Control4 EA-5 Controller

Installation Guide

Supported model

- C4-EA5 Entertainment and Automation Controller, 5 Zone
- C4-EA5-V2 Entertainment and Automation Controller, 5 Zone, V2

Box contents

The following items are included in the box:

- EA-5 controller
- AC power cord
- IR emitters (8)
- Rack ears (2, pre-installed on the EA-5 V2)
- Rubber feet (2, pre-installed on the EA-5 V1)
- External antennas (3 with EA-5 V1, 1 with EA-5 V2)
- Terminal blocks for contacts and relays

Accessories sold separately

- Control4 3.5 mm-to-DB9 Serial Cable (C4-CBL3.5-DB9B)
- Dual-Band WiFi USB Adapter for EA-5 V2 (C4-USBWIFI or C4-USBWIFI-1)

Warnings

Caution! To reduce the risk of electrical shock, do not expose this apparatus to rain or moisture.

Avertissement ! Pour réduire le risque de choc électrique, n'exposez pas cet appareil à la pluie ou à l'humidité.

Caution! In an over-current condition on USB or contact output the software disables the output. If the attached USB device or contact sensor does not appear to power on, remove the device from the controller.

Avertissement ! Dans une condition de surintensité sur USB ou sortie de contact le logiciel désactive sortie. Si le périphérique USB ou le capteur de contact connecté ne semble pas s'allumer, retirez le périphérique du contrôleur.

Caution! If this product is used as a means to open and close a garage door, gate, or similar device, use safety or other sensors to ensure safe function. Follow appropriate regulatory and safety standards governing project design and installation. Failure to do so may result in property damage or personal injury.

Requirements and specifications

Note: We recommend using Ethernet instead of WiFi for the best network connectivity.

Note: The Ethernet or WiFi network should be installed before you install the EA-5 controller.

Note: The EA-5 V2 requires OS 2.10.2 or higher. The EA-5 V1 requires OS 2.8.1 or higher.

Composer Pro is required to configure this device. See the *Composer Pro User Guide* (ctrl4.co/cpro-ug) for details.

Specifications

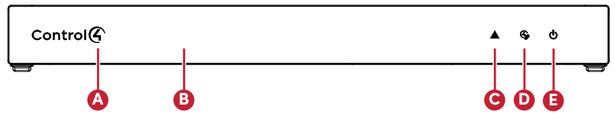
Inputs / Outputs	
Video out	1 video out—1 HDMI
Video	HDMI 1.4 output; HD 1080p, 50-60 Hz
Audio out	5 audio out—1 HDMI, 2 stereo analog, 2 digital coax
Audio playback formats	AAC, AIFF, ALAC, FLAC, M4A, MP2, MP3, MP4/M4A, Ogg Vorbis, PCM, WAV, WMA
High-res audio playback	Up to 192 kHz / 24 bit
Audio in	4 audio in—2 stereo analog, 2 digital coax
Audio delay on audio in	Up to 3.5 seconds, depending on network conditions
Advanced audio subsystem	Dual audio signal processors, multiple sample rate converters
Audio system controls (analog or digital coax)	10-band graphic equalizer, input gain, output gain, loudness, tone controls, balance
Signal-to-noise ratio	<-118 dBFS
Total harmonic distortion	0.00023 (-110 dB)
Network	
Ethernet	10/100/1000BaseT compatible (required for controller setup).
Built-in Ethernet switch	1 Ethernet in + 4 gigabit Ethernet switch ports
WiFi	Internal Dual-Band Wireless-N (EA-5 V1) (2.4GHz, 5GHz, 802.11n/g/b) (EA-5 V1) Optional Dual-Band WiFi USB Adapter (EA-5 V2) (2.4 GHz, 5 Ghz, 802.11ac/b/g/n/a)
WiFi security	WPA/WPA2
WiFi antenna	2 external reverse SMA connectors (EA-5 V1)
ZigBee Pro	802.15.4
ZigBee antenna	External reverse SMA connector
eSATA port	1 eSATA port
USB port	1 USB 2.0 port—500mA
Control	
IR OUT	8 IR out—5V 27mA max output
IR capture	1 IR receiver—front; 20-60 KHz
SERIAL OUT	4 Serial out—2 DB9 ports and 2 shared with IR out 1-2
Contact	4 contact sensors—2V-30VDC input, 12VDC 0.5A maximum output
Relay	4 relays—AC: 36V, 2A maximum voltage across relay; DC: 24V, 2A maximum voltage across relay
Power	
Power requirements	100-240 VAC, 60/50Hz
Power consumption	Max: 40W, 136 BTUs/hour Idle: 15W, 51 BTUs/hour
Other	
Operating temperature	32˚F × 104˚F (0˚C × 40˚C)
Storage temperature	4˚F × 158˚F (-20˚C × 70˚C)
Fan dB level	Max: 35 dB
Dimensions (H × W × D)	17.5 × 10.125 × 1.875" w/feet (444 × 258 × 49 mm)
Weight	6.85 lbs (3.10 kg)
Shipping weight	9.30 lbs (4.20 kg)

Additional resources

The following resources are available for more support.

- Control4 Knowledgebase: kb.control4.com and Dealer Forums: forums.control4.com
- Control4 Technical Support
- Control4 website: www.control4.com
- Composer Pro documentation in online help or PDF format available on the Dealer Portal under Support: ctrl4.co/docs

Front view

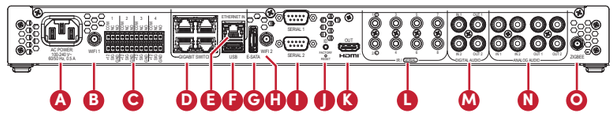


A **Data LED**—The LED indicates that the controller is streaming audio.
B **IR window**—IR blaster and IR receiver for learning IR codes.
C **Caution LED**—This LED shows solid red, then blinks blue during the boot process.

Note: The Caution LED flashes orange during the factory restore process. See "Reset to factory settings" in this document.

D **Link LED**—The blue LED indicates that the controller has been identified in a Control4 Composer project and is communicating with Director.
E **Power LED**—The blue LED indicates that AC power is connected. The controller turns on immediately after power is applied to it.

Back view



A **Power plug port**—AC power receptacle for an IEC 60320-C13 power cord.
B **WIFI 1—**Antenna 1 for the WiFi radio (EA-5 V1 only).
C **Contact/Relay port**—Connect up to four relay devices and four contact sensor devices to the terminal block connector. Relay connections are **COM**, **NC** (normally closed), and **NO** (normally open). Contact sensor connections are **+12**, **SIG** (signal), and **GND** (ground).
D **GIGABIT SWITCH—**Four-port gigabit ethernet switch to connect other local devices to the network.
E **ETHERNET IN—**RJ-45 jack for a 10/100/1000 BaseT Ethernet connection.
F **USB**—One port for an external USB drive or, on an EA-5 V2, the optional Dual-Band WiFi USB Adapter. See "Set up external storage devices" in this document.
G **E-SATA—**One port for an external eSATA drive. See "Setting up external storage devices" in this document.
H **WIFI 2—**Antenna 2 for the WiFi radio (EA-5 V1 only)
I **SERIAL—**Two serial ports for RS-232 control. See "Connecting the serial ports" in this document.
J **ID and FACTORY RESET—**ID button to identify the device in Composer Pro. The ID button on the EA-5 V2 is also an LED that displays feedback useful during a factory restore. **FACTORY RESET** button is used to restore the controller to factory defaults. Can also reboot the controller.
K **HDMI OUT—**An HDMI port to display system menus. Also an audio out over HDMI.
L **IR / SERIAL—**Eight 3.5 mm jacks for up to eight IR emitters or for a combination of IR emitters and serial devices. Ports 1 and 2 can be configured independently for serial control or for IR control. See "Setting up IR emitters" in this document for more information.
M **DIGITAL AUDIO**—Two digital coax audio input and two output ports. Allows audio to be shared (IN 1 or 2) over the local network to other Control4 devices. Outputs audio (OUT 1 or 2) shared from other Control4 devices or from digital audio sources (local media or digital streaming services such as TuneIn.)
N **ANALOG AUDIO—**Two stereo audio input and two output ports. Allows audio to be shared (IN 1 or 2) over the local network to other Control4 devices. Outputs audio (OUT 1 or 2) shared from other Control4 devices or from digital audio sources (local media or digital streaming services such as TuneIn.)
O **ZIGBEE—**Antenna for the Zigbee radio.

Installing the controller

To install the controller:

1. Ensure that the home network is in place before starting system setup. The controller requires a network connection, Ethernet (recommended) or WiFi, to use all of the features as designed. When connected, the controller can access web-based media databases, communicate with other IP devices in the home, and access Control4 system updates.
2. Mount the controller in a rack or stacked on a shelf. Always allow plenty of ventilation. See "Mounting the controller in a rack" in this document.
3. Connect the controller to the network.
   - **Ethernet**—To connect using an Ethernet connection, plug the data cable from the home network connection into the controller's RJ-45 port (labeled "ETHERNET IN") and the network port on the wall or at the network switch.
   - **WiFi**—To connect using WiFi, first connect the controller to Ethernet, and then use Composer Pro System Manager to reconfigure the controller for WiFi.

     Important: Do *not* install your EA controller on a 172.18.xxx.xxx subnet.
4. Connect system devices. Attach IR and serial devices as described in "Connecting the IR ports/serial ports" and "Setting up IR emitters."
5. Set up any external storage devices as described in "Setting up external storage devices" in this document.
6. Power up the controller. Plug the power cord into the controller's power plug port and then into an electrical outlet.

Mounting the controller in a rack

Using the pre-installed rack-mount ears, the EA-5 can easily be mounted in a rack for convenient installation and flexible rack placement. The pre-installed rack-mount ears can even be reversed to mount the controller facing the rear of the rack, if needed.

To attach the rubber feet to the controller:

1. Remove the two screws in each of the rack ears on the bottom of the controller. Remove the rack ears from the controller.
2. Remove the two additional screws from the controller case and place the rubber feet on the controller. .
3. Secure the rubber feet to the controller with three screws in each rubber foot.

Pluggable terminal block connectors

For the contact and relay ports, the EA-5 makes use of pluggable terminal block connectors which are removable plastic parts that locks in individual wires (included).

To connect a device to the pluggable terminal block:

1. Insert one of the wires required for your device into the appropriate opening in the pluggable terminal block you reserved for that device.
2. Use a small flat-blade screwdriver to tighten the screw and secure the wire in the terminal block.

Example: To add a motion sensor (see Figure 3), connect its wires to the following contact openings:

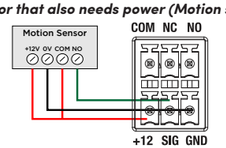
- Power input to **+12V**
- Output signal to **SIG**
- Ground connector to **GND**

Note: To connect dry contact closure devices, such as doorbells, connect the switch between **+12** (power) and **SIG** (signal).

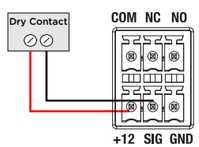
Connecting the contact ports

The EA-5 provides four contact ports on the included pluggable terminal blocks. See the examples below to learn how to connect devices to the contact ports.

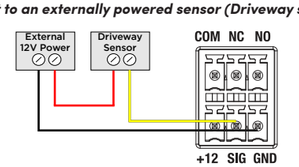
Wire the contact to a sensor that also needs power (Motion sensor)



Wire the contact to a dry contact sensor (Door contact sensor)



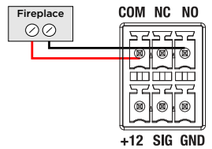
Wire the contact to an externally powered sensor (Driveway sensor)



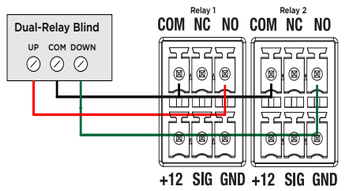
Connecting the relay ports

The EA-5 provides four relay ports on the included pluggable terminal blocks. See the examples below to learn now to connect various devices to the relay ports.

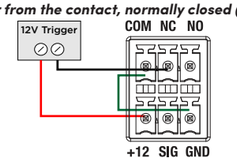
Wire the relay to a single-relay device, normally open (Fireplace)



Wire the relay to a dual-relay device (Blinds)



Wire the relay with power from the contact, normally closed (Amplifier trigger)



Connecting the serial ports

The EA-5 controller provides four serial ports. SERIAL 1 and SERIAL 2 can connect to a standard DB9 serial cable. IR ports 1 and 2 (serial 3 and 4) can be reconfigured independently for serial communication. If not used for serial, they can be used for IR. Connect a serial device to the controller using the Control4 3.5 mm-to-DB9 Serial Cable (C4-CBL3.5-DB9B, sold separately).

1. The serial ports support many different baud rates (acceptable range: 1200 to 115200 baud for odd and even parity). Serial ports 3 and 4 (IR 1 and 2) do not support hardware flow control.
2. See Knowledgebase article #268 (http://ctrl4.co/contr-serial-pinout) for pinout diagrams.
3. To configure a port's serial settings, make the appropriate connections in your project using Composer Pro. Connecting the port to the driver will apply the serial settings contained in the driver file to the serial port. See the *Composer Pro User Guide* for details.

Note: Serial ports 3 and 4 can be configured as straight-through or null with Composer Pro. Serial ports by default are configured straight-through and can be changed in Composer by selecting the option *Enable Null-Modem Serial Port (3/4)*.

Setting up IR emitters

The EA-5 controller provides 8 IR ports. Your system may contain third-party products that are controlled through IR commands. The included IR emitters can send commands from the controller to any IR-controlled device.

1. Connect one of the included IR emitters into an **IR OUT** port on the controller.
2. Remove the adhesive backing from the emitter (round) end of the IR emitter and affix it to the device to be controlled over the IR receiver on the device.

Setting up external storage devices

You can store and access media from an external storage device, for example, a USB drive or eSATA drive, by connecting the USB drive to the USB port and configuring or scanning the media in Composer Pro. A NAS drive can also be used as an external storage device; see the *Composer Pro User Guide* (ctrl4.co/cpro-ug) for more details.

Note: We support only externally powered USB drives or solid-state USB drives (USB thumb drives). USB hard drives that do not have a separate power supply are not supported.

Note: When using USB or eSATA storage devices on an EA-5 controller, a single primary partition formatted FAT32 is recommended.

Composer Pro driver information

Use Auto Discovery and SDDP to add the driver to the Composer project. See the *Composer Pro User Guide* (ctrl4.co/cpro-ug) for details.

Troubleshooting

Reset to factory settings

Caution! The factory restore process will remove the Composer project. Back up the project with Composer Pro before you start the factory restore process

To restore the controller to the factory default image:

1. Insert a straightened paper clip into the small hole on the back of the controller labeled **FACTORY RESTORE**.
2. Press and continue to hold the **FACTORY RESTORE** button, the controller resets and the caution LED turns solid red.
3. Hold the button until the Caution LED flashes double orange. This should take five to seven seconds. The Caution LED flashes orange while the factory restore is running. When complete, the Caution LED turns off and the device power cycles one more time to complete the factory restore process.

Note: On an EA-5 V2 controller, the ID button is also an LED that provides the same feedback as the Caution LED on the front of the controller.

Power cycle the controller

1. Press and hold the **ID** button for five seconds. The controller turns off and back on.

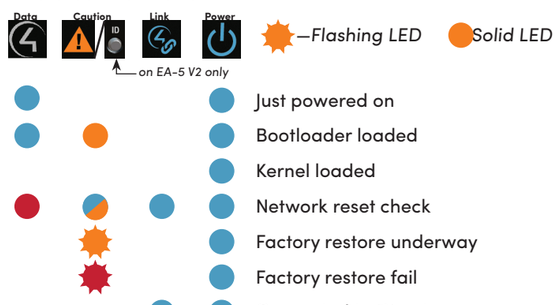
Reset the network settings

To reset the controller network settings to the default:

1. Disconnect power to the controller.
2. While pressing and holding the **ID** button on the back of the controller, reconnect power to the controller.
3. Hold the **ID** button until the Caution LED (rear ID LED) appears solid orange and the Link and Power LEDs are solid blue, and then immediately release the button.

Note: In OS 2.10.1 and lower, the Caution LED appears solid blue during the network reset check. After updating to OS 2.10.2 and higher, the Caution LED appears orange during the network reset check.

LED status information



Regulatory/Safety information

To review regulatory information for your Control4 products, see the information located on the Control4 website at ctrl4.co/reg.

Warranty

Visit ctrl4.co/warranty for details.

More help

For the latest version of this document and to view additional materials, open the URL below or scan the QR code on a device that can view PDFs.

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