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JUNE 2020 | TFWM.COM

## FOR-A HVS-2000 Video Switcher Helps Pivot The Orange Conference



### Reviews

QSC'S KS118 SUBS

TF RACK FROM YAMAHA

### Out of the Box:

ALTMAN LIGHTING'S GENESIS  
LIGHTING CONSOLE

THE KSL-SUB FROM  
D&B AUDIOTECHNIK

THE REVELATION II FROM  
MXL MICROPHONES

LUMICORE FROM LUMINEX

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**W**ith the proliferation of digital audio, video, and advanced lighting technology, many theaters, houses of worship, stadiums, and other AVL venues need advanced power protection and control solutions that will provide connectivity to power combined with convenient on and off control. While many of the new AVL technologies draw less electrical current than previous models, there are simply many more devices added to the average installation, which has made power automation more important than ever.

It used to be that AVL installations fell into two buckets; there were the large venue installations with widely distributed electrical gear, and then there were the smaller single room AV installations that could be managed by one or two rack mounted sequencing modules.

The large venue installations were best served by wall mounted power control solutions such as motorized circuit breaker panels or wall mounted electrical relay control panels. The theory here being that all electrical devices, regardless of installed location, had to eventually be protected by a circuit breaker at a centralized location. If you add control to this centralized meeting point, then you have greatly lowered your installation and maintenance costs.

These wall mounted control panels operate at the circuit level and can be set up into zones in order to operate subsets of

equipment separately as well as having sequencing and power protection built in at the panel level. With widely distributed gear — much of it hanging high off the floor— this greatly simplifies power distribution and control.

The small AV installations have historically been best served by the single-circuit, rack mounted sequencing module — of which there are many options. The theory in the small installs was simple as well, all the gear is in a single rack in a single location so integrators can mount the control where the devices requiring electricity are housed, and bring control to one point.

Today, we are seeing the electrical game change. There are new digital

technologies deployed and others that are gaining in popularity that require decentralized equipment racks with power control being coordinated at multiple locations. In other words, there is a new power control solution needed. Solutions here are harder to find but increasing as new products are being developed and introduced into the pro AVL marketplace.

#### **Consideration 1: Venue Size and Gear Distribution Area**

AVL gear is being more widely distributed all of the time. Power management these days isn't limited to one room — or in some cases, one building — and even when it is there is

probably gear in every corner. There can be projectors, video walls, audio devices, speakers and lighting fixtures spread out over the entire area or campus, which can make convenient control more complicated. However, with today's power control options, controlling large venues or equipment across a multisite campus can be done by networking units to operate as a single system — provided they're hooked up to the same IP network. There's no distance limitation. In addition, these sophisticated systems enable control of lighting and AV gear across multiple control zones and via multiple control protocol inputs and simple contact closures. Networked power control

# Step in Time Sequential Power Control Is Critical to Today's HoW AVL Installations

BY MARK BISHOP

systems allow you to operate far-flung gear on the same operating interface.

### **Consideration 2: Sequential Power Automation for Today's Digital Audio Equipment**

Although traditional sequencers were originally created to spread out the electrical inrush associated with turning on high-powered amplifiers to prevent nuisance breaker trips or damaging loudspeakers, the advent of soft-start amplifiers has rendered the sequencer's

lighting fixtures and LED video wall panels can have an inrush electrical draw thirty times the normal operational requirements. In fact, most LED video wall manufacturers recommend sequential power control when powering on their installed panels.

Another wrinkle to the sequential operation of newer AVL systems is the need for customized or flexible step-rates and delay settings. Today's sophisticated digital consoles, wireless microphones, and other

sequencing capability can be customized to provide the proper order of sequencing and the time required between each step in the sequence.

### **Consideration 3: Managing More Powerful Equipment**

More often AVL gear requires 208/240 volt power. This is true for both audio and LED lighting. Higher voltage provides greater wattage availability for high performance gear. Many older power control solutions only offered 120

Cost of Electrical Contractor Installation

In smaller venues or with small installations, the cost of electrical installation may be prohibitive. In many smaller jobs, the work is installed entirely by the low-voltage integrator. In this case, a rack-mounted option with standard cords and plugs will be the least expensive option.

With today's advanced power control options, rack mounted units can be networked together to create a comprehensive solution. Users simply plug in to

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protective role less important. Sequencers today are still needed for some brands of amplifiers and powered speakers, however powering the audio system down is more about protecting the equipment by removing it from the power grid when not in use, than to spread out electrical inrush.

Interestingly, powering on and off LED lighting systems and LED video walls has become a far bigger inrush concern than audio systems these days. Because there are so many more LED fixtures in today's HOW installations, turning lighting on and off now requires sequential power control in order to avoid nuisance breaker trips or damage to the lighting equipment. LED

installed audio equipment demand specific boot-up and shutdown sequences. They also require a set amount of time before they're fully booted and can perform the necessary "handshake" to communicate with other equipment in the chain to function properly. If one or more components of a digital system doesn't "see" the console, for instance, then that equipment won't function. In short, digital systems must be turned on in a specific order, with specific delay times between each step for the system to function correctly. What's more, the delay times and step rates differ dramatically between manufacturers. Today's power control solutions featuring advanced

volt power. New systems make 120 and 240 volt options that allow for the control of all electrical loads on a single platform.

In addition, superior electrical control systems offer multiple circuits of current control in single rack mounted or wall mounted enclosures. This saves rack space and eliminates the need to jury-rig multiple single circuit power control boxes together.

Investing in proper power management also protects other sensitive gear in the rack and the venue. More sophisticated solutions will offer the ability to program auto shutdown as well as provide under and over-voltage protection to protect very expensive AVL systems.

Consideration 4: The

a power source, connect whatever system needs power, and set the start-up parameters on the browser interface.

The rapid evolution of AVL systems demands that power solutions evolve as well. Installing and scaling power management properly ensures that any size system can be run without fear of constant reboots, or power loss. With more sophisticated power control and management solutions being offered at the rack, it's never been easier to deliver great installs and protect your state-of-the-art AVL system. **T**

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