FUNDAMENTALS



GRIDMASTER® INTELLIGENT POWER CONTROLLER (IPC)



PROGRAMMABLE LOGIC **CONTROLLER (PLC)**



CLOUD-BASED CONTROLLER



MICROGRIDS

Software and hardware system built specifically for secure microgrid applications



INDUSTRIAL AUTOMATION

Repurposed system originally designed for a wide variety of repetitive automation processes



DATA STORAGE

Remote, server-based control system inspired by common data storage functions



EVOLVING CODE

Flexible control algorithms evolve and accomodate updates with no changes to core code



LINEAR CODE

Specific instruction sequences require cumbersome custom engineering, making changes difficult



REMOTE SOFTWARE

Open system requires uninterrupted wireless communication to local equipment for full functionality



EMBEDDED CYBERSECURITY

Defense-in-Depth protection with seven security layers built into the system



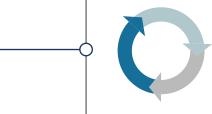
SECURITY VULNERABILITY

PLCs orginally built with few or no security measures, and firewalls added later are vulnerable to penetration



LARGE ATTACK SURFACE

Security is needed at every level from local servers to remote devices. Many potential pentration vectors



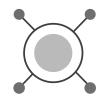
DISTRIBUTED CONTROL

Redundant architecture eliminates single points of failure and increases system resiliency



PSEUDO-DISTRIBUTED CONTROL

PLCs typically are centralized, however **Real Time Automation Controllers** simulate a distributed architecture



CENTRALIZED CONTROL

Centralized bus architecture with cloud-based control has a single point of failure, limiting resiliency

PERFORMANCE FEATURES

SYSTEM CONTROL

