

Powered Retracta Ladder[®]

Safer pit access where there's a great distance from entrance to hoistway wall.



- Reduce pit access hazard of cars with center-opening doors.
- Mount ladder on opposite of strike wall for side-opening doors.
- Don't reach unsafe distance to the ladder, typ. +2½ feet.
- Ladder comes to you with the turn of a key.
- 6½" clear retracted, 36" rung-to-wall extended.
- Solves 39" max. ladder-to-door lock release problem.
- Option A: standard access key raises car, then extends ladder automatically (requires controller interface).
- Option B: dedicated switch extends ladder after car is raised (standalone).
- IP66 (NEMA 4X) 24 VDC 1000 lbf actuator & 115 VDC motor controller
- IP67 (NEMA 4X) electrical safety device (field wire to stop switch).
- A17.1/CSA B44 compliant.
- Retracta Ladder[®] is Patent Pending and a Registered Trademark.
- Made with pride in the USA.

Smart Elevator Tech, LLC

phone: (415) 819-5744

email: rich@smartelevatortech.com

web: www.smartelevatortech.com

Powered Retracta Ladder[®] - Powered Retractable Pit Ladder

The ***Powered Retracta Ladder***[®] is an electrically powered, linear actuator driven elevator pit ladder. Unlike the original Retracta Ladder[®], which was designed to fit in very tight clearances between the car and pit wall, the powered version is designed to provide safer pit access where there is a great distance from the access entrance to the hoistway wall. For a typical passenger elevator with a 7' wide platform, the distance from the edge of the center-opening door frame to the center of the ladder is approximately 2½ feet. This dimension can increase with the wider platforms often used in high-rise and public transit applications. Safely accessing the pit by first spanning this considerable distance from the entrance to the ladder is a known hazard. Reversing the process when exiting the pit, with the added difficulty of having to reach to the interlock release mechanism, can be even more perilous. Countless injury accidents have occurred due to failing to make this difficult maneuver, resulting in falls to the pit floor and collisions with pit equipment.

The ***Powered Retracta Ladder***[®] lessens these hazards by bringing the elevator pit ladder from the distant wall to the entrance frame, where it is within direct reach. The ladder extends to a 36" projection from the wall or divider beam to the center of the ladder rungs. It retracts to 6" -6½" from the wall or divider beam for a min. 7½" car to side wall clearance. There are 12 models available for pit depths from 3 to 13 feet. The ladder is driven by a US assembled, 1,000 lbf. linear actuator with 3,000 lbf. holding, locking strength. There are two power and control options: In the preferred **Option A**, the ladder is both powered and controlled by the elevator's controller and utilizes the elevator's standard hoistway access operation. Operating the Hoistway Access keyswitch in the entrance frame or hall station, the car rises until it reaches the Access Limit Switch (A17.1-2013, 2.12.7.3.3(c)). Still holding the keyswitch in the "UP" position, the ladder starts and extends to the pit floor in about 12 seconds. When the ladder leaves the retracted position, the IP67 forced contact limit switch opens the elevator safety circuit (A17.1, 2.2.4.2.7 Retractable Ladder Electrical Device). The N.C. contact is field wired to elevator pit switch. With Option A, the N.O. contact is monitored by the elevator controller. When exiting the pit and returning the elevator to normal operation, the controller sees that the safety circuit is open and the ladder monitoring circuit is closed. Turning the Hoistway Access keyswitch to the "DOWN" position, the controller first operates the ladder actuator, raising and locking it into the fully retracted position before lowering the car.

An alternate operation is available when direct interface with the elevator controller is not possible, such as where the ***Powered Retracta Ladder***[®] is installed with existing elevator controls. With **Option B** a **Ladder Keyswitch Station** is provided to be field mounted within the hoistway and accessible from the landing, such as adjacent to the strike jam on a handed entrance or within the fascia just below the landing sill for center-opening entrances. The operator would run the elevator up using the elevator's Hoistway Access function, seeing that the car is raised to the access limit or high enough for the ladder to clear the car. The operator then uses the Ladder Keyswitch Station to extend and retract the ladder. A hoistway switch may also be employed to prevent the Ladder Keyswitch Station from operating unless the car is raised to the required clearance height. The Retractable Ladder Electrical Device prevents any movement of the car once the ladder leaves the wall and until it is fully retracted and locked in place, out of the line of the car.

CEC - 2013, Article 620.25 Branch Circuits for Other Utilization Equipment requires a 115/120 VAC dedicated circuit to the ***Powered Retracta Ladder***[®] motor controller, from a current overload protected disconnect located in the elevator machine room, labeled for its use, such as "Powered Pit Ladder." The maximum current draw is 3 amps.

The ***Powered Retracta Ladder***[®] complies with ASME A17.1-2013/CSA B44-10 and CCR Title 8. The operation and failsafe design leverages from the proven track record of the manually operated ***Retracta Ladder***[®], now accepted for installation in all jurisdictions. The ***Powered Retracta Ladder***[®] has been shop and field tested, including certified dynamometer load testing applying a lateral load of over 600 lbf. mid-connection on a 36" extended ladder, 20% higher than the code-prescribed 500 lbf. It has also been certified by a California licensed structural engineer for full compliance with the strength requirements of A17.1.

We believe this product will be revolutionary in the quest to improve safety in elevator pit. It will eliminate the dangerous "leap of faith" from the door frame to the distant ladder. A modest initial expense to install the ***Powered Retracta Ladder***[®] can avoid the considerable cost of potential life-threatening injury. Heretofore, there was no choice but to accept the hazards of the distant ladder. Now there is a safe alternative, bring the ladder to you with the ***Powered Retracta Ladder***[®].