

**Commercial Building Electrical Systems – Low Voltage Systems**

**Low Voltage Systems**

- Low voltage systems are comprised of electrical equipment that uses 50 volts or less.
- Common low voltages include 48 V, 24 V, and 12 V.
- Residential examples of low voltage systems include doorbells, garage door openers, home security sensors, thermostats, and landscape lighting.
- Commercial low voltage systems cover a wide array of categories, from fire protection to security systems to sound and communication.

**Fire Protection Systems**

Compliant fire protection systems are critical for preserving life and property within your building. The following low voltage fire protection systems are essential components in your overall fire safety efforts:

**Fire alarms:** From simple single-building fire alarms to complex fire alarm networks across multiple facilities, this low voltage system ensures everyone on the premises knows to evacuate during a fire emergency.

**Fire suppression systems:** This automatic equipment senses when a fire is present and douses it with dry chemicals, wet chemicals, liquid, gas, or foam to put out the fire without using water. You may need a fire suppression system if you have hazardous materials or delicate equipment onsite.

**Security Systems**

Building security is vital to prevent theft and vandalism and to keep your people safe. The low voltage security systems include:

**CCTV surveillance systems:** Closed-circuit television is comprised of surveillance cameras, digital recorders, and monitors designed to keep you informed of what’s happening in and around your building. With the right network setup, you can view live and recorded footage remotely for maximum security.

**Intrusion detection systems:** A network of motion sensors, door and window contacts, panic switches, and other measures make your building secure against intruders. If you also have monitoring services, the police are automatically notified when these sensors activate.

**Access control systems:** Decide which personnel are permitted to go where with a low voltage access control system. This utilizes card readers, biometric scanners, and other means to restrict access to certain areas of your office space, hotel, hospital, apartment building, or other structure.

**Sound & Communication Systems**

You can communicate important messages to the right people with these low voltage sound and communication systems:

**Paging and intercom systems:** It’s not efficient to deliver messages in person across your building, especially when you work in a large facility. A paging and intercom system with call stations and speakers increases the productivity of your business.

**Nurse call systems:** Relaying a message quickly in a healthcare setting could mean the difference between life and death. Nurse call systems include real-time location devices, wireless phones and pagers, and EMR databases to ensure your centralized or decentralized staff receives information quickly and efficiently.

**Mass notification systems:** When an emergency strikes, every second counts. A mass notification system makes it possible to deliver instructions to people within the building. With the proper networking, you can also send long-distance messages via email, text, or phone call to people offsite.

**Wireless clocks:** Synchronized clocks ensure a coordinated effort throughout your organization. Wireless clock integration is automatic and easy to control from a centralized location, simplifying the task of synchronizing your clocks.

## Networking Systems

All of the example low voltage systems require an efficient network to function correctly. Here are your connectivity options:

**Structured cabling:** Choose a copper, fiber, or coaxial structured cabling system for a variety of media applications. These can connect your CCTV cameras to monitors and recording devices, power your access control system, and link your commercial audio components together. A wired infrastructure is a good solution if you needed guaranteed coverage and dependability.

**Wireless connectivity:** When wiring isn't a feasible option, clear up the cables with wireless connectivity. Low voltage devices can communicate wirelessly in a number of ways, including over radio frequencies, via microwaves, and with infrared laser technology. A wireless site survey can help determine your eligibility for this type of infrastructure.

## Fully Integrate the Low Voltage Systems in Your Building

When you consider your building's fire protection, security, and communication systems, you shouldn't think of them as separate from another. With total integration services you can easily monitor and control every piece of low voltage equipment in a single complementary system. When they work in tandem, you can rest assured that there are no gaps in the safety and security of your employees, guests, and customers.

### NECA Section 01 Integrated Building Systems

- Fire Alarm
- Security & Access Control
- Clock
- Audio Visual
- Nurse Call
- Telephone / Television
- Closed Circuit Television
- Cabling Systems
- Low Voltage Lighting Control