



Cybersecurity in Building Automation - A LOYTEC Perspective.



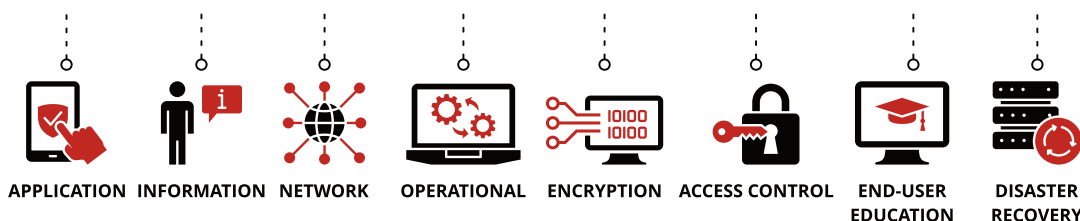
Why Cybersecurity is Critical in Building Automation

Building Automation and Control Systems (BACS) manage essential building functions such as HVAC, lighting, access control, and energy optimization. As these systems become increasingly integrated with IT networks, they also become more vulnerable to cyber threats.

Cyberattacks on BACS can lead to:

- **Operation disruptions** - Unauthorized access could disable HVAC, lighting, or safety systems.
- **Increased costs** - Attackers could manipulate energy settings, leading to inefficiencies and financial losses.
- **Security breaches** - Cyberattacks on access control systems, elevators, or surveillance could compromise building safety.

To ensure **secure, reliable, and compliant operation**, modern BACS requires a **proactive cybersecurity strategy**.



LOYTEC's Approach to Cybersecurity.

LOYTEC integrates **security-by-design**, ensuring that every device, network, and protocol follows the **Defense-in-Depth** principle:

- **Device Security** – Strong authentication, enforced password policies, and secure firmware updates.
- **Network Security** – Encrypted communication, VLAN segmentation, and strict IT/OT separation.
- **Perimeter Security** – VPN, 802.1X port authentication, and robust remote access controls.
- **Application Security** – Role-based access control and continuous monitoring.
- **Data Protection** – Encryption of credentials and certificate-based authentication.

This **multi-layered security strategy** prevents unauthorized access and ensures the **long-term resilience of building automation systems**.



Secure IT-OT Integration: Protection without Complexity.

One of the biggest challenges in modern buildings is the **integration between IT and OT systems**. While IT prioritizes scalability and connectivity, OT demands stability and operational continuity.

LOYTEC's Secure IT-OT Bridging Approach:

- **Physical Separation as the Preferred Method** – Whenever possible, IT and OT networks should be physically separated to minimize cyberattack risks.
- **VLAN Segmentation & BACnet/SC** – Where physical separation is not feasible, secure virtual segmentation ensures controlled isolation.
- **Secure Remote Access** – VPN with certificate-based authentication prevents unauthorized users from accessing critical systems.
- **Minimizing the Attack Surface** – Only necessary services and protocols are enabled, reducing vulnerabilities.

This approach ensures **flexibility while maintaining maximum security**.



Wireless Security at Wired Standards.

Wireless devices in BACS—such as **sensors, actuators, and IoT devices**—require the same security level as wired solutions.

LOYTEC supports **Bluetooth SIG Mesh**, a secure and scalable wireless communication standard, designed for professional BACS installations.

Key Features:

- **End-to-end encryption** of wireless communication.
- **Authentication and protection** against replay attacks and spoofing.
- **Seamless integration** with wired systems, maintaining consistent security across networks.



Security Standards and Future Readiness.

LOYTEC ensures that its products comply with **industry-leading cybersecurity standards** and remain adaptable to evolving regulations and threats:

- **IEC 62443-3-3** – Ensuring security levels for industrial automation and control systems
- **NIS-2 Directive** – Complying with EU-wide cybersecurity regulations
- **Cyber Resilience Act (CRA)** – Future-proofing against upcoming legislation

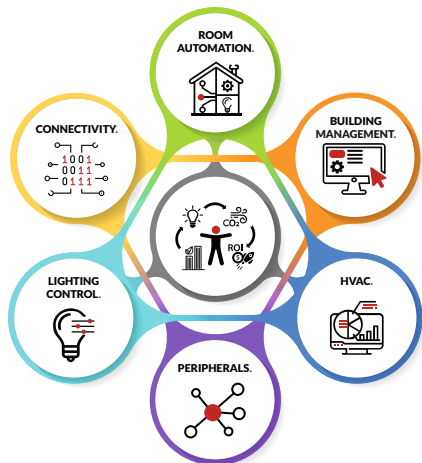
LOYTEC **continuously strengthens its security measures** to safeguard systems against emerging threats and regulatory changes, ensuring reliability and compliance over time.



Out-of-the-Box Security: Simplifying Cybersecurity for Integrators.

Cybersecurity should not be an afterthought—it should be a standard feature. LOYTEC solutions offer **built-in security**, making it easy for both integrators and end-users.

- **Secure default settings** – No default passwords, mandatory security configurations.
- **Centralized security management** – Seamless integration with LWEB-900 for streamlined access control.
- **Encrypted communication** – Support for **BACnet/SC, HTTPS, OpenVPN, and OPC UA.**
- **More Info:** Scan the QR Code to access the LOYTEC Cyber Security Guideline, with best practices for securing networks.



Stay Secure, Stay Ahead.

Cyber threats in building automation are real and growing, but LOYTEC has you covered. Our solutions are designed to keep your buildings safe, efficient, and future-ready.

Learn more at www.loytec.com

