

KEYNOTES

SECURING YOUR SUCCESS



Don't Throw That Lock Away!

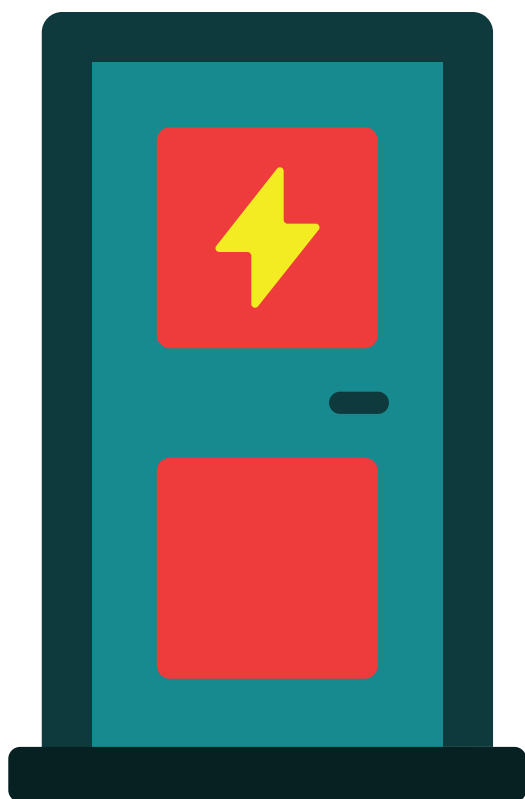
locks provide learning opportunities

PLUS

**Retrofitting Doors
for Electronic
Access Control**

SDC
Security Door Controls
Pages 28-33

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RETROFITTING DOORS FOR ELECTRONIC ACCESS CONTROL

In the first installment of this two-part series, **Kerby Lecka** discusses what to consider when planning a retrofit.

ELECTRONIC ACCESS CONTROL (EAC) retrofits continue to be one of the most requested — and misunderstood — services in today's locksmith and door hardware marketplace. In this article, we focus on the planning, assessment and code considerations that must be addressed before locking hardware selection begins.

Maximize Profit and Minimize Liability

For security professionals, converting a door from purely mechanical hardware to electronic access control is no longer a niche skill — it's an expected competency. That said, familiarity can sometimes lead to shortcuts, assumptions or reliance on "what worked last time." With today's proliferation of EAC products, evolving fire and life safety codes and increasing customer expectations, those shortcuts can introduce unnecessary risk.

This two-part series is intended as a practical refresher and planning guide. It applies whether you're installing your first electrified lockset or evaluating a multi-door retrofit in an occupied facility. The goal is simple: help you deliver safe, code-compliant solutions that reduce liability, increase customer confidence and maximize long-term profit. Electronic access control doesn't forgive poor planning — every shortcut shows up at inspection.

Defining the Access Control Objective

Every door opening exists to serve a purpose. Before recommending any EAC solution, you must understand its purpose and the problem the customer is trying to solve. In nearly every case, access control objectives fall into three primary categories: security, life safety and accessibility.

Security objectives include asset protection, theft deterrence, controlled entry and personal safety. Office suites, storage areas, data rooms and perimeter entrances typically fall into this category.

Life safety objectives address emergency conditions and regulatory requirements — fire protection, emergency egress, lockdown capability, infant or patient protection, crowd control and hazardous material containment. These openings are often subject to the strictest codes and the highest level of scrutiny.

Accessibility objectives ensure compliance with the Americans With Disabilities Act (ADA) and support equitable access for all users. Public buildings, health care facilities, educational campuses and retail environments frequently require accessibility features to be integrated with security and life safety measures.

Most doors involve more than one objective. Identifying the primary objective — and understanding how secondary objectives affect the solution — will guide hardware selection, wiring methods and system architecture.

Evaluating Profit Potential Early

Not every EAC retrofit represents the same opportunity. Some doors are isolated upgrades, while others serve as gateways to larger system expansions. Early in the planning phase, evaluate whether the opening could logically connect to additional doors, credentials, monitoring points or future access control needs.

Consider questions such as:

- Is this a single-door fix or part of a larger access strategy?
- Will the customer require expansion or integration later?
- Are there opportunities for additional revenue through compliant power supplies, annunciation or service agreements?

Equally important is determining whether the project aligns with your licensing, experience and comfort level. Declining a poorly defined or high-risk project can be just as profitable as completing one. The most successful EAC retrofits often begin as one-door projects and expand once the customer sees the value.

Determining the best-suited EAC hardware is central to your profit potential and requires a review of many factors. The accompanying chart in *Figure 1* will guide you to some of the most important considerations.

Understanding Liability and Code Compliance

Electronic access control carries inherent responsibility. A non-compliant installation that restricts egress or fails during an emergency can expose installers,

EAC PROFIT, LIABILITY & APPLICATION CONSIDERATIONS	
Product Availability Budget Requirements • Timing/Delivery affects profit • Good, Better, Best Solutions to match project budget	Retrofit Project • Single or multi-door • Standalone or integrates into EAC system/network
Life Safety Codes • City • State • National • Local Jurisdiction	Type of Door & Frame • Aluminum • Off-set • Center Hung • Slide or Swing
Level of Security • High Security - Fail-secure • Low Security - Fail-safe • Monitoring Features	Aesthetics • Concealed • Surface Mount • Architectural Housing • Available Finishes

FIGURE 1. There are many considerations for EAC applications. All illustrations and product images are courtesy of SDC.

integrators and property owners to significant liability.

Before recommending hardware, identify applicable code and certification requirements. These may include ANSI/BHMA performance standards, UL listings and access control-specific standards such as UL 294. Local amendments enforced by the authority having jurisdiction (AHJ) may impose additional requirements.

Providing customers with compliant documentation — and keeping copies for your own records — helps protect all parties involved. When in doubt, consult the AHJ early rather than attempting to justify decisions later.

Matching the Solution to the Opening

The rapid expansion of EAC products has led to widespread misapplication.

Hardware designed for one environment is frequently installed in another, often with unintended consequences. As a manufacturer, we've encountered many instances of misapplication in the field that deviate from the intended use and under- or over-use of the security, life safety and accessibility features designed into these EAC solutions.

Before selecting a solution, confirm:

- Whether the opening is public or private
- Whether free egress is required at all times
- Whether the door is fire-rated
- Whether ADA accessibility applies
- Traffic type, direction and frequency

Continuing education is critical. Manufacturer training and association courses offered by ALOA and DHI provide valuable insight into codes, applications and best practices. The door opening dictates the solution — not the catalog.



DOOR CHECKLIST

Security Door Controls

800-413-8783

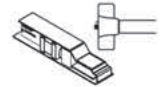
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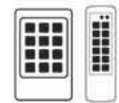


Job Name						Date					
Door Identification						Interior		Exterior			
Single Door Handing		RH	LH	RHR	LHR	Double Door Handing		RH	LH	RHR	LHR
Type of Door		Wood (with or without lite)		Hollow Metal (with or without lite)		Aluminum & Glass		Herculite (top and/or bottom rail)		Herculite (pivot & lock patch fittings)	
Door Size		Width		Height		Door Thickness		Lock Height		Lock Backset	
Type of Header		None		Wood		Steel		Aluminum		Glass	
Type of Frame		Face Width		Wood		Hollow Metal		Aluminum		Timely	
Existing Lock		Type		Brand		Finish					
Hinge		Type (pivot, continuous, heavy duty)		Size (width x height)		Finish					
Door Closer		Surface Mount Inside		Surface Mount Outside		In the Header		In Floor			
		Hold Open Feature		Degree of Opening		Closer Manufacturer					
Automatic Door		Manufacturer		Model Number		Push or Pull		Push Plates (hardwired or wireless)			
EXIT Sign Above Door?		No		Yes							
Pictures of Door?		No		Yes							
Distance From		Door to Access Controllers		Door to Power Supply							
Wiring		Wire Gauge		Wire Type		# of Wires		Extra Wires			
Ceiling		Height		Ladder Height Requirement							
Ceiling Access for Wire Run		Plaster		Dry Wall		Lift Out		Panels		Puzzle	
Voltage		At Door		At Power Supply		Current at Door					

Locking Devices



Exit Devices & Retrofit ELR Kits



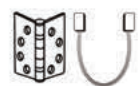
Keypads & Readers



Low Energy Operators



Power Transfer Devices



Power Controllers



Remote Control Consoles



Accessories



FIGURE 2. Here's an example of a door checklist.

Assessing the Door Opening

A thorough door assessment is essential to help capture the necessary details for recommending an appropriate upgrade to the door. SDC has developed a comprehensive door checklist in both interactive (<https://sdcsecurity.com/Door-Checklist.htm>) and downloadable (<https://sdcsecurity.com/docs/door-checklist.pdf>) versions (Figure 2). Or start with any trade association or EAC manufacturer you deal with to find an alternate resource.

Using a checklist helps capture key details such as door type, size, handing, frame construction, hinges, closers, existing locks, ceiling conditions and power availability. These details will figure into the proper application and installation of an EAC component upgrade.

Evaluate the Door's Mechanical Condition

Equally important is evaluating the mechanical condition of the door. Binding, improper latching, misalignment or closing issues must be corrected before electrified hardware is installed. Electronic components cannot compensate for mechanical deficiencies.

Identifying the Door's Function

Understanding the function of the door — classroom, storeroom, corridor, lobby or exit — directly affects hardware selection. Determine whether existing mechanical hardware can be electrified or whether replacement is required. In some cases, factory modification is necessary to maintain UL listings, particularly on fire-rated openings.

Fire-Rated Openings Require Special Care

Fire-rated openings are common in stairwells, corridors, and elevator lobby

door situations and need to meet compliance with the authority having jurisdiction (AHJ) that enforces the codes. Be familiar with the NFPA 101 Life Safety code, among others. Some key requirements are:

- Code requires self-closing and latching
- Free egress is critical for life safety
- Fail-safe electrified hardware is mandated
- Modifications to install hardware might require re-certification of the door or frame
- Electrified hardware is typically tied into the fire system to release in the event of fire, power failure or other emergency

Performing due diligence in door assessment and code compliance will mitigate your risk when an unforeseen emergency occurs.

Identify the Electronic Access Control Solution

Controlling Entry: How Will Users Get In?

Modern electronic access control replaces traditional keys with credentials such as PIN codes, cards, fobs, mobile devices or biometrics. Wall-mounted keypads and readers remain common and may operate as standalone devices or connect to an access control system that manages multiple openings — and usually release some type of electric door lock to gain entry.

Battery-powered standalone locksets combine the reader and locking device into a single unit, reducing wiring requirements. These solutions are available in cylindrical, mortise and exit device configurations, with Bluetooth and Wi-Fi connectivity expanding their capabilities.

Key switches (Figure 3) continue to serve specialized applications such as roll-up doors, gates and controlled equipment access where credential systems are unnecessary.



FIGURE 3. Key switches are one option for controlled entry for applications such as roll-up doors, gates, and controlled equipment access where credential systems are unnecessary.

Access control starts with credentials — but success depends on the hardware behind them.

ADA and Automatic Door Considerations

ADA is a civil rights law that includes a directive for public accommodations to ensure accessibility within public buildings. Retail storefronts, office buildings, campuses and health care facilities typically need to meet ADA compliance at points of access and egress as well.

Public door accessibility for ADA applications is achieved through the use of low-energy automatic door operators. ADA-compliant actuators — such as wireless and hardwired push plate switches — can activate door openers to provide accessible entry and support request-to-exit functions. Additional options, including touchless exit switches and actuators mounted on bollard posts, further enhance accessibility and convenience for all users (Figures 4-6).



FIGURE 4



FIGURE 5



FIGURE 6

FIGURES 4-6. Push plate switches, bollard posts with actuators and touchless exit switches offer ways to stay ADA compliant.



FIGURE 7. Electromagnetic shear locks offer high security with a fail-safe locking mechanism and are available in concealed, semi-concealed, and surface mount models.

These solutions help facilities meet ADA requirements for equitable access at entry and exit points. The growing adoption of touchless technology — accelerated by public health concerns — has made these features a standard expectation in many facilities.

Identify the Locking Solution: What Lock Will Secure the Opening?

Electric locking devices come in a variety of application configurations to meet

local, regional and national fire and life safety code requirements. From electromagnetic locks, electric strikes, electrified locksets and electric bolt locks, there's an EAC solution to meet just about any need to secure a door.

Electromagnetic locks are well-suited for interior doors, perimeter exit doors and entrances where failsafe emergency release capability is required. These locks are available in multiple holding force levels to match varying security needs.

Electromagnetic shear locks (Figure 7),

a specialized type, offer high security with a fail-safe locking mechanism and are available in concealed, semi-concealed and surface mount models. These options allow for both enhanced security and an architecturally refined appearance.

It is important to note that electromagnetic locks require continuous power to remain locked (fail-safe operation), and their selection should always consider applicable fire and life safety codes.

Electric strikes allow for the electrical release of a locked mechanical latch or bolt, making them an excellent choice for both new installations and retrofit projects. They are available in a wide range of configurations to fit various mechanical locksets, as well as different door and frame styles.

Electric strikes (Figure 8) support both fail-safe (unlocks when power is lost) and fail-secure (remains locked when power is lost) applications, allowing you to select the appropriate option based on security and life safety requirements. Their versatility and ease of integration make them a popular solution for access control upgrades.

Electrified cylindrical or mortise locksets (Figure 9) are commonly used



FIGURE 8. Electric strikes support both fail-safe and fail-secure applications.

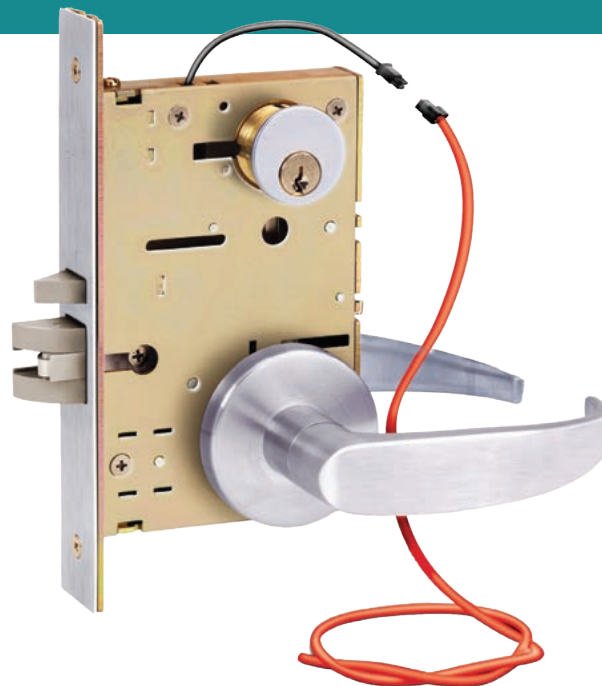


FIGURE 9. Electrified cylindrical or mortise locksets are commonly used to achieve building and fire life safety code compliance on fire-rated doors.

to achieve building and fire life safety code compliance on fire-rated doors, including those found in offices, corridors, lobbies, exits and stairwells. These locksets provide controlled access and remote operation while ensuring the door remains latched — even when unlocked — to maintain fire door integrity.

Both fail-safe and fail-secure configurations are available, allowing selection based on specific security and life safety requirements. This versatility makes electrified locksets a reliable solution for access control in code-compliant environments.

Unlike electric strikes, electric bolt locks (Figure 10) provide security without the need for an additional mechanical locking device. Electromechanical bolt locks are available in both fail-safe and fail-secure configurations, allowing selection based on specific security and safety requirements.

These locks are ideal for high-security interior doors and cabinets where electromagnetic locks are not required.

However, they are generally not recommended for fire-rated doors or openings that require free egress, due to code compliance considerations. Each locking solution carries implications for wiring, power, monitoring and code compliance.

What's Next

With objectives defined, the door opening fully assessed, and the determination of how users gain access and how to select locking hardware, part two of this article series will focus on implementation. We'll explore how power and PoE solutions are planned, how egress hardware is selected, and how monitoring and control devices complete a compliant retrofit. 📞



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FIGURE 10. Electric bolt locks provide security without the need for an additional mechanical locking device.