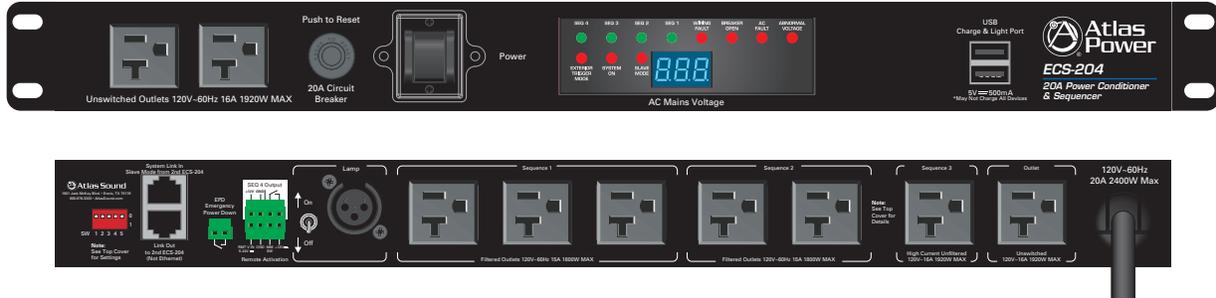


ECS-204

20A Power Sequencer & Conditioner



Features

- 9 Total Outlets
- 3 Unswitched Outlets, 2 Front and 1 Rear
- 6 Rear Panel Outlets are Sequenced in Three Stages
- Vertical Oriented Rear Outlets
- Sequenced Output Trigger for an ECM-15SH, ECM-20SH, ECM-30 or an Additional ECS-204
- Selectable Sequence Times From 3 Seconds to 2 Minutes
- Link Up to 3 ECS-204 Units with Rear Linking Port
- Radio Frequency (RFI) and Electromagnetic Interference (EMI) Filters
- Dual Clamping Spike & Surge Suppression, DCS Circuitry
- Front Panel Digital AC Mains Voltmeter
- Emergency Power Down (EPD)
- Extreme Voltage Shutdown (EVS) Below 102V or Above 132V AC Line with Selectable Auto or Manual Reset
- External Switch Sequence Trigger Activation, Momentary or Latching Switch
- External DCV Sequence Trigger Activation 5-24VDC
- Circuit Breaker Protection @ 20 Amps Indicated by “Breaker Open” LED
- AC Fault, Wiring Fault, and Abnormal Voltage LED Indicators
- Dual Front Panel USB Ports for Charging USB Devices or Powering Lamps
- Rear Panel XLR Receptacle for the Optional AP-GNL18 Gooseneck Lamp
- Front Panel Mains Power Switch Security Cover
- Optional Remote Key Switch
- AC Power Cord Retainer

Overview

The ECS-204 is a 20 Amp complete power management system offering a combination of features not found on other power management devices. The ECS-204 features are dedicated to making your AV systems more reliable, more durable and easier to operate. To protect your equipment, the ECS-204 has sequential sequencing to allow for safe powering up and powering down of you electronic gear. There are four sequencing steps, and the fourth sequencing step is in the form of a trigger to activate additional sequencers or external power conditioners. This external switch is useful when there is a need to turn-on a powered speaker system where the speakers are powered from different electrical outlets, to activate another 20A sequencer for higher power capacity, or to activate another sequencer when more sequencing steps are desired.

The ECS-204 features a detailed front panel display with information including a digital voltmeter to provide accurate real time voltage information, four sequential status indicators, a polarity fault indicator, mains breaker indicator for excessive current draw, AC fault indicator, and an abnormal voltage indicator when voltage is below 108VAC or above 125VAC. Other useful features include two front panel accessible power outlets, a system power switch with safety cover, front access reset switch and USB ports for charging gear and powering lights.

Applications

The ECS-204 is designed with a host of features that make it ideal for use in a variety of commercial applications. This 20A complete power management system includes multiple switched and unswitched outlets as well as sequencing that allow users to safely power on and turn off critical components including amplifiers, media controllers, digital signal processors and more. Multiple levels of protection including over and under voltage protection as well as protection against EMI and RFI not only protect connected equipment but also improve signal quality to output devices. The ECS-204 is ideal for use in:

- Restaurants
- Sports Bars
- Office Complexes
- Houses of Worship
- Small Tech Centers

General Description

The ECS-204 has been designed to meet a broad range of installation requirements for AC power distribution, management, and protection. The 20A, compact 1 RU unit features four internal sequential timing sections, three on the unit and one to trigger an external device. All can be activated via the unit locally or remotely. Front panel activation is via a momentary switch, while rear activation can be accomplished via a remote momentary switch, latching switch, or by 5-24VDC. AC Mains Voltage can be monitored via the front panel from the precision digital voltmeter. The ECS-204 includes dual front panel USB charge ports that can be used to charge devices such as cell phones or music players. These charge ports also support an optional USB gooseneck lamp to light the rack. The rear of the rack can be illuminated by the optional AtlasIED gooseneck LED lamp (AP-GNL18) connected via an XLR style socket. If a 20A AC Mains power source is not enough to meet the amperage demand of the system, the ECS-204 provides a sequenced 12VDC or contact closure output (Seq 4) that can be used to trigger other devices such as the AtlasIED ECM-20SH 20A standalone AC power module. Also, up to 3 ECS-204 units can be linked together providing 12 sequenced outputs. Sequence timing selection is made by a rear panel switch selection. There are four choices that range from 3 seconds to 2 minutes.

The ECS-204 incorporates an Emergency Power Down (EPD) feature. The EPD may be required by the local fire code to pass site inspection. This port when activated immediately turns all outlets Off. Unstable AC Mains voltage is one of the main reasons for equipment failure. AC Spikes, or Transients, are commonly caused by lightning storms or utility power plant grid switchovers. The amount of energy that can be injected into the power system can be immense with voltages reaching 6kV or amperage peaks of 3000A. These spikes are very fast and usually only last for a very short period of time. To protect against this potential problem, the ECS-204 features Dual Clamping Suppression technology (DCS). If a spike intrudes the AC system, the ECS-204 incoming AC Mains has special suppression circuitry to eliminate the unwanted energy and in the unlikely event of any energy getting passed the first stage, each sequenced output section has redundant DCS circuitry clamping the unwanted energy. This circuitry is very fast and can suppress unwanted energy within a nanosecond, while sustaining the suppression up to 2 milliseconds, thus ensuring virtually trouble free protection.

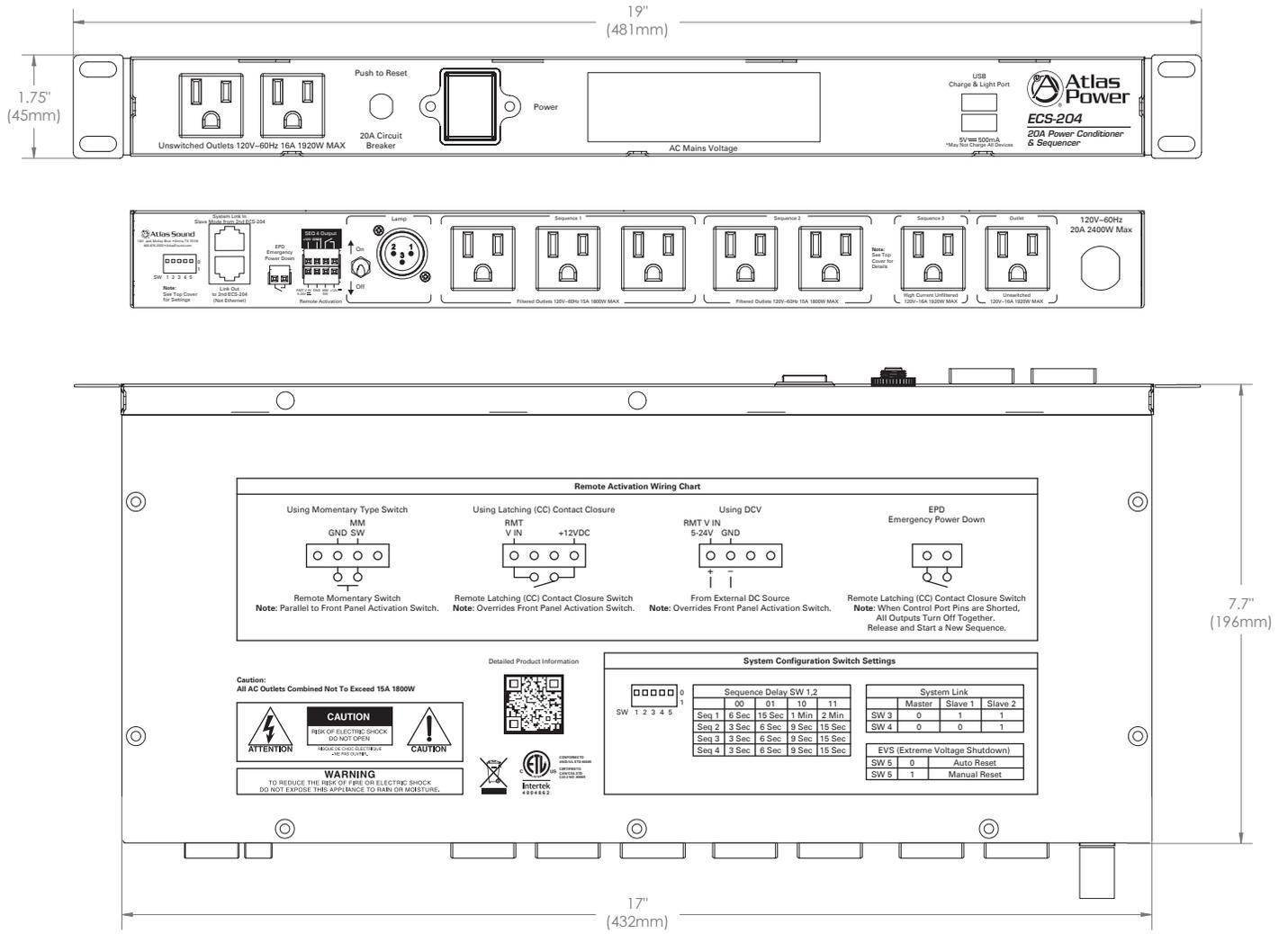
The ECS-204 also features noise filtering for unwanted Radio Frequency Interference (RFI) that is commonly introduced into the AC lines by nearby radio transmitters or wireless products. EMI filters are incorporated to reduce noise from Electromagnetic Interference (EMI) from items such as electric motors, switching power supplies, and lightning. The benefit of these filters can be seen on video products or audibly by reduced static pops and external signal interference. High and low AC Main line voltages are another major contributor to equipment failures. High line, also known as surges, are a slower steady state rise in voltages ranging from 128VAC and up. They can be caused by fluctuations in the utility company's power lines or industrial equipment turning On / Off and are on the same power leg of the building's incoming AC. Low line, also known as brownouts, happen when the AC Mains drops below 107VAC. Most of the time it is caused by the utility company not being able to supply enough power during heavy utility consumption time periods, such as heat waves. Another factor would be from voltage drops in AC lines due to long transmissions. The ECS-204 will not only identify if one of these conditions occurs, but under extreme variances in the AC Mains, it will shut off the power to the equipment. The Abnormal Voltage indicator on the front panel will flash if the AC Mains is between 128VAC and 132VAC or 107VAC and 101VAC. This is to identify that a surge occurred and may have damaged voltage sensitive equipment. If an extreme voltage swing occurs above 132VAC or below 101VAC, the ECS-204 Extreme Voltage Shutdown (EVS) protection circuit will automatically activate and turn all outlets off until it is manually reset or the voltage is stable. The ECS-204 offers sequenced power management control, along with noise filtering and spike / surge protection making it the most compact, effective power management protection system on the market today.

System	
Type	Power Sequencer, Power Conditioner & Suppressor
Sequencer Sections	3 Internal Sections and 1 External Output
Load Rating	20A
Front Panel	
Outlets	2 Unswitched
Lights	USB Port for Aftermarket Light
Activation Switch	Momentary
Circuit Breaker	20A Resettable
AC Mains Voltmeter	Three Digits, Digital, 1.5% Tolerance
Front Panel Indicators	
Sequencer Sections 1 / 2 / 3 / 4	Green, Qty 4
Abnormal Voltage Indicator	Red, Qty 1
AC Fault Indicator	Red, Qty 1
Breaker Open Indicator	Red, Qty 1
Wiring Fault Indicator	Red, Qty 1
External Trigger Mode	Red, Qty 1
System On	Red, Qty 1
Slave Mode	Red, Qty 1
Rear Panel	
AC Outlets	7 Outlets Total, Sequence Section 1 (3 Outlets), Sequence Section 2 (2 Outlets), Sequence Section 3 (1 Outlet), Unswitched (1 Outlet)
Remote Activation	Trigger Momentary Contacts, DC V In 5-24VDC, Momentary, Latching, 4 Position Euro / Phoenix Type Connector
EPD (Emergency Power Down)	Latching Switch Activated, 2 Position Euro / Phoenix Type Connector
DC Output	12VDC 100mA Output (Always On)
LED Light Socket	XLR Socket to Provide 12VDC for Optional 18" Gooseneck Lamp
LED Light Switch	Two Position On / Off
System Link Port	Link In & Link Out Ports, RJ45 (Not Ethernet)
System Setting DIP Switches	5 Position DP SW, Sequence Delay, System Link, EVS Settings
Grounding Terminal	Hand Screw Type Terminal to Chassis Ground
AC Mains Power Cord	9' (3 Meters) 12-gauge gauge, AC Male Plug is 20A NEMA 5-20
Technical Data	
Current Rating	20A
Operating Voltage	102VAC - 132VAC
Power Consumption	12 Watts
Delay Adjustments (Assignable)	Min 3 Seconds to 15 Seconds, Max 6 Seconds to 2 Minutes
High Voltage Surge Protection	Trigger at 133VAC, 1 ms Typically
Low Voltage Protection	Trigger 101VAC, 1 ms Typically
Voltmeter Accuracy	±1.5VAC
Spike Protection Modes	DCS (Dual Clamping Suppression) Circuitry on Incoming AC Mains and Each Sequential Section Output
Minimum Spike Clamping Voltage	460 VRMS @ 3,000A
Maximum Spike Clamping Voltage	6,000V
Maximum Spike Clamping Resp. Time	1 Nanosecond
Spike Clamping Voltage @ 100A	1250Vp for 20µs
Maximum Surge Current	6,500A
Energy Rating @ 2ms	2000 Joules
Noise Attenuation EMI/RFI Sequencer Section 1 & 2	-10dB @ 10 kHz, -40dB @ 100 kHz, -100dB @ 10 MHz
Unit Operating Temperature Range	41° - 95°F, 5° - 35°C
Humidity Range	5% to 95% Relative Humidity

Mechanical	
Chassis Finish	Black
Product Dimensions (HxWxD)	1.75' x 19" x 8.5" (45mm x 481mm x 216mm)
Unit Weight	10 lbs. (4.53kg)
Agency Approvals	
Safety Listing	ETL (UL 60065 Standard)
Package Contents	
ECS-204	Qty 1

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Dimensional Drawings



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Architect and Engineer Specifications

The electronic control system sequencer panel and power conditioner shall be AtlasIED Model ECS-204.

The Electronic Control System Sequencer and Power Conditioner shall be equipped with a front panel digital voltmeter to monitor AC mains, and LED indicators to alert the user to abnormal voltage, breaker open, wiring fault, AC fault in addition to the 4 sequence activations of the unit. All can be activated via the unit locally or remotely. Front panel activation is via a momentary switch, while rear activation can be accomplished via a remote momentary switch, latching switch, or by 5-24VDC.

Front panel shall also feature dual 5V USB ports for use with external lighting or for charging USB enabled devices. The rear panel shall be illuminated via an optional XLR plug in lamp with a separate on/off switch for activation.

The power sequencer shall include 3 un-switched (2 front panel and 1 rear panel mounted) and 6 switched outlets (rear mounted) in 4 sequence activated groups. Sequence 1 when activated, shall turn on 3 outlets, Sequence 2 when activated, shall turn on the next 2 outlets, and Sequence 3 when activated, shall turn on the next single outlet, and Sequence 4 shall turn on a 12VDC trigger & Contact Closure output for remotely switching an additional outlet assembly, such as AtlasIED ECM-20SH. The Sequence reverses (4,3,2,1) upon initiating activation again after on sequencing is complete.

Four Sequence timing delay modes shall be selectable via the first 2 positions of the rear panel 5-way Dip Switch. The four modes shall be:
Mode 1 = SQ1-6 sec delay start, SQ2-3 sec, SQ3-3 sec, SQ4-3 sec.
Mode 2 = SQ1-15 sec delay start, SQ2-6 sec, SQ3-6 sec, SQ4-6 sec.
Mode 3 = SQ1-1 min delay start, SQ2-9 sec, SQ3-9 sec, SQ4-9 sec.
Mode 4 = SQ1-2 min delay start, SQ2-15 sec, SQ3-15 sec, SQ4-15 sec.
Sequence delay settings shall apply to local unit.

Up to 2 additional ECS-204 units shall be linkable using the System Link In and Out RJ45 connections. The Master/Slave 1 or Slave 2 rear panel dipswitch setting shall determine the sequence timing of the hand-off from Master to each Slave after each unit complete their set Sequence. Unit shall also include an Extreme Voltage Shutdown 2 pin contact closure that can be connected to shut all outlets off immediately when the two pins are shorted using a button or key for local fire code requirements. A dipswitch shall be available to set the reset of the Extreme Voltage Shutdown to Auto or Manual.

Protection of incoming AC mains and Sequence 1 and 2 spike suppression shall be accomplished by DCS (Dual Clamping Spike / Surge Suppression) circuitry with 3 stage MOV protection circuits. Noise Attenuation of EMI/RFI in Sequence 1 & 2 shall be 10dB @ 10 kHz, 40 dB @ 100 kHz and 100 dB @ 10 MHz. Tested and Agency Listed MET Code (UL 1449).

Unit shall be constructed of 16-gauge CRS finished in black epoxy powder coated CRS with integrated 1 space brackets for rack mounting.

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