extra effort from the installer.<sup>1</sup>

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 AV4 can be integrated with a wide variety of audio, video, lighting, motorized shades, thermostats, door locks, sensors, security systems, and other equipment.<sup>1</sup>

- 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.

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- 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 AV4 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).

### 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, the AV4 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. Crestron 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 simultaneously. 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 AV4 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 AV4 is configured to meet Crestron's enhanced security standards right out of the box. The AV4 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.

### Control Card Expansion Slots

Additional control ports can be added to the AV4 using [control cards](#) and the [CAGE3](#) control card expansion cage. The CAGE3 accessory installs in the AV4, providing three control card expansion slots on the AV4 rear panel. Adding the CAGE3 option affords great expansion capability without requiring any additional rack space.

### 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 AV4 supports integration with an Apple® HomeKit® technology system. Once the AV4 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 AV4 that makes it easy to pair the control system directly to the Apple Home app.<sup>2</sup>

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### Specifications

#### Control Engine

Crestron® 4-Series™; real-time, preemptive multi-threaded/multitasking kernel; 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, SNMP, SSH, SFTP (SSH File Transfer Protocol), FIPS 140-2 compliant encryption, IEEE 802.1x, 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, IEEE 802.3at Type 1 compliant PoE PSE
<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 (0–5V) 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>S1–S3</b>	(3) control card expansion slots; Requires CAGE3 accessory (sold separately)
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<b>COM 1–2</b>	(2) 3-pin 3.5 mm detachable terminal block; Bidirectional RS-232/422/485 ports; Up to 115.2k baud; hardware and software handshaking support
<b>COM 3–6</b>	(1) 3-pin 3.5 mm detachable terminal block; Bidirectional RS-232 ports; Up to 115.2k baud; software handshaking support
<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 (0–5V) up to 115.2k baud; IRP2 IR emitters sold separately
<b>RELAY OUTPUT 1–8</b>	(1) 4-pin 3.5 mm detachable terminal block; Comprises (8) normally open, isolated relays; Rated 1 A, 30VAC/VDC; MOV arc suppression across contacts
<b>PoE+ INPUT POWER</b>	(1) Combo D-Sub 7w2 connector, male; 54VDC power input for PoE+ power supply; Enables PoE+ power sourcing on the CONTROL SUBNET ports
<b>CONTROL SUBNET</b>	(4) 8-pin RJ-45 connectors, female; 100BASE-TX/1000BASE-T Ethernet port; PoE+ PSE (Power Sourcing Equipment) port; Provides a dedicated local network for Crestron devices
<b>LAN</b>	(1) 8-pin RJ-45 connector, female; 100BASE-TX/1000BASE-T Ethernet port;
<b>USB</b>	(1) USB Type A connector, female; USB 2.0 port for storage devices
<b>MEMORY</b>	(1) SD memory card slot; Accepts one SD or SDHC card up to 32 GB for storage of log files
<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 0–24VDC, input impedance 20k Ω, logic threshold >3.125V low/0 and <1.875V high/1; Digital Output: 250 mA sink from maximum 24VDC, catch diodes for use with real world loads; Analog Input: Rated for 0–10VDC, protected to 24VDC maximum, input impedance 21k Ω with pull-up resistor disabled; Programmable 5V, 2k Ω pull-up resistor per pin

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<b>NET</b>	(1) 4-pin 3.5 mm detachable terminal block; Cresnet master port; Outputs power to Cresnet devices; Alternately functions as a Cresnet power input to power the unit from a Cresnet power supply; See "Power" section below for additional details
<b>100–240V~ 2.4A 50/60Hz</b>	(1) IEC 60320 C14 main power inlet; Mates with removable power cord
<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) Bicolor Green/Amber LED, indicates operating power is present; Amber indicates that the device is booting and is not yet ready to operate; Green indicates that the device is ready to operate
<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>CNPS FAULT</b>	(1) Red LED and (1) push button; LED indicates an excessive Cresnet load detected at the NET port; Push button resets the fault indication
<b>SLOT 1–3</b>	(3) Green LEDs, indicate control cards are inserted in the corresponding slots
<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>Main Power</b>	2.4A @ 100-240VAC, 50/60Hz
<b>Available Cresnet Power</b>	75W (3.125A @ 24VDC)

<b>Power over Ethernet Plus (PoE+)</b>	IEEE 802.3at compliant PoE+ PSE (Power Sourcing Equipment); 120W total power; Each CONTROL SUBNET port supplies up to 30W to power one PoE+ (Class 4) PD (Powered Device)
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### Environmental

<b>Temperature</b>	41 to 104°F (5 to 40°C)
<b>Humidity</b>	10% to 90% RH (noncondensing)
<b>Heat Dissipation</b>	43 BTU/hr

### Enclosure

<b>Chassis</b>	Metal, black finish, vented top and sides
<b>Faceplate</b>	Extruded metal, black finish, polycarbonate label overlay
<b>Mounting</b>	Freestanding or 2 RU 19-in. rack-mountable (adhesive feet and rack ears included)

### Dimensions

<b>Height</b>	3.47 in. (89 mm) without feet
<b>Width</b>	17.28 in. (439 mm); 19.00 in. (483 mm) with rack ears
<b>Depth</b>	10.11 in. (257 mm)

### Weight

4.0 lb (1.9 kg)

### Compliance

**Regulatory Model: M201903001;**  
BV Listed for US & Canada, CE, IC, FCC Part 15 Class B digital device

### Models

**AV4**  
4-Series™ Control System

### Available Accessories

**C2N-IO**  
Control Port Expansion Module

**C2N-HBLOCK**  
Multitype Cresnet® Network Distribution Block

**C3COM-3**  
3-Series® Control Card - 3 COM Ports

**C3IO-16**  
3-Series® Control Card - 16 Versiport I/O Ports

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**C3IR-8**

3-Series® Control Card - 8 IR Ports

**C3RY-16**

3-Series® Control Card - 16 Relay Ports

**C3RY-8**

3-Series® Control Card - 8 Relay Ports

**CAGE3**

Control Card Expansion Cage for AV3 and AV4

**CEN-GWEXER**

infiNET EX® Network and ER Wireless Gateway

**CENI-GWEXER**

infiNET EX® Network and ER Wireless Gateway - International

**CEN-IO-COM-102**

Wired Ethernet I/O Extender with 2 COM Ports

**CEN-IO-DIGIN-104**

Wired Ethernet I/O Extender with 4 Digital Inputs

**CEN-IO-IR-104**

Wired Ethernet I/O Extender with 4 IR Ports

**CEN-IO-RY-104**

Wired Ethernet I/O Extender with 4 Relay Ports

**CEN-IO-COM-202**

Wi-Fi® Network I/O Extender with 2 COM ports

**CEN-IO-DIGIN-204**

Wi-Fi® Network I/O Extender with 4 Digital Inputs

**CEN-IO-IR-204**

Wi-Fi® Network I/O Extender with 4 IR Ports

**CEN-IO-RY-204**

Wi-Fi® Network I/O Extender with 4 Relay Ports

**CEN-SWPOE-16**

16-Port Managed PoE Switch

**CEN-SW-POE-5**

5-Port PoE Switch

**CNSP-XX**

Custom Serial Interface Cable

**CNXRMIRD**

IR Receiver

**CNTBLOCK**

Cresnet® Network Distribution Block

**CRESTRON-APP-ANDROID**

Crestron® App for Android® OS

**CRESTRON-GO**

Crestron Go App for iPhone® and iPod touch® Devices

**CRESTRON-GO-TABLET**

Crestron Go App for iPad® Device

**DIN-CENCN-2**

Ethernet to Cresnet® Network Bridge

**DIN-CENCN-2-POE**

Ethernet to Cresnet® Network Bridge with PoE

**IRP2**

IR Emitter with Terminal Block Connector

**PW-5430DUS**

High-Efficiency Power Pack

**PWE-4803RU**

PoE Injector

**SW-3SERIES-BACNET-50+**

BACnet™ Network/IP Support for 3-Series® and 4-Series Control Processors

**SW-FUSION-C-3**

Crestron Fusion® Cloud; 250 rooms; 3-year service, support, and updates

**SW-FUSION-P-L**

Crestron Fusion® On-premises; Unlimited rooms; lifetime service, support, and updates

**SW-XIOC-EM**

XiO Cloud® Provisioning and Management Service, Endpoint Management License for one room

**SW-XIOC-S**

XiO Cloud® Provisioning and Management Service, Support License for one room

**SW-XIOC-API**

XiO Cloud® Provisioning and Management Service, REST API License for one room

**XPANEL**

XPanel – Crestron Control® Interface for Computers

## Notes:

1. The following connections comply with IEC 61000-4-5 Installation Class 4 surge immunity levels: COM 1-6, I/O 1-8, NET, LAN, and CONTROL SUBNET.
2. 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 AV4 supports a maximum of 2000 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).
3. 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.

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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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