

## 3-Series Control System®

- > Enterprise-class control system
- > 3-Series® Control Engine — substantially faster and more powerful than other control systems
- > Exclusive modular programming architecture
- > Onboard 1GB RAM & 4GB Flash memory
- > Expandable storage up to 1TB
- > Rear panel memory card slot
- > High-speed USB 2.0 host port
- > Industry-standard Ethernet and Cresnet® wired communications
- > Control Subnet — provides a dedicated local network for Crestron® devices
- > XPanel with Smart Graphics™ computer and web based control
- > iPhone®, iPad®, and Android™ control app support
- > Crestron Fusion® Cloud Enterprise Management Service support
- > SNMP remote management support
- > Two RS-232/422/485 COM ports with hardware and software handshaking
- > Four RS-232 COM ports with software handshaking only
- > Eight IR/serial, eight relay, and eight Versiport I/O ports
- > Three built-in 3-Series control card expansion slots (optional)<sup>[3]</sup>
- > Programmable event scheduling with astronomical time clock
- > Native BACnet™/IP support<sup>[2]</sup>
- > IEC 61000-4-5 Installation Class 4 surge immunity on COM, Versiport, and network connections<sup>[4]</sup>
- > Installer setup via Crestron Toolbox™ software or web browser
- > C#, symbol based, and drag-and-drop programming environments
- > Full Unicode (multi-language) support
- > Increased network throughput and security
- > Secure access through full user/group management or Active Directory integration
- > Hardware level security using 802.1X authentication
- > TLS, SSL, SSH, and SFTP network security protocols
- > FIPS 140-2 compliant encryption
- > IIS v.6.0 Web Server
- > IPv6 ready
- > Front panel USB computer console port
- > 2-space rack-mountable



### 3-Series® Control Systems

Today's commercial buildings and custom homes comprise more technology than ever before, and all these systems need to be networked, managed, and controlled in fundamentally new ways. The IP based 3-Series platform is engineered from the ground up to deliver a network-grade server appliance capable of faithfully handling everything from boardroom AV and home theater control to total building management.

3-Series embodies a distinctively robust, dynamic, and secure platform to elevate your system designs to higher levels of performance and reliability. Compared to other control systems, Crestron 3-Series provides a pronounced increase in processing power and speed with more memory, rock solid networking and IP control, and a unique modular programming architecture.

### Modular Programming Architecture

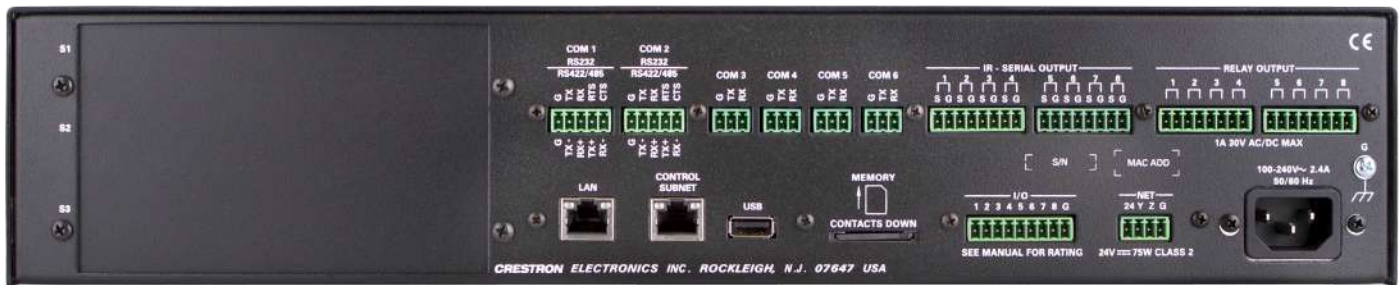
Designed for enhanced scalability, the AV3 affords high-speed, real-time multi-tasking to seamlessly run multiple programs simultaneously. This exclusive modular programming architecture lets programmers independently develop and run device-specific programs for AV, lighting, shades, HVAC, security, etc., allowing for the optimization of each program, and allowing changes to be made to one program without affecting the whole. Even as your system grows, processing resources can easily be shifted from one 3-Series processor to another without rewriting any code. The end benefit is dramatically simplified upgradability with minimal downtime, whether implementing changes on site or remotely via the network.

### Robust Ethernet & IP Control

IP technology is the heart of 3-Series, so it should be no surprise that its networking abilities are second to none. Gigabit Ethernet connectivity enables integration with IP-controllable devices and allows the AV3 to be part of a larger managed control network. Whether residing on a sensitive corporate LAN, a home network, or accessing the Internet through a cable modem, the AV3 provides secure, reliable interconnectivity with IP-enabled touch screens, computers, mobile devices, video displays, media servers, security systems, lighting, HVAC, and other equipment — whether on premises or across the globe.

The Crestron® AV3 is an enterprise-class control system with an enhanced feature set including built-in control card expansion slots and a dedicated Control Subnet port. Featuring the 3-Series® control engine, the AV3 forms the core of any modern networked home or commercial building, managing and integrating all the disparate technologies throughout your facility to make life easier, greener, more productive, and more enjoyable.

# AV3 3-Series Control System®



AV3 – Rear View

## Dedicated Control Subnet

The Crestron Control Subnet is a Gigabit Ethernet network dedicated to Crestron devices. Via the AV3's Control Subnet port, an installer may simply connect a single touch screen or wireless gateway, or add a Crestron PoE switch ([CEN-SW-POE-5](#) or [CEN-SWPOE-16](#))<sup>[1]</sup> to handle multiple touch screens, gateways, AV components, and other devices. Auto-configuration of the entire subnet is performed by the AV3, discovering each device and assigning IP addresses without any extra effort from the installer.

A separate LAN port on the AV3 provides a single-point connection to the customer's LAN, requiring just one IP address for the complete control system. The LAN port allows full interconnectivity between devices on the local subnet with other devices, systems, servers, and WAN/Internet connections outside the local subnet. For sensitive applications that require absolute security, the entire Control Subnet can be completely isolated from the customer's LAN using Isolation Mode.

## Control Apps & XPanel

Years ago, Crestron pioneered the world's first IP-based control system unleashing vast new possibilities for controlling, monitoring, and managing integrated systems over a LAN, WAN, and the Internet. Today, Crestron offers more ways than ever to control your world the way you want. Using a computer, smartphone, or tablet device, Crestron lets you control anything in your home or workplace from anywhere in the world.

Native to every 3-Series control system, Crestron [XPanel](#) technology transforms any laptop or desktop computer into a virtual Crestron touch screen. Crestron [control apps](#) deliver the Crestron touch screen experience to iPhone®, iPad®, and Android™ devices, letting you safely monitor and control your entire residence or commercial facility using the one device that goes with you everywhere.

## Crestron Fusion® Cloud

[Crestron Fusion Cloud](#) provides an integrated platform for creating truly smart buildings that save energy, enhance worker productivity, and prolong the life-span of valuable equipment.

As part of a complete managed network in a corporate enterprise, college campus, convention center, or any other facility, the AV3 works integrally with Crestron Fusion Cloud to enable remote scheduling, monitoring, and control of rooms and technology from a central help desk. It also enables organizations to reduce energy consumption by tracking real-time usage and automating control of lighting, shades, and HVAC.



## SNMP Support

Built-in SNMP 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.

## Cresnet®

Cresnet provides a dependable network wiring solution for Crestron keypads, lighting controls, shade motors, thermostats, occupancy sensors, and other devices that don't require the higher speed of Ethernet. The Cresnet bus offers easy wiring and configuration, carrying bidirectional communication and 24VDC power to each device over a simple 4-conductor cable. To assist with troubleshooting, the AV3 includes our patent-pending Network Analyzer which continuously monitors the integrity of the Cresnet network for wiring faults, marginal performance, and other errors.

## Onboard Control Ports

In addition to Ethernet, the AV3 includes six bidirectional COM ports and eight IR ports to interface directly with all of your centralized AV sources, video displays, and other devices. Eight programmable relay ports are included for controlling projection screens, lifts, power controllers, and other contact-closure actuated equipment. Eight "Versiport" I/O ports enable the integration of power sensors, motion detectors, door switches, alarms, or anything else that provides a dry contact closure, low-voltage logic, or 0-10 Volt DC signal.

## Optional Control Card Expansion Slots

Additional control ports can be added to the AV3 using [3-Series Control Cards](#) and the [CAGE3](#) Control Card Expansion Cage.<sup>[1]</sup> The CAGE3 accessory installs in the AV3, providing three control card expansion slots on the AV3's rear panel. Adding the CAGE3 option affords great expansion capability without requiring any additional rack space.

## BACnet™/IP

Native support for the [BACnet/IP](#) communication protocol provides a direct interface to third-party building management systems over Ethernet, simplifying integration with HVAC, security, fire & life safety, voice & data, lighting, shades, and other systems. Using BACnet/IP, each system runs independently with the ability to communicate together on one platform for a truly smart building.<sup>[2]</sup>



# AV3 3-Series Control System®

## SPECIFICATIONS

### Control Engine

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Crestron 3-Series; real-time, preemptive multi-threaded/multitasking kernel; Transaction-Safe Extended FAT file system; supports up to 10 simultaneously running programs

### Memory

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**SDRAM:** 1 GB

**Flash:** 4 GB

**Memory Card:** Supports SD and SDHC cards up to 32 GB

**External Storage:** Supports USB mass storage devices up to 1 TB

### Communications

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**Ethernet:** 10/100/1000 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 802.1X, SNMP, BACnet/IP<sup>[2]</sup>, IPv4 or IPv6, Active Directory authentication, IIS v.6.0 Web Server, SMTP e-mail client

**Control Subnet:** 10/100/1000 Mbps Ethernet, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP server, DNS Server, port forwarding, Isolation Mode

**Cresnet:** Cresnet master mode

**USB:** Supports USB mass storage class devices via rear panel USB 2.0 host port, supports computer console via front panel USB 2.0 device port

**RS-232/422/485:** For 2-way device control and monitoring, all ports support RS-232 up to 115.2k baud with software handshaking, two ports also support hardware handshaking, RS-422, and RS-485

**IR/Serial:** Supports 1-way device control via infrared up to 1.2 MHz or serial TTL/RS-232 (0-5 Volts) up to 115.2k baud

### Connectors & Card Slots

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**S1 – S3:** (3) 3-Series control card expansion slots (optional)<sup>[3]</sup>

**COM 1 – 2:** (2) 5-pin 3.5 mm detachable terminal blocks; Bidirectional RS-232/422/485 ports<sup>[4]</sup>; Up to 115.2k baud; hardware and software handshaking support

**COM 3 – 6:** (4) 3-pin 3.5 mm detachable terminal blocks; Bidirectional RS-232 ports<sup>[4]</sup>; Up to 115.2k baud; software handshaking support

**IR - SERIAL OUTPUT 1 – 8:** (2) 8-pin 3.5 mm detachable terminal blocks; Comprises (8) IR/Serial output ports; IR output up to 1.2 MHz; 1-way serial TTL/RS-232 (0-5 Volts) up to 115.2k baud

**RELAY OUTPUT 1 – 8:** (2) 8-pin 3.5 mm detachable terminal blocks; Comprises (8) normally open, isolated relays; Rated 1 Amp, 30 Volts AC/DC; MOV arc suppression across contacts

**LAN:** (1) 8-pin RJ45 jack; 10Base-T/100Base-TX/1000Base-T Ethernet port<sup>[4]</sup>; Connects to the customer's LAN

**CONTROL SUBNET:** (1) 8-pin RJ45 jack; 10Base-T/100Base-TX/1000Base-T Ethernet port<sup>[4]</sup>; Provides a dedicated local network for Crestron devices

**USB:** (1) USB Type A female; USB 2.0 port for storage devices

**MEMORY:** (1) SD memory card slot; Accepts one SD or SDHC card up to 32 GB for memory expansion

**I/O 1 – 8:** (1) 9-pin 3.5 mm detachable terminal block; Comprises (8) "Versiport" digital input/output or analog input ports (referenced to GND)<sup>[4]</sup>;

Digital Input: Rated for 0-24 Volts DC, input impedance 20k Ohms, logic threshold >3.125V low/0 and <1.875V high/1;

Digital Output: 250 mA sink from maximum 24 Volts DC, catch diodes for use with "real world" loads;

Analog Input: Rated for 0-10 Volts DC, protected to 24 Volts DC maximum, input impedance 21k Ohms with pull-up resistor disabled;

Programmable 5 Volts, 2k Ohms pull-up resistor per pin

**NET:** (1) 4-pin 3.5 mm detachable terminal block; Cresnet master port, outputs power to Cresnet devices<sup>[4]</sup>; See "Power" section for additional specifications

**100-240V~2.4A 50/60Hz:** (1) IEC 60320 C14 main power inlet; Mates with removable power cord, included

**G:** (1) 6-32 screw; Chassis ground lug

**COMPUTER (front):** (1) USB Type B female; USB 2.0 computer console port (6 ft cable included); For setup only

### Controls & Indicators

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**PWR:** (1) Green LED, indicates operating power supplied from AC line

**NET:** (1) Amber LED, indicates communication with the Cresnet system

**MSG:** (1) Red LED, indicates control system has generated an error message

**HW-R:** (1) Recessed pushbutton for hardware reset

**SW-R:** (1) Recessed pushbutton for software reset

**CNPS FAULT:** (1) Red LED and (1) pushbutton, LED indicates an excessive Cresnet load detected at the NET port, pushbutton resets the fault indication

**SLOT 1 – 3:** (3) Green LEDs, indicate control cards are inserted in the corresponding slots<sup>[3]</sup>

**LAN (rear):** (2) Bi-color green/amber LEDs, left LED indicates Ethernet link status and connection speed, right LED indicates Ethernet activity

**CONTROL SUBNET (rear):** (2) Bi-color green/amber LEDs, left LED indicates Ethernet link status and connection speed, right LED indicates Ethernet activity

### Power

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**Main Power:** 2.4 Amps @ 100-240 Volts AC, 50/60 Hz

**Available Cresnet Power:** 75 Watts (3.125 Amps @ 24 Volts DC)

# AV3 3-Series Control System®

## Environmental

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**Temperature:** 41° to 113° F (5° to 45° C)

**Humidity:** 10% to 90% RH (non-condensing)

**Heat Dissipation:** 45 BTU/hr with no Cresnet devices, no control cards;  
71 BTU/hr with full Cresnet load, no control cards;

*See individual control card spec sheets for additional specifications*

## Enclosure

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**Chassis:** Metal, black finish, vented top and sides

**Faceplate:** Extruded metal, black finish, polycarbonate label overlay

**Mounting:** Freestanding or 2 RU 19-inch rack-mountable (adhesive feet and rack ears included)

## Dimensions

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**Height:** 3.47 in (89 mm) without feet

**Width:** 17.28 in (439 mm);  
19.00 in (483 mm) with rack ears

**Depth:** 10.06 in (256 mm)

## Weight

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4.0 lb (1.9 kg)

## MODELS & ACCESSORIES

### Available Models

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AV3: 3-Series Control System®

### Available Accessories

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CAGE3: Control Card Expansion Cage for AV3

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

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

C3IR-8: 3-Series® Control Card - 8 IR Ports

C3RY-8: 3-Series® Control Card - 8 Relay Ports

C3RY-16: 3-Series® Control Card - 16 Relay Ports

PWE-4803RU: PoE Injector

CEN-SW-POE-5: 5-Port PoE Switch

CEN-SWPOE-16: 16-Port Managed PoE Switch

C2N-HBLOCK: Multi-type Cresnet Distribution Block

CNTBLOCK: Cresnet Distribution Block

CNSP-XX: Custom Serial Interface Cable

IRP2: IR Emitter Probe w/Terminal Block Connector

Crestron® App: Control App for Apple® iOS® & Android™

XPanel: Crestron Control® for Computers

myCrestron: Dynamic DNS Service for Crestron Systems

Crestron Fusion®: Enterprise Management Platform

3-Series® BACnet™/IP Support: 3-Series Native BACnet/IP Interface License

CSP-LIR-USB: IR Learner

### Notes:

1. Item(s) sold separately.
2. License required. The AV3 supports a maximum of 2000 BACnet objects when dedicated for BACnet use only. Actual capabilities are contingent upon the overall program size and complexity.
3. Requires CAGE3 Control Card Expansion Cage accessory.
4. 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.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at [www.crestron.com/salesreps](http://www.crestron.com/salesreps) or by calling 800-237-2041.

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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