Enhanced 12-Point Power System Checklist

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OPEN SECURE AUTOMATION

	Secure, embedded microcontrollers, 32-bit or more *Embedded controllers should be smart and secure by design; you should be able to diagnose and store years of data on a power supply by leveraging the advanced capabilities of a smart controller.*
	Advanced cyber security, built-in to the electronics (root of trust, applied certs, FIPS 140 compliant) *Cyber security should be smart, simple, and impenetrable. For more information, see our white paper "Chapter Three: Fundamentals of Intrinsic Cyber Security."*
	Physical, electrical and logical coupling *Logical coupling of devices enables easy integration with external systems. No headaches, just plug-and-play.*
	Ethernet communications *Remotely monitor and diagnose power system issues. Update firmware over the network to ensure up to date functionality and features.*
	Advanced, integrated redundancy *Redundancy should automatically select the highest load output between multiple power sources using built-in logic. It should be a simple automatic transfer with built-in redundancy, so smooth that you don't even have to think about it.*
	Cross platform system integration *Connect to virtually any network, controller, radio, switch, and firewall.*
	Advanced real-time, multivariable diagnostics including capacity, remaining time, temperature, voltage, current, max error, charge state, etc. *The power supply should be able to self-report issues and diagnose a predicted problem. You should get smarter with your power, identify issues before they occur, prevent catastrophic failures through knowledge of detection.*
	Integrated and advanced Serial over Ethernet (SoE) connectivity *Power should work with legacy systems and serve as an edge gateway for other connected components.*
	OPC UA Server functionality *Connect, browse, and monitor in minutes.*
	Sealed all-metal construction; IP67 and NEMA 6 rating for power supply and UPS; EMP Hardened *Power should be tough, rugged, and prepared for any environment. The metallic design should enable convection cooling and solve overheating issues. Metal enclosure also provides EMP hardening without secondary containment (MIL-STD-461).*
	Lithium-ion battery back-up for UPS *Using lithium-ion batteries decreases charge time, increases life expectancy, and ensures the greatest number of charging cycles.*
	Secure supply chain *The power supply should be owned by the manufacturer, not delegated to a series of unknown suppliers. Controlling the supply chain ensures that you are aware of where your power supplies are coming from, that they are not counterfeit, and can ensure the longevity of their manufacturing process.*