PANDUIT
PULSE POWER

Pulse Power Fault Managed Power System

Higher Power. Longer Distance. Superior Safety.

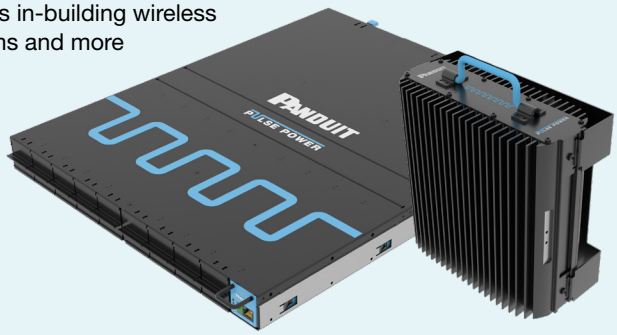
Overview

The Pulse Power System is a novel remote power delivery system that allows wireless System Integrators to provide power to wireless systems. It can remotely power electrical devices such as remote radios, small cells, security cameras, access controls, and indoor and outdoor Distributed Antenna Systems (DAS). Pulse Power is ideal for larger venues or complex installations that require centralized power management.

Pulse Power is designed to comply with UL 1400 standards for a safer, easy-to-install power delivery system that provides significant time and cost savings to the user. Alongside standard communications cabling, the solution can provide remote power over standard multi-conductor cables without conduit or separation to simplify equipment installation, increase deployment speed, and significantly reduce deployment costs. The system is scalable with a hot-swappable configuration, allowing it to grow with rising wireless demands.

Pulse Power is a safe, efficient, reliable, and practical remote power delivery system that will go the distance.

- Redundant fault management for ultimate safety
- Safe to handle like Class 2 power, substantially more power and distance
- Hot-Swappable configuration for ultimate flexibility and upgradability
- Simple to install, startup, and troubleshoot
- Endless remote monitoring and control capabilities
- Novel remote power delivery system
- Designed to comply with latest industry standards
- Powers in-building wireless systems and more



How does it work?

The Pulse Power System has a new patent-protected technology that transports power through a pulse current waveform. Pulse Current is comprised of short duration pulses (e.g., 3 ms), where each pulse contains a power ON and power OFF period. Delivering power in this way allows the Pulse Power system to detect faults and stop power transmission almost instantly.

Pulse Power consists of two main components:

Pulse Power Source
The Pulse Power Source takes standard AC power (for example, 110/220V outlets or 208V source from a rack-PDU) and converts it into higher voltage (+/-180V) limited current DC power. It then transforms the DC power signal into a pulse current waveform delivered over a standard multi-conductor copper cable. Each pulse has a short duration of time (e.g., 3ms). The redundant fault management system within the Source will almost instantly detect a fault (e.g., a cable short or a person touching the wires). Once a fault is detected, it triggers the system to stop power transmission within milliseconds, making it safer than traditional powering methods. Delivering power in this manner enables the use of a thin copper cable and wiring methods afforded to communications wiring per NEC guidelines* where cables housed in conduit are not required, and technicians may complete the installation.

Pulse Power Converter
The Pulse Power Converter receives the pulse current waveform delivered by the Pulse Power Source through multiple multi-conductor cables. It then converts the pulse current waveform into +/-48Vdc power, which can power multiple end devices.

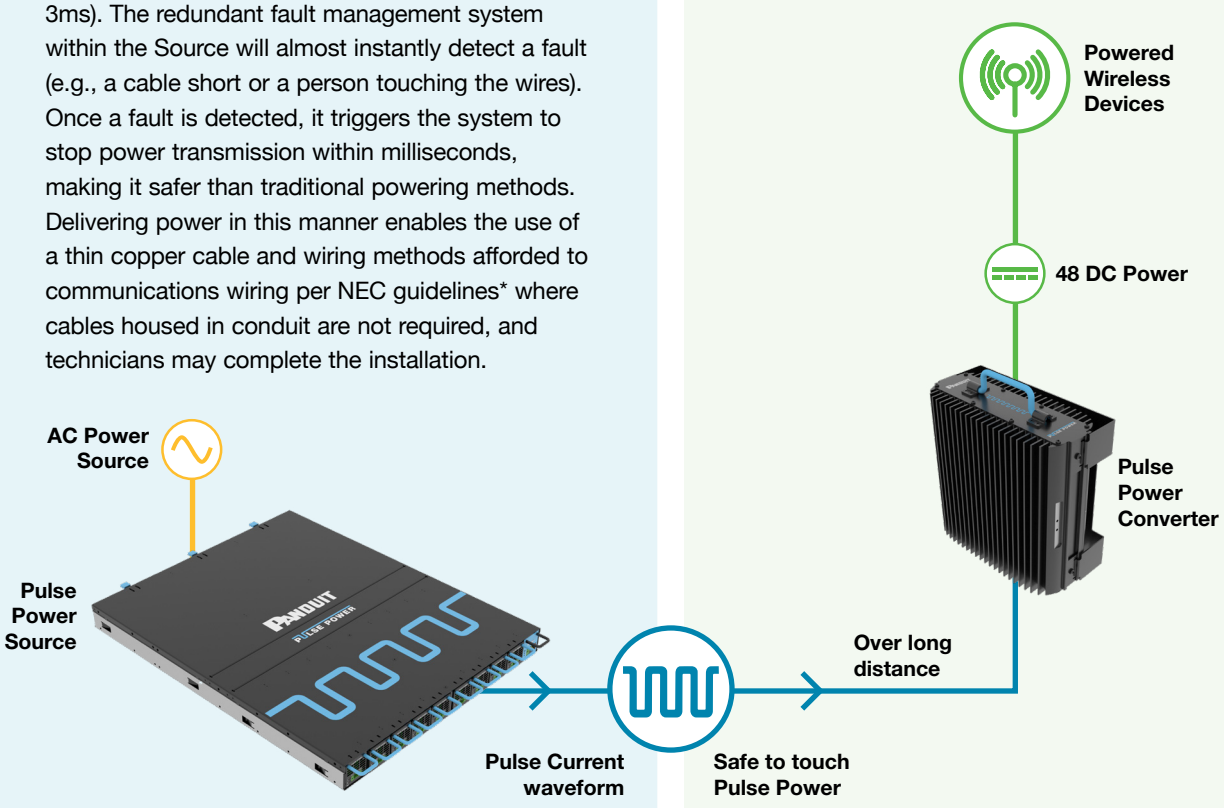


Figure 1: The Pulse Power Source takes power, coverts it to higher voltages, and then transforms the power into a pulse current waveform that is delivered over standard multi-conductor cable as shown in the image above.

*Class 2 is safe because of power limitation, Pulse Power Source is safe because energy will be limited by the fault prevention system during a fault. Pulse Power is designed to meet the new UL-1400 standard which refers to this technology as a Fault Managed Power System. It will be referred to as Class 4 power in a new NEC Article 726.

Feature Summary

Safe High-Voltage Power

Significantly more power is delivered over longer distances, using less copper than traditional Class 2 installations. A redundant fault management system that detects and almost instantly stops power transmission when a fault occurs, making it a safe power delivery system that has all the safety benefits of Class 2 power systems.

Simple & Efficient Installation

No conduit, junction boxes, circuit breakers, or permits are required as with traditional power. Technicians may install copper and fiber cabling simultaneously for greater cost and time savings over traditional power. The centralized design of the Pulse Power System makes it easy to back up and provides ultimate flexibility for larger venues, unique locations, and places where conduit is challenging to install. Easy-to-install connectors for secure and reliable connectivity accompanied with cable management solutions provide savings on rack space.

Latest Industry Standard Compliance

Pulse Power system is safe and designed to comply with the latest industry standards, for peace of mind when hiring technicians. Gain faster approval from local Jurisdiction Holding Authorities (JHA) and expedite installation.

Remote Monitoring & Control

Seamless web-based access to the intuitive Panduit user interface allows System Integrators to gain total visibility over power usage with the ability to monitor and control systems from a remote location. Advanced control features allow the remote shutdown of individual components in addition to a sophisticated alarming system that increases operational efficiency with the ability to manage, maintain, and troubleshoot the system remotely. Stay in control of your power.

Hot-Swappable Components

Plug-and-play installation and configuration creates a flexible and scalable power delivery system to grow with your wireless demands. Hot-swappable components minimize equipment downtime and reduce business interruptions. Intelligent LED indicators on all system components for easier installation, onsite maintenance, and troubleshooting.

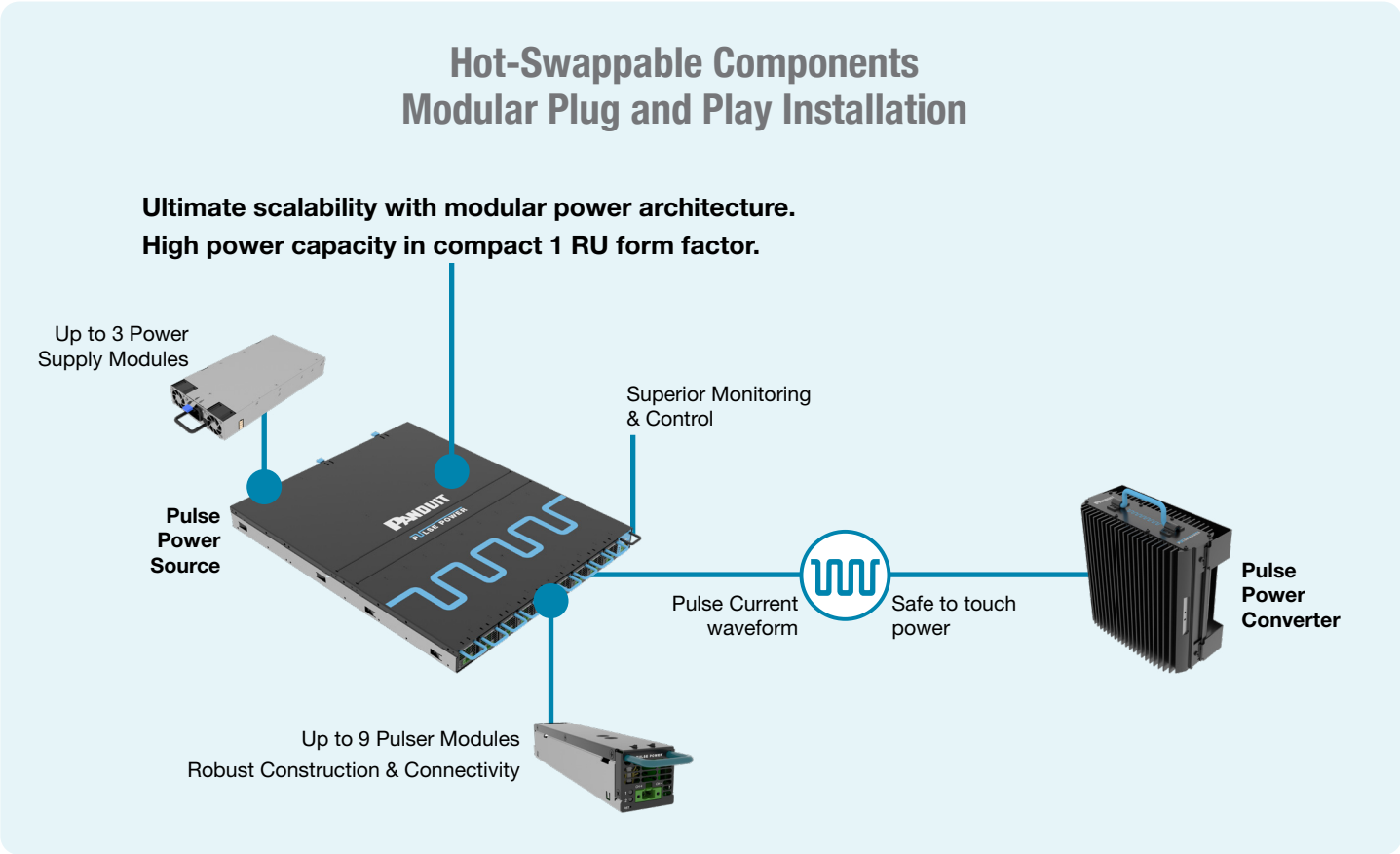


Figure 2: Overview of the Pulse Power System, showing the Source which typically resides in the headend, delivering power in a pulse current waveform, through multi-conductor cable, and sending it to the Pulse Power Converter which is typically distributed throughout the building near devices that require power.

In conclusion, the Pulse Power System delivers optimal safety, efficiency, and control to the customer. System Integrators can now include cutting-edge technology when providing centralized power to unique locations. Its scalable and flexible design allows future-proof initial deployments, where customers can add more power when needed. Pulse Power is a safe, reliable, and practical remote power delivery system that will go the distance. Welcome to the new world of Pulse Power. For more information on the Pulse Power offering, visit www.panduit.com/pulse-power.

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