

# Frequently Asked Questions

## ElectroLock™

### What is ElectroLock?

ElectroLock electronic door restrictor is an innovative door locking technology that ensures an elevator door remains locked until it reaches its designated unlocking zone. It is the only electronic door restrictor that is universal, flawless and 100% code compliant to ensure passenger safety and peace-of-mind. Passengers are kept securely inside in between landing zones in the event of a power-loss or breakdown.

### What are the two ElectroLock models?

ElectroLock has two models: Model "A" uses RFID-based targets that mount up the hatchway. Model "B" does not use targets. Instead, it connects directly to a door zone signal.

### Why are there two ElectroLock models?

There are two ElectroLock models because some controllers do not have an available door zone signal connection. If this is the case, then installers can simply use Model "A."

### How do I know which model I need?

Just check the chart below to determine the model you need.

#### Controllers that need Model A

Beckett  
Dover Composite  
Elevator Systems (ESI) - Relay Logic  
GAL Relay  
Horn Relay  
Montgomery MIPROM  
Otis - older controllers  
Shepard Warner  
TAC 32  
TXR5  
Westinghouse

#### Controllers that Need Model B

Armor  
Century  
O'Thompson (Microprocessor)  
O'Thomspon (Old relay logic)

CJ Anderson	Otis 211
DMC 24VDC	Otis 311
Dover IBM	Otis 411
Dover LMH	Otis LRS 3
Dover P&B	Otis MRS
Dover Solid State	Otis w/ Universal GCS
Eastern	Resolve 20 (Kone)
Elevator Control (ECI)	Rotary
Elevator Systems (ESI) Microprocessor	Serge
Elevonic (Otis) 401	Smartrise
ESCO	Southeastern
FS Payne	Swift
GAL Galaxy	T1 & T4
General	TAC 50-04
Haughton	Tricon
Ideal	Turnbull
MCE	US
Miconic	Virginia
Montgomery	Watson
Mowrey Wico Board	
MPH II	
Murphy	
Northern	

**What if I accidentally order Model “A” (targets) but find out later that I have a door zone signal. Can I convert Model “A” to a Model “B” and just use the door zone signal instead?**

Yes. Model “A” can be converted to connect using a door zone signal.

**What is the difference between ElectroLock and other electronic door restrictors?**

ElectroLock, an electronic door restrictor, uses either RFID-based targets or connects directly to a door zone signal. The other electronic door restrictor design uses photoelectric sensors (optics). However, calibrating the electric eyes and reflective strips used by these devices is time-consuming, and the functionality of these systems is degraded in the presence of dust, smoke, grime, and ambient light. Optics-based door restrictors fail easy.

ElectroLock was designed to address all known problems with mechanical and electromagnetic door restrictors, even to the point that should the system fail for any reason; it will fail in the safe position. Its versatility is unmatched since it can unlock the car door from either a signal of target acquisition or a signal from the controller that the car is in the unlocking zone. It can also utilize a wide range of voltage sources for power thus allowing the controller voltage to be used for power as opposed to bring an external power source to the car top.

### **Is ElectroLock an electromagnetic device?**

Yes. ElectroLock is an electromagnetic (or electronic) device. Model “A” uses RFID (radio frequency identification) technology instead of photoelectric beams and targets. However, ElectroLock’s Model “B” uses the elevator’s door zone signal for activation. Because of this, ElectroLock is the most versatile door restrictor for an installer.

### **How does ElectroLock actually work?**

ElectroLock uses an electronic pulse to move its bi-stable solenoid (locking plunger) to the locked or unlocked position.

### **Why does ElectroLock use “pulse” technology to actuate the locking plunger?**

By using pulse technology as opposed to continuous power, the life of the device can be significantly extended.

### **Is ElectroLock code compliant?**

Yes. ElectroLock is completely code compliant because it satisfies all the requirements of A17.1.

### **Does ElectroLock use a battery?**

No. ElectroLock does not use a battery. Instead, ElectroLock uses a bi-stable solenoid and therefore does not need a battery to maintain bolt position in the case of a power loss.

### **Does ElectroLock require regular maintenance?**

No. Once installed, ElectroLock should require no maintenance whatsoever. The *Magnalatch* locking solenoid is the system’s only moving part. The bolt is permanently lubricated and the solenoid is powered with micro pulses of electricity, not continuous current as seen in other systems.

### **Does the bolt constantly lock and unlock when passing multiple landings?**

No. Timing logic in the controller prevents Magnalatch from cycling until arriving at destination landings, further extending system longevity. ElectroLock is engineered to be more durable and reliable than any other door restrictor available.

### **What happens if the door operator activates while ElectroLock is engaged?**

We strongly recommend an arrangement called “doorsaver,” whereby ElectroLock is wired into an elevator door operator’s door-open limit circuit, as this allows the system to interact intelligently with the door operator and prevent door motor burnout should the controller send a door open signal before the ElectroLock bolt is disengaged from the door. That is, “doorsaver” will not allow the door operator to open if the Magnalatch locking plunger is in locked position.

#### **How do the Model “A” RFID targets attach?**

The RFID targets are attached to a sturdy flat PVC. The PVC can be heated using a simple heating device then bent to create an L- or Z-bracket. The PVC is flexible and easy to use. This gives the installer maximum options on how to position the RFID targets.

#### **What is the maximum distance I can mount Model “A” RFID targets from the MagnaLatch?**

Installers can position the Model “A” targets as far away as two inches from the MagnaLatch.

#### **Do I need two (2) ElectroLocks if the car has a front and rear door?**

Yes. You need one ElectroLock for each door.

#### **What is the Positive Action Switch?**

The Positive Action Switch is an optional add-on that will provide redundant confirmation to the controller that the car door is locked. It is ideal for glass-pack elevators or in any situation where mounting fascia is not feasible.

#### **Can ElectroLock also be used as a car door interlock?**

Yes. When the Positive Action Switch is added then ElectroLock can be used as a car door interlock either by variance or under ASME A17.7.

## **General Questions**

#### **What is a door restrictor?**

A door restrictor is a device, attached to the outside of an elevator car, which secures the car doors when the car is in transit between safe landing zones.

#### **What is a safe landing zone?**

Also referred to as the unlocking zone, the minimum safe landing zone is a vertical span of 6 inches that extends 3 inches above and 3 inches below an elevator landing. It is permissible for this span to extend up to 18 inches above or below the landing.

### **Why are door restrictors necessary?**

Elevator safety codes mandate the use of door restrictors as a safety measure. The primary rule is ASME A17.1, 111.5, which specifies the requirement for door restrictors:

*(a) When a car is outside the unlocking zone, the hoistway doors or car doors shall be so arranged that they cannot be opened more than 4 in. (102 mm) from inside the car.*

*(b) When the car doors are so arranged that they cannot be opened when the car is outside the unlocking zone, the car doors shall be open able from outside the car without the use of a special tool.*

*(c) The doors shall be unlocked when the car within 3 in. (76 mm) above or below the landing and shall be permitted to be unlocked up to 18 in. (457 mm) above or below the landing.*

For elevators installed under the 1980 edition of ASME A17.1 and later, door restrictor guidelines are provided in ASME A17.1 1998b Rule 111.5/111.12 or ASME A17.1 2000 Item 2.12.5.

The A17.1 *Handbook Safety Code for Elevators and Escalators, 2000 Edition*, Section 2.12.5, explains the reasoning behind the use of door restrictors in this way:

*When a passenger elevator is outside the unlocking zone it is unsafe for a passenger to try to exit through the elevator entrance unassisted . . . In fact, there have been many reports of fatalities due to this condition. A person inside the car should not be able to accomplish their own emergency evacuation through a hoistway door when the car is located outside of the unlocking zone. This requirement may be met by restricting the opening of the car door or the hoistway door.*

Industry and safety experts have reached a broad consensus that during emergencies and power-loss events, the safest place for elevator passengers is inside the car until they can be rescued by professional responders.

### **Are any elevators exempt from the requirement for door restrictors?**

The requirement for elevator door restrictors varies by state. The general trend is for all elevators to be equipped with door restrictors. Most variances apply to the length of

time available for an operator to bring a given elevator into compliance with the code. If you are unsure of the requirement in your state, consult with your local AHJ.

**What is the difference between electronic and a mechanical door restrictor?**

Manufacturers have designed two types of door restrictor designs—mechanical and electronic. Mechanical door restrictors are problematic because they tend to be noisy and difficult to align and repair. Within the electronic designs, there are also several designs, RFID, door zone signal connection, and optic.