

ELECTRIC AUTO EQUALIZERS

These Auto Equalizer products are an addition to the original pneumatic drive system. People moving through a door can use it as a normal rack & pinion door closer or, at the touch of a button, open the door automatically. An integrated digital control suite provides all electrical control functions.

These self-contained units are suitable for use on single leaf doors or pair of doors where each leaf is equipped with an operator. The operator provides all the control and power elements into a single operator package, only some actuators are required to complete the system.

- Introduced in 1995.
- Two surface mount models available. The 4630 mounts on the pull side of the door and the 4640 Series mounts on the push side of the door.
- Integrates a modified heavy-duty 4040 Series cast iron cylinder.
- 4600 Electric Operators are not approved for smoke evacuation systems.

UNIQUE FEATURES

■ Digital Control Box

Provides exceptionally precise control of a large range of built-in functions combined with superior durability and performance. Visual indications and digital readouts of all control function settings and activity make adjustments easy, fast and accurate.

■ Dual Independent Program Memories

Each unit is pre-programmed to factory default settings. The installer can adjust the unit to meet the job site requirements. These field settings are locked into the computer's memory. Any subsequent field adjustments replace the original field adjustments. The factory settings are always retained in memory and can be recalled to replace the field settings in just seconds, restoring the unit to its original programming.

■ On-Board Diagnostics

Sophisticated built-in diagnostics program monitors the system microprocessor, power supplies, drive system and actuators circuitry. Reduces the time required to make sure the installation is complete and correct.

■ On-Board Power Supply

Provides both 12V DC and 24V DC outputs to power card readers, manual actuators and other peripherals.

■ "No Destruct" Drive System

Specially designed motor and clutch assembly provide a 'breakaway' function that reduces the chance the operator will be damaged in an abusive application. If a vandal tries to force the door closed while it is trying to open, the clutch mechanism prevents damage. The door is never out of control because the heavy duty 4040 closer is always operable.

■ Electronic Circuit Protection

The high voltage input circuit is protected by a one amp slow blow fuse. The low voltage output circuits by self-resetting fuses.

■ Visual Function Indicators

LED's allow direct observation of these inputs:

- input power
- fire alarm input
- normal trigger (actuator) input
- sequential trigger (actuator) input
- hold open/alternate action (actuator) input
- lockout timer
- safety sensor (clear) input
- safety sensor (active) input

■ Programming Mode

Allows tailoring the following functions to meet specific site conditions:

- hold open time
- 90° slow down time
- one shot input [ON or OFF]
- Exterior mode [ON or OFF] function to accommodate momentary resistance, like wind gusts, during the opening swing.
- electric strike delay timer
- electric strike 3 second power function [ON or OFF]
- sequential trigger delay timer
- alternate action timer
- lockout timer

ELECTRIC AUTO EQUALIZER SYSTEMS

- Originally introduced in 1995.
- Exceeds proposed ANSI cycle test standard of 300,000 full load automatic operating cycles. Integrated LCN 10 million cycle heavy duty 4040 door closer.
- Power operation plus full door control.
- For all applications, single or multi-door projects.
- Opening time to backcheck no faster than 3 seconds.
- Opening time 4 seconds or more to fully open.
- Must remain fully open for at least 5 seconds.
- Closing time from 90° to 10° no faster than 3 seconds.
- Less than 15 pounds-force to stop door's motion.
- Kinetic energy must not exceed 1.25 lbf-ft.
- In event of failure; less than 15 lbf. to release latch, less than 30 lbf. to put door in motion, less than 15 lbf. to fully open door systems.

STANDARDS, LISTINGS & APPROVALS

- UL listed for Fire Door Operator (GUJY) and Door Operator System (+DDR) file R18222.
- Tested and certified under ANSI Standard A156.19. Refer to Section 2.1 and consult factory for details.
- ANSI Standard A117.1, Section 4.13.13.
- ADA law, Section 4.13.12.
- Listed for positive pressure plus UL 10B and UL 10C.
- Wiring is compliant with both UL 325 and the NEC. Separation of high and low voltage.
- Consult the factory for other listings such as; State and Local Government regulations.
- UL 10 C Listed for Fire Rated Door Operators with Automatic Closers, File No. (GUJY).

WARRANTY

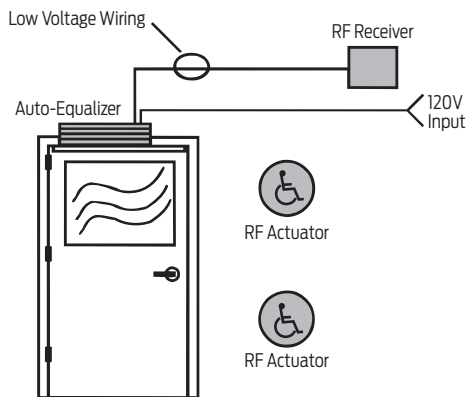
- 2 year limited warranty. See General Information Section for complete details.

MAINTENANCE

- Operators mounted according to the LCN installation instructions require no periodic maintenance or adjustments.
- Periodic visual inspections are recommended.
- No service contracts.

This page illustrates examples of typical Electric LCN systems. Please consult your local SSC representative or LCN for assistance with specific installations and material requirements.

SINGLE DOOR SYSTEMS



SINGLE DOOR SYSTEM (WIRELESS)

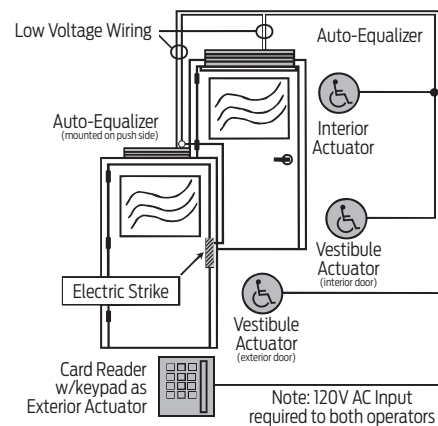
- An Interior Door
- No guide rails or safety devices
- Free Swinging (or Dogged) Door

How It Works:

- Wireless RF actuators and receiver, powered by the Auto Equalizer simplify installation and minimize installation costs
- For automatic door operation, touching either actuator signals the receiver and controller module to open the door to 90°
- The door is held there until the system times out, then full spring power is applied to reliably close and latch the door.
- Door opening speed and hold open time are adjustable on the controller
- Closing power and speed are adjustable on the cylinder assembly
- If not actuated, the Auto Equalizer functions as a full featured door closer

Bill of Materials:	Qty.	Part No.	Description
	1	4631	Auto Equalizer
	2	8310-3856WS	Wireless Actuators
	1	8310-865	Wireless Receiver

VESTIBULE ENTRY OPERATION



VESTIBULE ENTRY SYSTEM (WIRED)

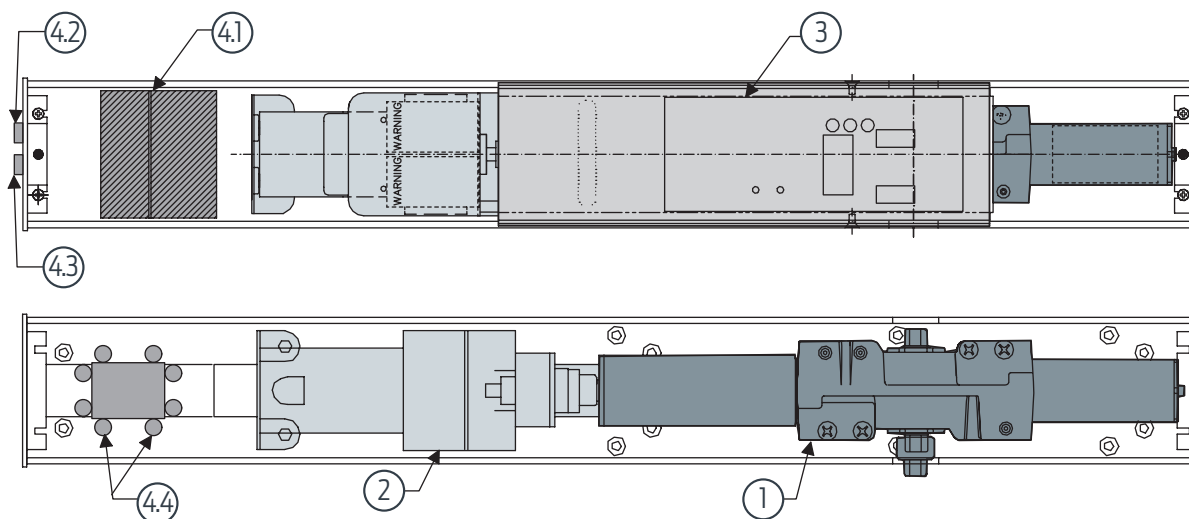
- Exterior & Vestibule doors
- Sequential Operation
- No guide rails or safety devices
- Controlled Access, Free Egress

How It Works:

- This installation provides both accessibility and security for building occupants
- The Auto Equalizer controller module provides both the power and coordination for card reader and electric strike applications
- A built-in delay allows the strike to release before the door begins to open
- Two interconnected Auto Equalizers provide sequential operation in both directions
- Vestibule actuators allow single door ingress/egress from the vestibule as needed

NOTE: An EL device requires a separate power supply. If not actuated, the Auto Equalizer functions as a full featured door closer

Bill of Materials:	Qty.	Part No.	Description
	1	4642	Auto Equalizer (exterior)
	1	4631	Auto Equalizer (interior)
	3	8310-856	Wall Plate Actuators
			Other products from Von Duprin and Locknetics



1 - DOOR CLOSER ASSEMBLY

- Based on a heavy duty 4040, cast iron cylinder with all-weather fluid for consistency and reliability
- Rugged drive mechanism provides the connection to the electric motor assembly
- Fully adjustable, independent hydraulic regulation controls the door to minimize the chance of damage to the door and frame assemblies

2 - ELECTRIC MOTOR/CLUTCH ASSEMBLY

- Highly efficient motor combined with a custom designed gear system provides exceptionally quiet and smooth operation
- Special clutch transmits the power and provides a unique "breakaway" function that prevents damage to the operator, door and frame if a vandal forces the door closed during the powered opening swing

3 - DIGITAL CONTROLLER MODULE

- Digital Control Suite
- Dual Independent Program Memories
- On Board Diagnostics
- Visual Function Indicators
- Adjustable Programming Modes

4.X - FIELD WIRING

4.1

- Input power; 120V AC @ 1.5 amperes
- On-board, low voltage power supply provides both 12V and 24V DC @ 1.0 ampere (maximum combined load) for LCN actuators, RF receivers, and electric strikes or magnetic locks
- Slow blow and self-resetting fuses protect input and output power from voltage spikes
- Terminal strips simplify field wiring

4.2

- On/Off Switch

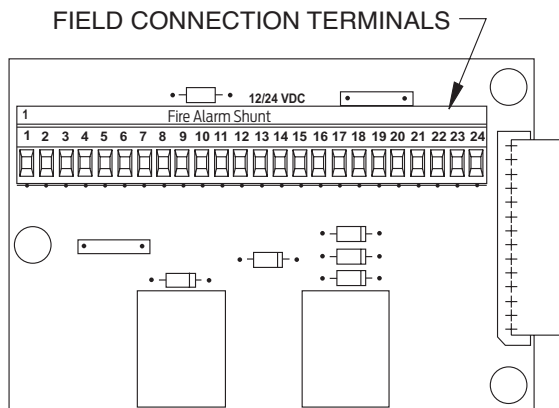
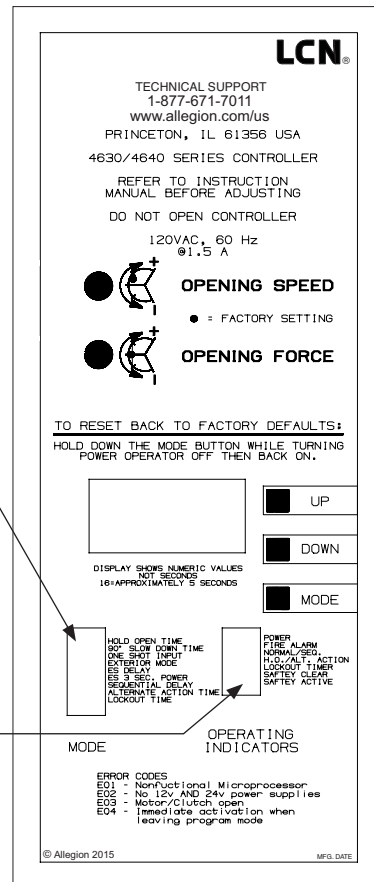
4.3

- Hold Open Switch

4.4

- Separate conduits for high voltage power and low voltage power and signal wiring meet UL and National Electrical Code requirements

LCN DIGITAL CONTROL BOX	
Opening Speed Adjustment	Limited to a minimum of 3 seconds to backcheck (approx. 70°)
Opening Force Adjustment	Maximum of 15 lb-f to stop door swing
Time Display	Displays numeric value relating to timing adjustments (16 = approx. 5 seconds)
Mode Indicator	Indicates programming mode currently being displayed
Up Button	Increases time or changes from OFF to ON when programming
Down Button	Decreases time or changes from OFF to ON when programming
Mode Button	Advances through programming setups on Mode Indicator
Operating Indicators	Displays operating information about internal functions and external hardware



LCN LOW VOLTAGE (CLASS 2 NEC) ELECTRICAL CONNECTIONS

Function	Terminal
Actuator - Normal Input (N.O.)	16 & 17 or 18 & 19
Actuator - Sequential Input (N.O.)	8 & 19
Actuator - Alternate Action (N.O.)	15 & 17
Actuator - Continuous (N.O.)	6 & 17
Sequential Output	9
Stop Side Safety (N.O.)	19 & 20
Swing Side Safety (N.O.)	19 & 21
Fire Alarm Contact (N.C.)	13 & 14 (Fire Shunt)
Auxiliary Relay Contacts (5 amp max)	10 - Common 11 - N.O. 12 - N.C.
E.S. Relay Contacts (5 amp max)	22 - Common 23 - N.O. 24 - N.C.
12V DC & 24V DC Negative*	2, 4, 13, 17, & 19
12V DC Positive*	5 & 7
24V DC Positive*	1 & 3

* NOTE: 1 Amp max load between 12V and 24V DC outputs.

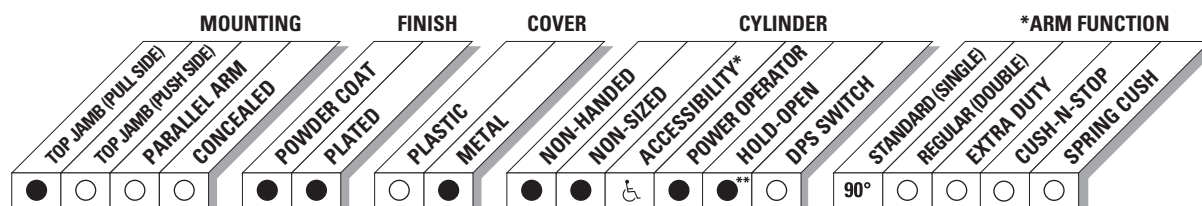


The 4630 AUTO EQUALIZER™ is LCN's SMART & RELIABLE electrically powered low-energy power operator. It provides easy access for people with disabilities, or the elderly. Designed primarily for manual opening applications that occasionally required automatic opening.

Certifications	Grade 1 - ANSI A117.1, A156.19, UL 10C, UL 325/228, ADA, 100 Hour Salt Spray, Meets BAA - Buy American Act	Cover	Metal, standard
Body Construction	<ul style="list-style-type: none"> ■ Cast Iron Body ■ Full Complement Bearing ■ 1-1/2" Diameter Piston ■ 3/4" Diameter Double Heat Treated Pinion Journal 	Fasteners	Wood and machine screws
Fluid	All Weather Fluid	Mounting	Top jamb (Pull Side)
Handing	Non-Handed	Arms	Standard single lever arm and track
Size	Adjustable Spring Size 1-4	Finishes/Colors/ Powder Coat	<ul style="list-style-type: none"> ■ Aluminum (689) ■ Statuary Bronze (690) ■ Light Bronze (691) ■ Black (693) ■ Dark Bronze (695) ■ Brass (696) ■ Custom colors optional
Warranty	2 years		<ul style="list-style-type: none"> ■ Optional SRI primer - powder coat only ■ Optional plated finishes* <p><i>*End caps are black</i></p>

**Special
Templates**

Customized installation templates or products may be available to solve unusual applications. Contact LCN Product Support for assistance.



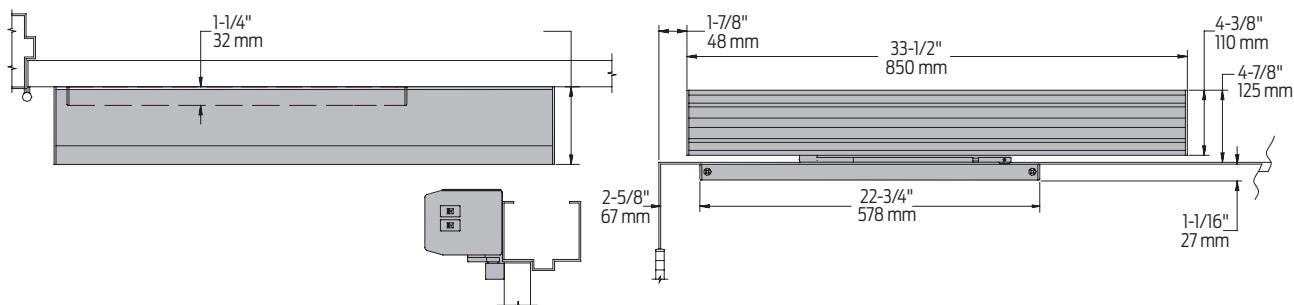
● AVAILABLE
○ NOT AVAILABLE

♿ Meets ADA requirements (power mode).
* See individual series for maximum manual opening.
** Switch provided for continuous hold open (4630 only).

4630 Series Auto Equalizer

Mounting details

Top Jamb (Pull Side) Mounting



Butt Hinges	Should not exceed 5" (127 mm) in width
Auxiliary Stop	Recommended
Reveal	Should not exceed 1/8" (3 mm)
Head Frame	Minimum 2" (51 mm)
Top Rail	Minimum 1-1/8" (29 mm)
Opening Time and Force	<ul style="list-style-type: none"> ■ Variable by adjustments to the electronic control module located on the operator assembly ■ Maximum hold open time adjustable up to approximately five minutes
System Diagram	See "AUTOMATIC OPERATORS" section pages 35 for typical system wiring and pages 37-38 for electrical data
Maximum Opening	<ul style="list-style-type: none"> ■ Templating allows 90° power opening and 170° manual opening ■ Please note that many track style door closers are capable of allowing 180° of door swing ■ Track style closers are at their weakest closing force at 180° ■ Consult factory for applications where exterior or large/heavy door must swing 180°

Notes:

- Actuators are sold separately, see pages 115-131
- Comes with a digital control box utilizing a 4040 heavy duty door closer with on-board diagnostics and power supply
- Has a factory default memory that include "No Destruct" drive system
- Guard rails or safety mats not required
- 4630 has easily accessible switches to provide on/off and continuous hold open functions
- CS options provides concealed on/off power switch
- Control module provides timing and sequential door functions, electric strike controls and adjustments for opening speed and force

Cylinders



4631-3971
Cast Iron Cylinder Assembly

- Non-handed
- Standard



4631-3071
Cast Iron Cylinder Assembly

- Non-handed
- Mounting plate
- Includes 4630-3454 Motor Clutch, 4630-3180 I/O Board Assembly and 4630-3462 Controller
- Standard



4631-3071CS
Cast Iron Cylinder Assembly

- Non-handed
- Mounting plate
- Includes 4630-3454 Motor Clutch, 4630-3180 I/O Board Assembly and 4630-3462 Controller
- Same as a 4630-3071 assembly except on/ off switch is concealed in endcap and no hold open switch is included (Separate key switches suggested)
- Standard

Cover



4630-72MC
Metal Cover

- Non-handed
- Standard

Track



4630-3038
Standard Track

- Non-handed
- Will not accept hold open clip or bumper assembly
- Standard

Arm



4630-3077T
Standard Arm

- Non-handed
- Track roller not included with arm

Installation Accessories



4630-3034
Track Roller

- Quiet low friction roller assembly
- Shoulder dimension "X" = 1/8" (3mm)

Installation Accessories



**4630-334
Switch End Cap**

- End cap (black powder coat finish only) with cut outs for installing on/off and hold open switches



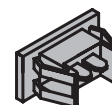
**4630-334-2
Blank End Cap**

- Black powder coat only



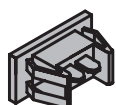
**4630-334CS
Switch End Cap**

- End cap and switch (black powder coat only) for concealed switch option



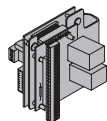
**4630-3179-1
On/Off Switch Assembly**

- Black rocker switch. Plugs into high voltage PC board



**4630-3179-2
Hold Open Switch Assembly**

- Black rocker switch
- Field wired to low voltage PC board



**4630-3180
PC Board Assembly**

- High and low voltage PC boards connected to mounting bracket



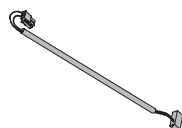
**4630-3454
Motor/Clutch Assembly**

- A geared assembly in an LCN power operator that incorporates a "no destruct" feature



**4630-3462
Control Box Assembly**

- Digital controller with built-in 12/24 VDC power supply
- Programming and timing functions are adjusted on controller



**4630-3498-2
AC Power Cable**

- 2 wire cable to connect 120 VAC from PC board assembly to controller



**4630-3498-1
Ribbon Cable Connector**

- 16 wire ribbon cable connecting 1-24 pin terminal connectors to controller

How-to-order 4630 Series closers

Specify finish

- Standard Powder Coat _____
Aluminum, Dark Bronze, Statuary, Light Bronze, Black, Brass

Closer options

Cylinder Assembly

- CS (concealed on/off switch)
(separate key switches suggested)

Finishes

- Custom Powder Coat (RAL) _____
- Plated Finish, US _____

Screw pack

- TB*, Wood & Machine Screw (TBWMS)
- TORX Machine Screw (TORX)
- TB* & TORX Machine Screw (TBTRX)
*Specify door thickness if other than 1-3/4".

Special template

- ST- _____

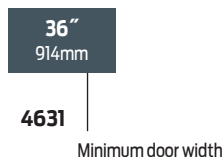
Closer will be shipped with:

- Standard cylinder
- Standard metal cover
- Standard arm
- Track roller
- Standard track
- Wood and machine screw pack
unless options listed below are selected

Table of sizes

- Non-Sized 4630 series cylinder is adjustable from size 1 through size 4 and is shipped set to size 3
- Closing power of 4630 Series closers may be increased 50%

Exterior (and Vestibule) door width



Interior door width



NOTE: Minimum door width 36" (914 mm).