Smart Power - Safe, Scalable Solutions for Smart K-12 Schools

Fault Managed Power Systems (FMPS)

As schools adapt to digital learning and heightened safety needs, reliable, cost-effective power infrastructure is essential. Fault Managed Power Systems (FMPS)—classified as Class 4 Power in the 2023 NEC—provide a safe, high-voltage DC power solution for school campuses.

Standardized by UL and developed with industry leaders, FMPS combines low-voltage safety with high-power delivery, making it ideal for today's K–12 schools.

Why FMPS Makes Sense for K–12 Schools

Built-In Safety for Students and Staff

FMPS is certified to UL 1400-1 and compliant with NEC Article 726. It detects and isolates electrical faults—like short circuits, arcing, or accidental contact with energized wires—within milliseconds. **This rapid detection prevents hazards and significantly reduces the risk of fire or shock in school environments.**

Remote Monitoring & Alerts

District-wide IT teams have centralized, web-based access to real-time alerts—such as **vape detection, occupancy monitoring, and system faults** —helping schools stay safer, smarter and more connected.

High Power, Long Reach

Delivers up to **600W per copper pair across distances up to 2 km** —perfect for sprawling campuses and multi-building installations.

Class 4 Systems are Safer across the board!

Hazard	Fault Type	GFCI	AFCI	Class 4
Shock	Line-to-Earth	☑	☑	☑
	Line-to-Line	⚠	⚠	☑
Fire	In-Line Arc	🔥	☑	☑
	Parallel Arc	🔥	☑	☑
	Line-to-Line resistive	🔥	🔥	☑
	In-line Resistive	🔥	🔥	☑

Source: BICSI 2022 Speaker Section 23: Class 4 Power

Fast Deployment

FMPS uses low-voltage installation methods, which means there's **no need to rewire existing electrical systems**. Instead of running conduit and pulling traditional electrical wiring, installers can use standard data cabling—saving time, labor, and cost. This makes it **faster and less disruptive to upgrade classrooms**, gyms, and administrative buildings, even during the school year.

Up to 14% Lower Installation Costs

FMPS uses lightweight, low-cost cable and doesn't require licensed electricians. Ideal for both new schools and retrofits.

Up to 40% Lower Operational Costs

Reduce energy consumption and streamline operations, cutting utility and maintenance costs.

90% of Install is IT Infrastructure

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Standardized by UL and developed with industry leaders, FMPS combines low-voltage safety with high-power delivery, and allows districts to standardize on just four core components—hot-swappable by onsite facilities staff without the need for specialized service calls. Any component can be used interchangeably across buildings, streamlining maintenance and reducing downtime.

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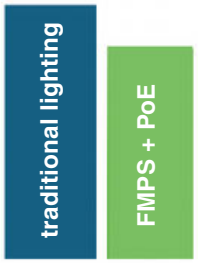

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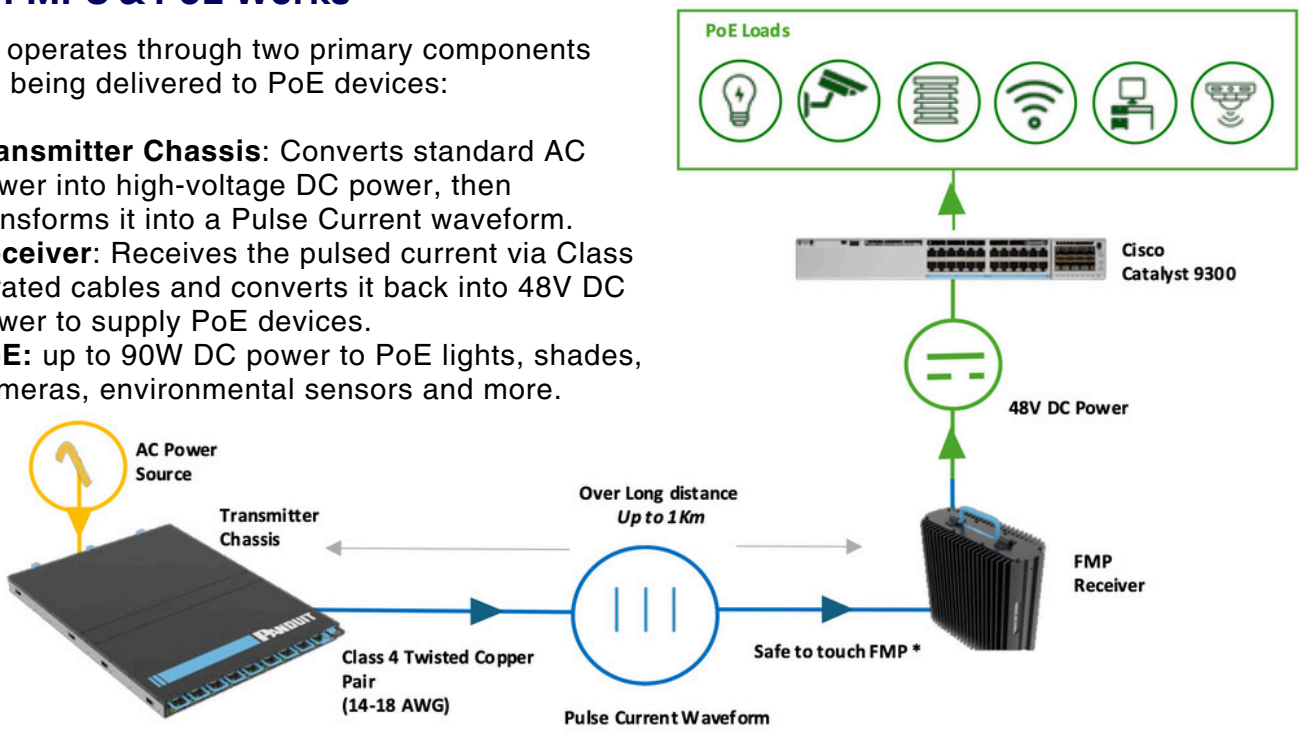
How FMPS & PoE Works

FMPS operates through two primary components before being delivered to PoE devices:

- **Transmitter Chassis**: Converts standard AC power into high-voltage DC power, then transforms it into a Pulse Current waveform.
- **Receiver**: Receives the pulsed current via Class 4-rated cables and converts it back into 48V DC power to supply PoE devices.
- **PoE:** up to 90W DC power to PoE lights, shades, cameras, environmental sensors and more.



Traditional Electrical Infrastructure vs. Fault Managed Power and PoE?

	Traditional Lighting Controls	PoE Lighting Controls and FMPS
Infrastructure Required	• Existing electrical infrastructure	• Uses FMPS power and existing IT / low voltage infrastructure
Power Management Features	• Basic timers or programmable relays	• Adjustable for energy demand and space usage in real-time
Safety Features	• Circuit breaker, GFCI • Emergency Power battery back-up	• Fault Managed Power (7 fault detection) • Emergency Power
Lighting Features	• Simple, reliable on/off and dimming controls	• On/off and dimming controls via software • Remote access, automated schedules, real-time adjustment • Customizable lighting scenes
Controls Features	• Limited automation • Minimal or no data collection • Basic scheduling	• Occupancy and daylight sensing for energy-efficient automation • Advanced scheduling, controls, and real-time usage analytics • Seamless integration with IoT devices and Smart Building systems
Infrastructure for IoT	• None	• Built in system capacity for IoT sensors: Air quality, Smart Desks, USB-C Power

Smart Power is the Future of School Building Infrastructure

Contact us to learn more about how Fault Managed Power Systems (FMPS) and PoE provide K–12 schools with a future-ready foundation that is energy-efficient, safe, and scalable.