PowerG +: Building on the Best Wireless Security Protocol

Among all the technologies that make up today's security systems, the wireless protocols that define how devices communicate with each other and the alarm panel often draw less attention than other flashier components.

However, they have a significant impact on everything from system performance to energy efficiency and security, making them a critical consideration for dealers and installers. After all, by choosing to sell certain products, dealers are also opting into the specific protocol, or protocols, that brand or system supports.

PowerG, Johnson Controls proprietary protocol for security and safety applications in homes and businesses, has been taking the market by storm since its introduction in 2011. First developed by Visonic, then acquired by Tyco and Johnson Controls, respectively, PowerG technology has been optimized specifically for the monitoring and controlling of wireless security and safety devices.

With four times the range of traditional wireless protocols and a multitude of built-in features to ensure reliable, secure, and efficient communications, it's now being used in millions of systems and devices worldwide.

Introducing PowerG +

In early 2025, Johnson Controls elevated this field-proven technology with the launch of PowerG +. PowerG + retains all the most-loved benefits of the first generation of PowerG — like its market-leading range, up to 2km, that enables repeater-free installations — while incorporating new, highly requested features and functionalities. In this piece, we'll share some of the key ways PowerG + has built on the best.

PowerG + Security Devices

Product availability may vary by region

How it Creates a Robust, Reliable Network

To understand how PowerG, and now PowerG +, unlocks the outcomes we'll cover below, it's first important to learn some of the innovative technologies it uses to facilitate a robust, reliable network. For instance, it relies on Time Division Multiple Access (TDMA) to allow multiple users (i.e., devices) to share the same radio frequency channel without interference by assigning each device a specific time slot to communicate with the panel. It also uses Frequency Hopping Spread Spectrum (FHSS) which allows the system to automatically scan and hop across up to 50 frequencies, 64 times per second, to keep hackers and jammers at bay. Moreover, it deploys Adaptive Transmission Power to optimize signal strength and adapt to post-installation changes in the environment.

These technologies together increase the overall performance and cyber resilience of PowerG +, while reducing latency and energy consumption. They also lay the groundwork for the following benefits:

A Smarter, Modernized Portfolio

Where it started: Johnson Controls has always offered an expansive portfolio of devices and accessories compatible with PowerG. The smart device ecosystem covers both indoor and outdoor applications for intrusion detection and safety — including motion detectors, environmental sensors, keypads, arming devices, and panic buttons.

Where it is now: PowerG + devices are now smarter than ever, integrating more environmental data through temperature sensing and other multi-sensing technologies. The devices are also sleeker and the packaging more modern. For example, matte-finish shells in multiple colors are now available that can be fitted to contact sensors to help them blend seamlessly into any environment. These new sensors will enroll on all of Johnson Controls IQ Panels, and the new features will be standard on all new devices, as well as accessible on other systems through future releases.

Enhanced Security and Privacy

Where it started: When PowerG was first created, two-way encrypted wireless protocols were mostly reserved for the commercial space. However, evolving cybersecurity threats and rising customer expectations around the security posture of their systems created a need for this technology to be available in both commercial and residential markets. This was achieved with PowerG, as it marked the first long-range, two-way wireless, AES-encrypted protocol for use in residential applications as well as large, complex commercial installations. The original PowerG offers end-to-end, 128-bit AES encryption for dependable, secure communications.

Where it is now: PowerG + maintains the 128-bit AES encryption while adding additional security measures. Equipped with encryption against cyber threats, PowerG + devices also feature two-factor authentication during enrollment. Most PowerG + sensors can also be upgraded or patched with over the air updates to enhance and future-proof their security stance.

Improved Power Management

Where it started: PowerG balances energy-efficiency with required performance. For example, it dynamically manages power consumption to achieve greener operations and extend the battery life of devices – allowing them to last up to 5-8 years before needing to be replaced.

Where it is now: On top of impressive battery life, PowerG + now gives dealers the ability to check the exact battery percentage of devices in real time. To date, they've only been able to see low-battery notifications, but they can now take a more proactive approach to planning the timing and tasks of their service calls.

Better Usability for Dealers/Installers

Where it started: As a wireless protocol, PowerG has always provided all the benefits of traditional wired security without the labor associated with running wires. This saves installers time and money, as does the quick and easy enrollment, configuration, and testing of PowerG-enabled devices. For example, PowerG devices are equipped with a built-in LED indicator that allows installers to test the signal strength in any spot without having to go back and forth to the main panel. Remote configuration and diagnostics of PowerG devices also make them easy to manage and troubleshoot.

Where it is now: Through enhanced auto-enroll, PowerG + devices make installations more foolproof than ever before – providing battery pull tabs, QR installation codes, and resized contact magnets to speed up the process. On another front, PowerG + Sensor Dealer Lockdown is now accessible to every dealer, providing takeover prevention at the device level. Dealers who opt into this feature can potentially see better profits as the length of time of their customer accounts increases.

Top Takeaways for Dealers

Today's security dealers must weigh many different factors when deciding which vendors and systems to work with. While the wireless protocol in any given product might not seem like a mission-critical variable, that couldn't be farther from the truth, since these standards influence how satisfied end users will be with their systems and how easy they are to install and manage over time.

PowerG + Indoor PIR Cam

PowerG + represents Johnson Controls continuous investment in its proprietary wireless technology to help power the next generation of security and home automation. For questions about growing your business with PowerG +, learn more by visiting **iqsecurityproducts.com/powerg-plus** or reach out to our team directly.

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