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Use Case

Universal Industrial Gateway

Expanded Use Cases

Empowering Innovation for over 40 years

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Expanded Use Cases

By supporting multiple industrial and IT protocols within a simplified configuration model, Universal Industrial Gateway enables faster deployment, improved operational efficiency, and reduced lifecycle costs. These capabilities make it well suited for modern data center environments where rapid response, scalability, and interoperability are critical. The following examples illustrate how the gateway can be applied across common data center use cases.

Real-Time Power Monitoring and Capacity Planning

Universal Industrial Gateway can be deployed to integrate power infrastructure throughout a data center, providing centralized access to real-time electrical data. Most modern power assets—such as Power Distribution Units (PDUs), Uninterruptible Power Supplies (UPS), and Remote Power Panels (RPPs)—support communication protocols including SNMP and Modbus.

Using the gateway, a DCIM system can continuously collect power consumption data from these devices, enabling visibility at the rack, row, or even individual circuit level. This granular insight supports more accurate capacity planning, reduces over-provisioning, and allows operators to optimize power utilization, revenue per rack, and overall floor-space efficiency.

Unifying Multi-Vendor Cooling Systems for Optimized Thermal Management

Data centers frequently operate a heterogeneous mix of cooling equipment from multiple vendors, including Computer Room Air Conditioners (CRACs), chillers, and evaporative cooling systems. These platforms often rely on different communication protocols, resulting in siloed monitoring and fragmented control strategies.

Universal Industrial Gateway acts as a central translation layer, normalizing data from disparate cooling systems into a unified protocol that can be managed by a centralized DCIM platform. This enables operators to shift from reactive, localized cooling control to a coordinated, facility-wide strategy that dynamically adjusts cooling output based on real-time IT load—improving thermal efficiency while reducing energy consumption.

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Integrating Physical Security and Environmental Monitoring

Physical security and environmental monitoring systems are often deployed independently from IT infrastructure, particularly in legacy data centers. Access control systems, surveillance equipment, and environmental sensors—such as water leak detection or smoke alarms—may rely on older or proprietary protocols.

By connecting these systems through Universal Industrial Gateway, their data can be integrated into a DCIM or BMS platform alongside IT and power infrastructure. This unified visibility allows operators to correlate physical events with IT and environmental conditions, enabling faster response and more informed decision-making—for example, linking unauthorized access attempts to server alerts or environmental anomalies.

Enabling Predictive Maintenance Through Data Aggregation

One of the most significant long-term benefits of a protocol gateway is its ability to support predictive maintenance initiatives. By continuously aggregating operational data across facility systems—using both periodic and on-change data collection—Universal Industrial Gateway builds a comprehensive historical dataset.

This data can be analyzed by advanced analytics platforms or AI-driven monitoring tools to identify subtle trends and early warning signs, such as gradual increases in fan vibration, abnormal temperature drift, or rising voltage levels. Detecting these patterns early allows maintenance teams to address issues before failures occur, reducing unplanned downtime and extending the lifespan of critical infrastructure assets.

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The Spectrum Controls Solution

Industrial environments generate vast amounts of valuable operational data, but that data is often locked inside disconnected systems—modern Ethernet-based equipment, legacy serial devices, and proprietary controllers that were never designed to communicate with one another. This fragmentation limits visibility, increases operational risk, and makes it difficult to fully leverage existing assets.

Universal Industrial Gateway solves this problem by creating a unified communication layer across diverse industrial systems. By natively bridging multiple protocols and device generations, it enables real-time access to operational data without requiring costly rip-and-replace upgrades. Existing equipment remains in service while becoming part of a modern, connected architecture.

With unified data access, organizations can move from reactive operations to data-driven decision-making. Real-time monitoring enables faster troubleshooting and more informed control actions, while historical data collection supports trend analysis, performance optimization, and predictive maintenance. Subtle changes in process variables, electrical characteristics, or device behavior can be identified early—reducing unplanned downtime and extending asset life.

From an architectural standpoint, Universal Industrial Gateway supports secure network segmentation and controlled data exchange between operational and enterprise systems. This allows organizations to modernize safely, aligning with best practices while maintaining operational integrity.

Universal Industrial Gateway turns **isolated industrial systems into connected, intelligent assets.** It provides a scalable foundation for operational efficiency, risk reduction, and long-term digital transformation—allowing organizations to extract more value from the infrastructure they already own.

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About Us

For over 40 years, Spectrum Controls has been a trusted manufacturer of cutting edge industrial I/O, and is the first company to build licensed, core-technology I/O modules for Rockwell Automation® as a proud Technology Partner.

Focusing on expanding the capabilities of control systems, we offer a myriad of solutions to tackle the unique projects you face including high- density I/O, universal analog input, and specialized modules to harness the full capability of any system. All of our licensed hardware includes full TechConnect™ Support through Rockwell Automation support channels.

Our Universal Industrial Gateway combines the capabilities of multiple typical gateways into a single module that allows for seamless communication between multiple devices with a choice of 12 different protocols.

For visual communications in critical production environments, InView industrial LED displays offer robust hardware and class-leading ease of use thanks to our EasyTag technology.

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