TRIAD INSTALLATION GUIDE - 8×8 V2 and 16×16 AUDIO MATRIX SWITCH

INTRODUCTION

The Triad 8×8 v2 and 16×16 Audio Matrix Switches enable up to 8 (or 16) stereo audio sources to simultaneously play to 8 (or 16) audio outputs. Each output zone can be adjusted with independent volume, bass, treble, EQ, audio delay, balance, loudness and mono summing controls. Triad Audio Matrix Switches are ideal for use with Control4 EA Series Entertainment and Automation Controllers, delivering dependable, high-resolution audio distribution throughout the home.

Triad Audio Matrix Switches require OS 3.2.0 or higher.

SUPPORTED MODELS

- TS-AMS8V2 Triad 8×8 Audio Matrix Switch
- TS-AMS16 Triad 16×16 Audio Matrix Switch

BOX CONTENTS

- Audio Matrix Switch with rack-mount ears installed
- IEC power cord
- Optional feet for mounting on a table or shelf

FEATURES

- Send up to 8 (or 16) audio sources to as many as 8 (or 16) audio zones for reliable multi-room audio distribution
- Simple device discovery protocol (SDDP) ensures seamless integration with Control4
- Analog and digital audio inputs support audio resolutions up to 192 kHz/24 bit
- High signal-to-noise ratio delivers dynamic, high-resolution audio to every room in the house
- Smooth volume control (1/2 db volume steps) with real time volume and mute status on Control4 navigators
- Independent volume, bass, treble, 6-band parametric EQ for room tuning, separate 6-band parametric EQ for speaker presets, audio delay (up to 80 ms), balance, loudness, and mono summing for each output
- Independent input gain and audio delay (up to 80 ms) for each source input
- 12V trigger outputs enable simple on/off control of Triad Power Amplifiers or other devices that support 12V power on capabilities.
- 2.1 option with detailed crossover settings enables two stereo outputs to be grouped together to create a dynamic 2.1 (sat/sub) audio zone
- Audio sensing supports programmable events based on the presence of audio
- Ethernet control
- Rack-mount ears included
- OvrC support

WARNINGS

WARNING! 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.

WARNING! Do not expose the apparatus to dripping or splashing. Do not place objects filled with liquids near the apparatus.

AVERTISSEMENT ! N'exposez pas l'appareil à l'égoutture ou à l'éclaboussement. Ne placez pas les objets remplis de liquides près de l'appareil.

IMPORTANT! Using this product in a manner other than outlined in this document voids your warranty. Further, Control4 is *not* liable for any damage incurred with the misuse of this product. See "*Warranty*."

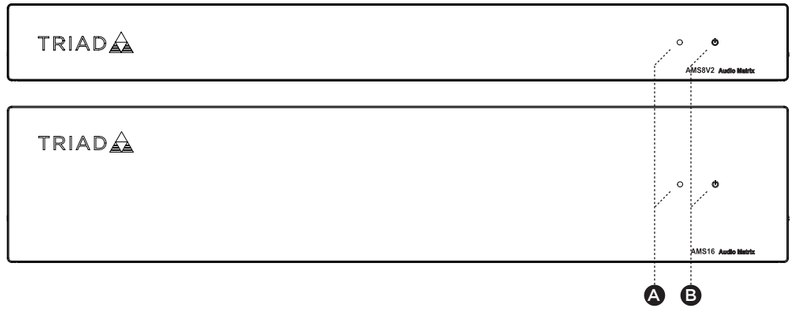
IMPORTANT ! Employer ce produit en quelque sorte autre que décrit dans ce document vide votre garantie. De plus, Control4 *n'est pas* responsable d'aucun dommage encouru avec l'abus de ce produit. Voyez que « *Warranty*. »

IMPORTANT! To avoid generating excessive heat, do not stack amplifiers on top of each other or other equipment.

IMPORTANT ! Pour éviter de produire de la chaleur excessive, n'empilez pas les amplificateurs sur l'un l'autre ou tout autre équipement.

FRONT AND REAR PANEL DESCRIPTION

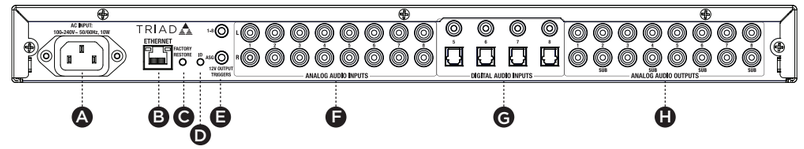
FRONT PANEL (8×8 and 16×16)



A Status LED—RGB LED to show system status. See "LED Troubleshooting Guide" in this document for more information.

B Power LED—LED shows solid blue when matrix switch is powered on.

BACK PANEL (8×8)



A Power plug port—For standard IEC cord (included). Supports universal AC input (100-240V AC, 50-60Hz).

B ETHERNET—RJ45 port for a 10/100/1000BaseT Ethernet connection.

C FACTORY RESTORE button—Resets the device to factory default settings.

D ID button—Identifies the device to the Control4 system.

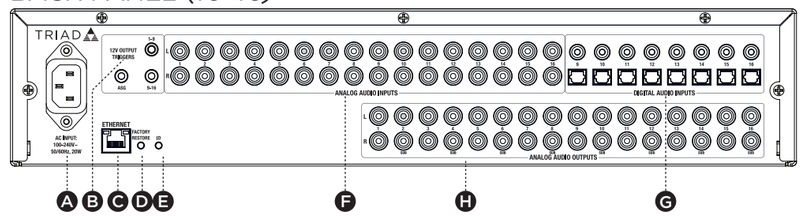
E 12V OUTPUT TRIGGERS—3.5 mm ports that output 12V for on/off control of amplifiers. The 1-8 trigger outputs 12V whenever any output (1-8) is active. The ASG trigger output is assignable in Composer to output 12V whenever designated audio output(s) are active.

F ANALOG AUDIO INPUTS (1-8)—Stereo RCA jacks for up to 8 analog audio sources.

G DIGITAL AUDIO INPUTS (5-8)—Digital coax and TOSLINK (S/PDIF) connectors for up to 4 digital audio sources. Inputs 5-8 can be either digital or analog, but not both. Digital inputs do not support multi-channel audio. Digital sources must be stereo PCM.

H ANALOG AUDIO OUTPUTS (1-8)—RCA jacks for line-level output. Every output can play audio from any input.

BACK PANEL (16×16)



A Power plug port—For standard IEC cord (included). Supports universal AC input (100-240V AC, 50-60Hz).

B 12V OUTPUT TRIGGERS—3.5 mm ports that output 12V for on/off control of amplifiers. The **1-8** trigger outputs 12V whenever any output (1-8) is active. The **9-16** trigger outputs 12V whenever any output (9-16) is active. The **ASG** trigger output is assignable in Composer and the local web interface to output 12V whenever designated audio output(s) are active.

C ETHERNET—RJ45 port for a 10/100/1000BaseT Ethernet connection.

D FACTORY RESTORE button—Resets the device to factory default settings.

E ID button—Identifies the device to the Control4 system.

F ANALOG AUDIO INPUTS (1-16)—RCA jacks for stereo channel input for up to 16 stereo analog sources.

G DIGITAL AUDIO INPUTS (9-16)—Digital coax and TOSLINK (S/PDIF) connectors for digital audio sources. Digital inputs do not support multi-channel audio. Digital sources must be stereo PCM.

H ANALOG AUDIO OUTPUTS—RCA jacks for line level output. Every output can play audio from any input.

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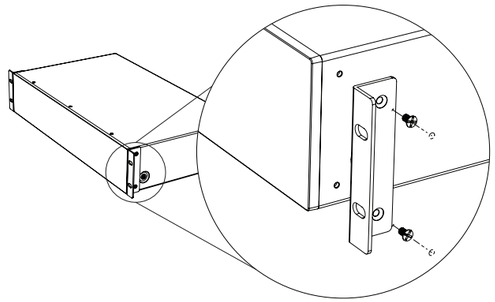
INSTALLING THE MATRIX SWITCH

INSTALLING THE MATRIX SWITCH IN A RACK

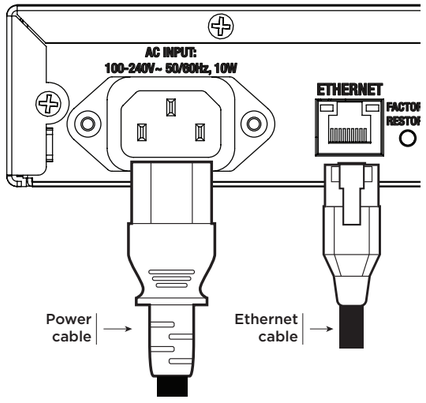
Note: Rack ears come pre-installed on the matrix switch. The instructions below show how to install the rack ears should they ever be removed.

1. Align the holes on the rack ears with the holes on both sides of the matrix switch. The matrix switch can be rear or front mounted.
2. Attach the rack ears to the matrix switch using the provided screws.



CONNECTING THE MATRIX SWITCH TO ETHERNET AND POWER

1. Plug the Ethernet CAT5E/6 cable from a local network connection into the **ETHERNET** port.
2. Connect the provided power cable into the back of the Audio Matrix Switch to the power outlet. When the power cable is connected, the Audio Matrix Switch should power up.



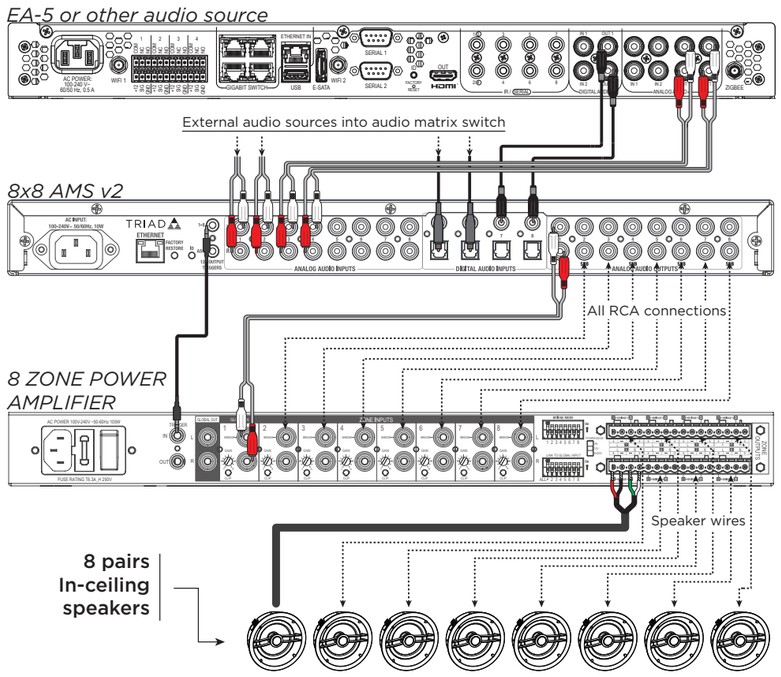
CONNECTING AUDIO TO THE MATRIX SWITCH

Physical and programming connections are required to control, navigate, and use the Audio Matrix Switch within a Control4 system. Use Composer Pro to add the driver to the desired room and set up the programming connections. See the Composer Pro User Guide (***ctrl4.co/cpro-ug***) for details.

Connect the physical connections to your audio matrix switch from your other audio equipment using the examples provided below:

CONNECTING AN 8-SOURCE, 8-ZONE SYSTEM

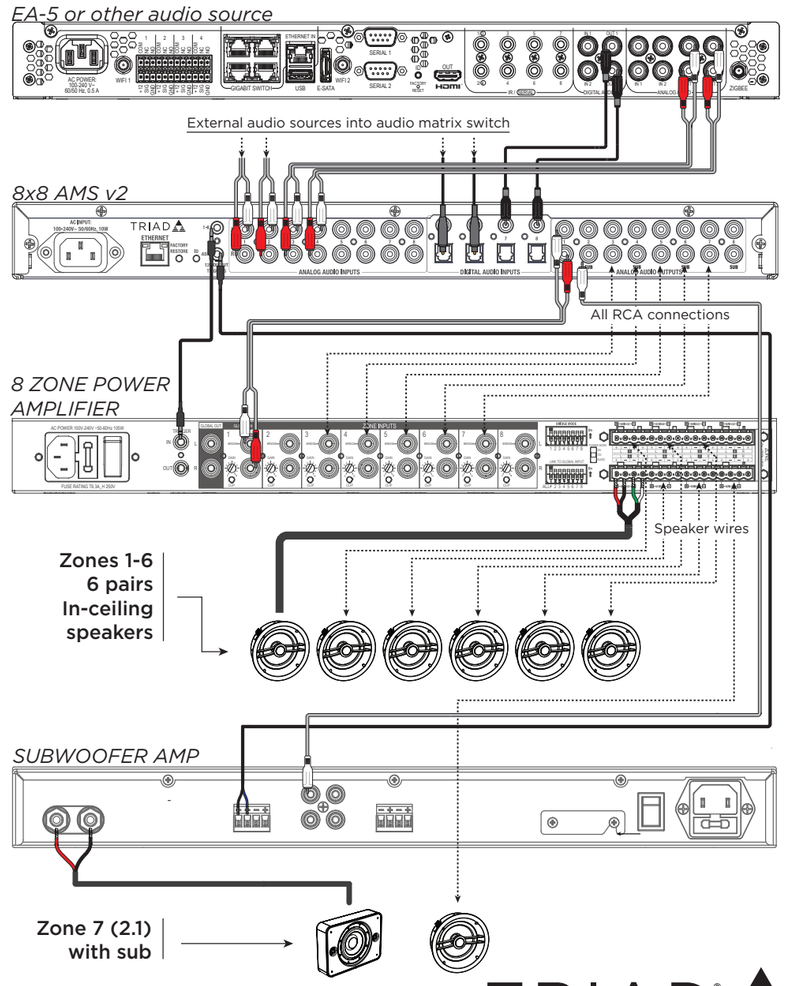
1. Connect audio sources (outputs from a Control4 controller, audio streaming devices, tuners, etc.) to the **ANALOG AUDIO INPUT** and **DIGITAL AUDIO INPUT** jacks.
2. Connect the **ANALOG AUDIO OUTPUT** jacks to amplifiers or amplified speakers.
3. Connect 12V trigger cables from the matrix switch to the amplifier (if applicable) for automatic power control of the amplifier.



ADDING A SUBWOOFER TO A ZONE USING THE 2.1 ZONE FEATURE

Using the 2.1 Zone feature, you can group two outputs of the matrix and one output can feed a subwoofer amplifier. Repeat steps 1-3 for the 6 standard speaker zones as described in "Connecting an 8-source, 8-zone system."

1. Set up 2.1 grouping in Composer or the local web interface.
2. Set the assignable 12V trigger output (**ASG**) to the output for the subwoofer amplifier in Composer or the local web interface.
3. Connect the matrix switch **Analog Audio Output** to the **Audio Input** of the amplifier for the subwoofer.
4. Connect the **ASG** 12V output to the 12V trigger input of the amplifer.



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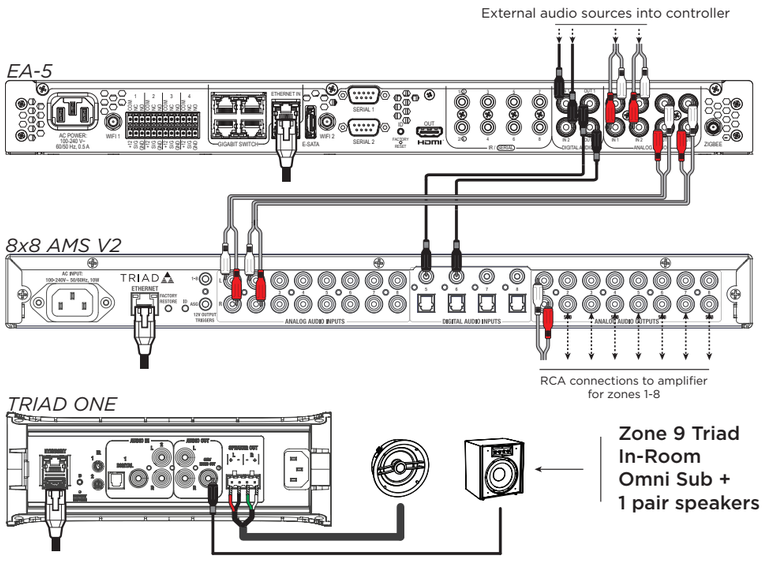
TRIAD INSTALLATION GUIDE - 8×8 V2 and 16×16 AUDIO MATRIX SWITCH

ADDING A STREAMING AUDIO ZONE WITH THE TRIAD ONE (CONTROL4 SYSTEMS ONLY)

Using a Triad One (TS-SAMP1), an extra audio zone can be added to a Control4 system with a Triad 8x8 Audio Matrix Switch. In this illustration, the Triad One streams all external audio sources that are connected into the Control4 controller. The Triad One also can generate its own digital media stream (My Music and Control4 native streaming services) separately from the Control4 controller.

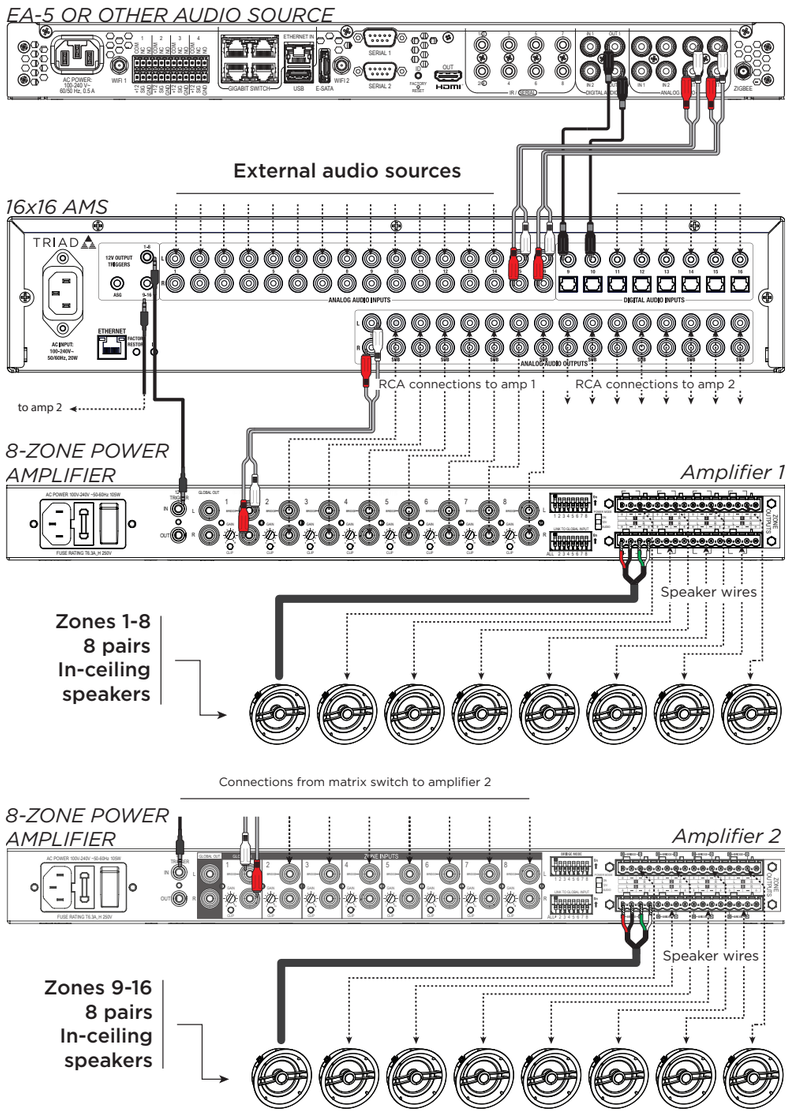
1. Connect external audio sources to the analog audio and digital audio (coax) inputs of the controller.
2. Connect the rest of the 8 analog zones as described in steps 1-3 of "Connecting an 8-source, 8-zone system."
3. Connect the Triad One to power and network (can be configured WiFi if desired). See the *Triad One Installation Guide* for more details (triadspkrs.co/triadone-ig).
4. Connect speakers to the SPEAKER OUT connection and connect a subwoofer to the SUB/ MONO OUT connection (if desired).



(connect the rest of the 8-zone system as shown in "Connecting an 8-source, 8-zone system")

CONNECTING A 16-SOURCE, 16-ZONE SYSTEM WITH THE 16×16 AUDIO MATRIX SWITCH

1. Connect audio sources (outputs from a Control4 controller, audio streaming devices, tuners, etc.) to the **ANALOG AUDIO INPUT** and **DIGITAL AUDIO INPUT** jacks.
2. Connect the **ANALOG AUDIO OUTPUT** jacks to amplifiers or amplified speakers. Connect outputs **1-8** to the first Triad 8-Zone Power Amplifier (TS-PAMP8-100) and outputs **9-16** to the second amplifier.
3. Connect 12V trigger cables from the matrix switch to the amplifier (if appl cable) for automatic power control of the amplifier. Connect 12V output **1-8** to the first Triad 8-Zone Power Amplifier and the 12V output **9-16** to the second amplifier.



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TROUBLESHOOTING

RESETTING THE MATRIX SWITCH

- **Network reset**—Remove the power cord to power cycle the device. Hold the **ID** button while you replace the power cord to power on the matrix switch. Hold the **ID** button until you see Status LED show solid **orange**.
- **Factory restore**—Press and hold the **FACTORY RESTORE** button for five seconds to restore the device to its previous firmware image and restore the defaults. The Status LED will blink **white** rapidly when the factore restore begins.

Caution! The factory restore process will restore the matrix switch to a factory state and replace the firmware image with the factory default firmware.

LED TROUBLESHOOTING GUIDE

Status LED	● = *solid* ✹ = *flashing*
☼	Matrix switch is booting
●	Matrix switch finished booting and has IP address
●	Matrix switch is connected to Director
○	An audio output is active (white LED)
✹	Matrix switch does not have an IP address
✹	Firmware update in progress
✹	Firmware update error
☼	Factory restore in progress (flashing white LED)

LEGAL NOTICES

Find details of the product's Limited Warranty and other safety, patent, and legal resources at ***snapone.com/legal*** or request a paper copy from Customer Service at **866.424.4489**.

SPECIFICATIONS

AUDIO SPECIFICATIONS	
THD	<0.005 %, 20 Hz – 20 kHz
SNR	>105 dB, A-weighted—input to output
Frequency response	20 Hz – 20 kHz +/- 0.2 dB
Input impedance	Minimum 12 K ohms
Volume control per channel	+0 to -100 dB range
Mute	Available on all outputs
Source input gain	0.5 dB steps, -12 dB to +12 dB on every input
Mono summing	Configurable per stereo output pair, each output combines the L/R input signal.
6-band parametric EQ	Adjustable per stereo output, +/-12 dB, 0.1 dB steps
2.1 audio zone	Each subwoofer output is enabled on the even output and paired with adjacent odd-numbered output. • Subwoofer volume offset: +/-12 dB, 0.5 dB steps • Crossover type: Selectable Linkwitz-Riley/Butterworth • Crossover slope: Selectable 12/24/48 dB • Crossover frequency: 20-300 Hz, 1 dB steps • Output select: Stereo/Mono
Analog input/output voltage	2V/2V
Audio/Output delay	0-80 ms / 0-80 ms
Supported sample rates	44.1 kHz, 48 kHz, 96 kHz, 192 kHz, at 16- or 24-bit resolution
Tone control	• Low shelf (bass) adjustable per stereo output 20-2000 Hz, +/-12 dB, 0.1 dB steps • High shelf (treble) adjustable per stereo output 20-20000 Hz, +/-12 dB, 0.1 dB steps

CONNECTIONS	8×8 AMS v2	16×16 AMS
Source inputs (Digital inputs are either coax or optical and are stereo PCM only)	8 × stereo analog (RCA) 4 × digital coax 4 × digital optical Inputs 5-8 are either analog or digital	16 × stereo analog (RCA) 8 × digital coax 8 × digital optical Inputs 9-16 are either analog or digital
Zone outputs	8 × stereo analog (RCA)	16 × stereo analog (RCA)
12V trigger outputs	1 × mono 3.5 mm (1/8") output 1 x mono 3.5 mm (1/8") assignable output	2 × mono 3.5 mm (1/8") outputs 1 x mono 3.5 mm (1/8") assignable output

POWER AND THERMAL		
AC mains power	AMS8-V2: 100-240V AC, 50/60 Hz, 10W AMS16: 100-240V AC, 50/60 Hz, 20W	
Power connection	IEC 320 C13 power connector with 3-pole detachable power cord	
Operating temperature	0 °C ~ 50 °C (32 °F ~ 122 °F)	
Humidity	5% to 95% non-condensing	
Storage	-20 to 70 °C (-4 to 158 °F)	
Cooling method	Passive	
Thermal dissipation (heat losses)	1.1W/3.75 BTU/hour (standby) 8W/27.7 BTU/hour (max)	1.34W/4.6BTU/hour (standby) 15W/52.0BTU/hour (max)

MISCELLANEOUS	8×8 AMS v2	16×16 AMS
Front power LED	1 × RGB LED	1 × RGB LED
System status LED	1 × RGB LED	1 × RGB LED
Ethernet	1 × RJ45	1 × RJ45
ID button	Yes	Yes
Factory restore button	Yes	Yes
Dimensions without feet (H × W × D)	44 × 445 × 264 mm (1.75 × 17.5 × 10.4")	89 × 445 × 264 mm (3.5 × 17.5 × 10.4")
Dimensions with feet (H × W × D)	54 × 445 × 264 mm (2.1 × 17.5 × 10.4")	98 × 445 × 264 mm (3.88 × 17.5 × 10.4")

PRODUCT NUMBER	8×8 AMS v2	16×16 AMS
	TS-AMS8 v2	TS-AMS16