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 it's 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
  - 90º 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

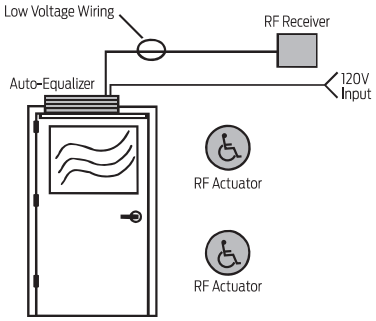
- 2 year limited warranty. See General Information Section for complete details.

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

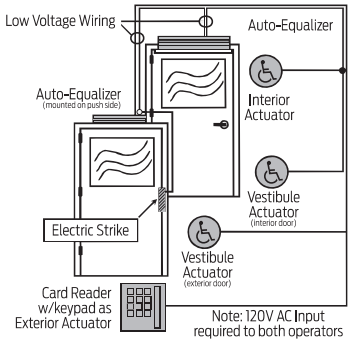
How It Works:

- 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

CANNONDESIGN

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

WEBSTER UNIVERSITY ISB
PROJECT NAME

8274 BIG BEND BLVD
ADDRESS

NUMBER

WEBSTER UNIVERSITY
OWNER

CANNON DESIGN
ARCHITECT / ENGINEER

DEVIN D GATES
SUBMITTED BY

087100.01-001
CONTRACTOR / CM SUBMITTAL NO.

CANNON DESIGN SUBMITTAL NO.

DRAWING / DETAIL REFERENCE

087100.01
SPECIFICATION SECTION / PARAGRAPH

MANUFACTURER / SUPPLIER

ITEM / PRODUCT ID

REQUIRED DATE

PRIORITY

○ CRITICAL

ITEM BEING SUBMITTED (check only one)

○ Shop Drawings	○ Certification / Qualifications	○ Coordination Drawing
○ Samples (_____ copies)	◉ Record Documents	○ Calculations
○ LEED Submittal	○ Product Data	○ Schedules
		○ O&M Manuals

○ Other _____

ITEM BEING SUBMITTED FOR (check only one)

◉ Action ○ Information Only ○ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)

PARIC

PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By:
Devin D. Gates

DEVIN D GATES — 10/31/16
REVIEWED BY — DATE

To be completed by Reviewer

08 7100.01-001
CANNON DESIGN SUBMITTAL NUMBER

10/31/16
RECEIVED DATE

○ A. No Exceptions Taken
No further review of submittal is required.

◉ B. Make Corrections Noted
Incorporate corrections in work; resubmission is not required.

○ C. Revise and Resubmit
Revise as noted, and resubmit for review.

○ D. Rejected
Submittal is not in compliance with Contract Documents; provide new submittal.

○ E. For Record / Information Only
Submittal was reviewed for Record / Information purposes only.

○ F. Not Required for Review
Submittal is not required by Contract Documents and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

A/E COMMENTS ◉ See attached sheet(s) for additional comments

SEE MARKUP

SEE LETTER ON FOLLOWING PAGE

Lynn Grossman — Digitally signed by Lynn Grossman DN: C=US, E=lgrossman@cannondesign.com, O=Cannon Design, CN=Lynn Grossman Date: 2016.12.05 18:32:59-06'00' — 12.05.16
REVIEWED BY — DATE

Allegion, PLC
6810 Hillsdale Ct.
Indianapolis, IN 46250 USA
Office 877.238.2022 Fax 317.715.4055
allegion.com

Submittal Review
Specification Section: 087100 Door Hardware

Date: 11/10/2016

Project: Webster University - ISB
Webster, MO

Firm: Cannon Design
Attn: Kelvin Patel
1100 Clark Ave
St. Louis, MO 63102
(314) 425-8756

Kelvin,

I have reviewed this submittal for the door hardware per specification section 087100. This review is for specification compliance based on the specifications submitted to you for the above referenced project. I did not review for doors and frames and nor did I respond to any questions or comments regarding doors and frames. The Contractor remains responsible for the accuracy and completeness of submittal including, but not limited to, dimensions, quantities, fabrication, and construction techniques. General Conditions of contract documents apply.

You will need to review the door and frame submittal for compliance based on your plans, door schedule, and door/frame elevations. If any changes were made through addenda or RFI please update my comments appropriately.

Submittal Action:
Door Hardware Submittal dated 10/31/16 - Reviewed / Reviewed As Noted

Submittal Notes/Comments:
- Revise all closers to 4010/4110 DEL series per email revision
- Provide Exit Devices with NL-OP trim where specified versus the submitted NL trim

Door Hardware Submittal–
Note: The general comments are listed to save time for repetitious items, comments, and/or concerns. The specific comments listed for individual headings are subject to the general comments listed below.

1. General:
   a. I did not review submittal for handing.
   b. Operational Description: Operational Description, of openings with electrified hardware, needs to be included in the door hardware schedule. [Reference Section 087100, Article 1.3.C.3.]

Please remind the contractor to coordinate the hardware being supplied by the Aluminum Door supplier with the hardware from this package. The hardware for aluminum doors is specified in Section 087100. This submittal references aluminum hardware as “by others”. All the hardware is required to be of the same manufacturer and model and meet the requirements of Section 087100.

✓ Single Source Responsibility: Obtain each type of hardware (ie. latch and locksets, hinges, exit devices, closers, etc.) from a single manufacturer. [Reference Section 087100, Article 1.4.D.]

The door hardware specification includes some project controls to assist in a smooth project. Please remind the general contractor of the following specification items in Section 087100:

- ✓ Article 1.3.C.3.I.3. Riser and Wiring Diagram – Please advise hardware supplier to provide riser and (point-to-point) Wiring Diagrams per approved finish hardware schedule.
- ✓ Articles 1.3.D. and 2.6. Keying – Please advise the hardware supplier to schedule and complete the keying conference prior to ordering hardware to avoid issues with keying or lock functions.
- ✓ Articles 1.6. and 1.7. Coordination – Please advise general contractor to schedule pre-installation, installation coordination, and electrified hardware coordination conferences prior to installation of any finish hardware.

Also, put the following items on the check-list at project completion time:

- ✓ Article 3.1 Installation
- ✓ Articles 3.1.L and 3.2 Adjustment and Field Inspections

As a reminder the following services are available to you for this project:

- ✓ Provide product training to installers.
- ✓ Assist you with “Jobsite Inspection” and creation of a detailed punch-list.
- ✓ Provide product training to owner.

Please review and contact us at the above telephone number or via email at aaron.owens@allegion.com with any questions or if you need further assistance. Thank you for your time and allowing me to follow up on this project.

Sincerely,

Aaron Owens

<Aaron Owens>