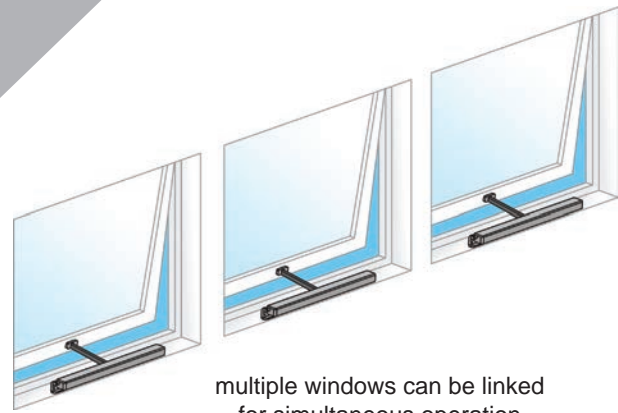


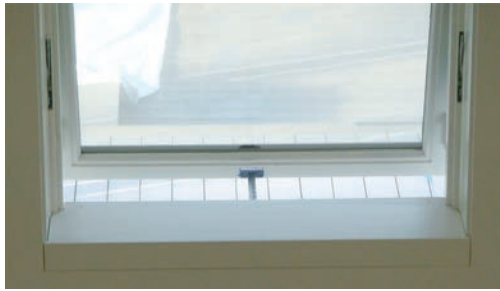
Key Features of FFI Actuators & Controls

- Most models can be interfaced with Building Management Systems (BMS, BACnet, LON, etc).
- Low voltage DC actuators are recommended for energy efficiency and safety (AC models also available).
- Stainless steel chains on most motorized operators.
- Almost any opening distance (chain stroke) is possible, from 1 inch to 40 inches.
- Standard case colors are grey, white, or black available for most models.
- Actuators can be concealed from view.
- All featured models are certified for Smoke and Heat Extraction (SHE).
- Compatible with most window and skylight brands.

FFI offers technical help in the project design phase for product choices, system layout, and budgeting.
 Visit us at www.fenestration.net/actuators.



multiple windows can be linked for simultaneous operation



actuator concealed from view

Applications for Actuator & Control Systems

Almost any operable opening can be automated: awning (top-hinged), hopper (bottom-hinged), casement (side-hinged), hung or sliding windows; parallel windows (hinged on 4 sides); skylights, curtain wall and other vents.

- **Natural Ventilation systems**, such as operable windows and skylights, save energy and lower operating costs by reducing air conditioning and heating use.
- **Smoke Evacuation systems** reduce smoke, heat and casualties during a fire; FFI actuators are SHE certified.
- **LEED credits for green building projects** can be earned under Indoor Environmental Quality for Natural Ventilation, Daylighting and Views.



For Commercial, institutional and residential projects, including schools, universities, municipal buildings, offices, gymnasiums, homes, condos, and more.

Rely on FFI

Functional Fenestration Inc (FFI) has served the North American construction community since 1987, with high quality architectural hardware and motorized solutions for fenestration (doors, windows & skylights). FFI clients include manufacturers and re-sellers of doors, windows, skylights and hardware; glazing contractors, fabricators, and curtain wall companies. We also provide solutions for architects, contractors and building automation specialists.

FFI has three areas of product emphasis:

- **FFI design** contract-manufactured architectural hardware.
- **Distribution** of window and door hardware from top global manufacturers.
- **FFI Actuators & Controls** electric window systems for natural ventilation and smoke evacuation projects.

FFI design solutions

FFI has solutions to automate almost any windows or vents in commercial, institutional and residential projects. Contact FFI during the project design phase, for technical expertise in choosing a correct system, help with system layout, and budgeting advice.

Contact the FFI experts:

Toll-free 800-677-0228
Email sales@fenestration.net
Website www.fenestration.net

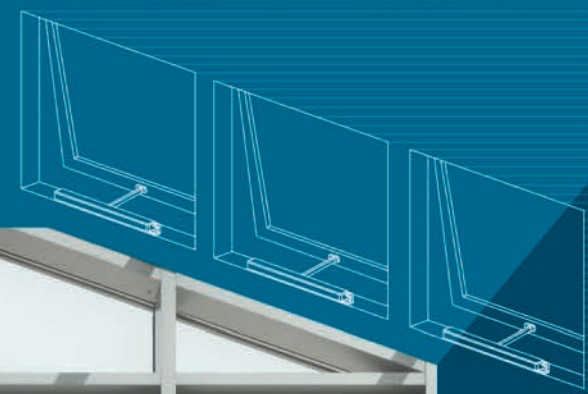
FUNCTIONAL FENESTRATION INC.



FUNCTIONAL FENESTRATION INC.

FFI Actuator & Control Systems

Functional Fenestration Inc (FFI) is the expert and market leader —
 Motorizing actuators and controllers for windows, vents, and skylights for American commercial, institutional and residential projects.



Actuators

Actuators

Controls

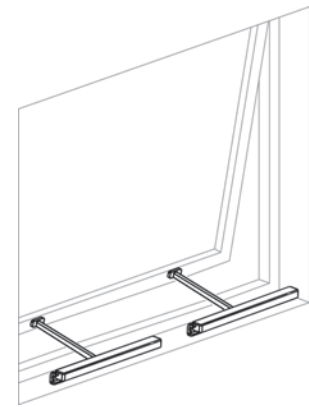
LM2, EM, FM Series Chain Actuators UL Recognized, DC Actuators

LM2 actuators are very compact (up to 44 lbs push/pull force).

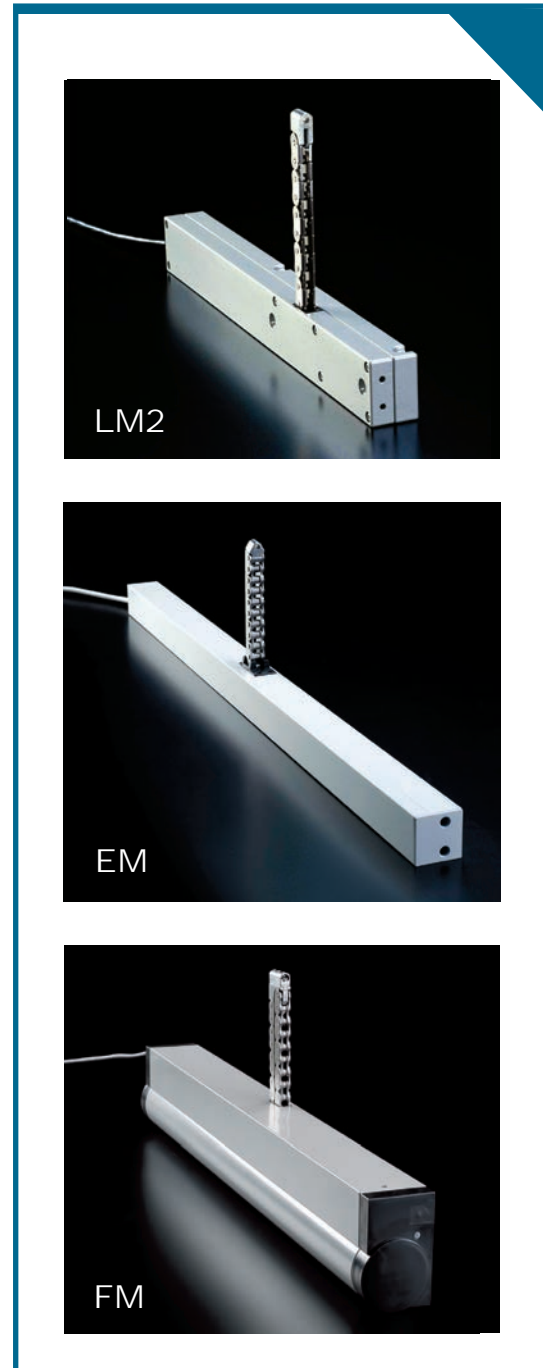
EM actuators have a centered chain (up to 68 lbs push/pull force).

FM is the strongest chain drive offered in North America (up to 158 lbs push/pull force).

Paired actuator options for wide windows include: LM2 Tandem, EM Tandem, FM Tandem.



RM locking motors are available to add lock points to compatible windows with LM2, EM, or FM actuators.



Vega and Quasar Series Chain Actuators UL Recognized, AC/DC Actuators

Vega has an attractive case and the chain is self-adjusting at closure (55 lbs push/pull force for standard model).

Synchro-Vega is for wide vents needing 2 to 4 motors.

Twin-Vega Synchro is two actuators in one case.

Quasar is a high force actuator and the chain is self-adjusting at closure (66 lbs push/pull force for standard model).

Synchro-Quasar is for wide vents needing 2 to 4 motors.

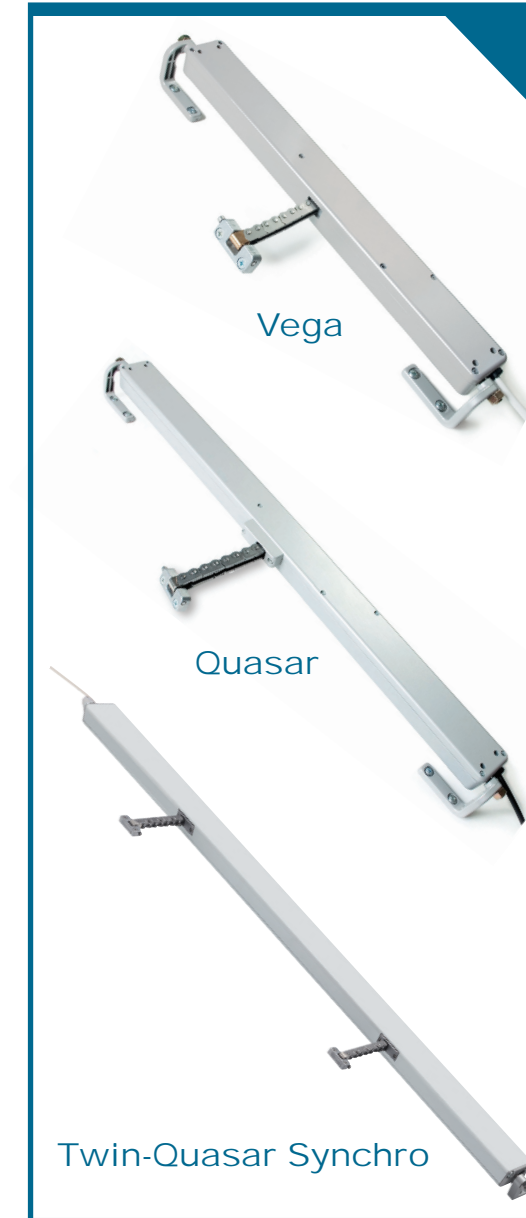
Twin-Quasar Synchro is two actuators in one case.

Quasar-L is a longer Quasar for larger openings.

Synchro-Quasar-L is for extra-wide vents needing 2 to 4 motors.

Linear actuators operate by movement of a linear spindle.

Linear actuators the best choice for are for wet and humid environments, such as pool rooms and greenhouses. Other applications include sliding windows, louvers, and where high force is needed (up to 220 lbs).



Truth Products

As a Truth distributor since 1987, FFI has available Sentry II WLS operator motors, HS chain motors, Marvel chain motors, and Truth hinges for casement and awning windows.

WLS motors—ideal for residential & retrofit



FFI UL Control Panels

FFI is a UL Registered Firm and manufacturer of Control Panel Systems with actuators.

FFI UL Control Panels act as an interface between FFI DC Actuators and Direct Digital Control (DDC) systems such as Building Automation or Management Systems (BAS or BMS), Home Automation Systems or Heating/Ventilation/Air Conditioning Systems (HVAC).

- **FFI UL Control Panels contain** Programmable Controllers, Power Supply and other components as needed.
- **Programmable features** include custom control of actuator chain opening length, and actuator signal feedback to confirm open or closed window position.
- **Flexibility** to meet almost any project design needs, for single or multiple actuators and multiple groups.
- **Range of sizes and capacities** from small to large, for Power Supplies (5 - 20 amps) and RQ control units (up to 4).

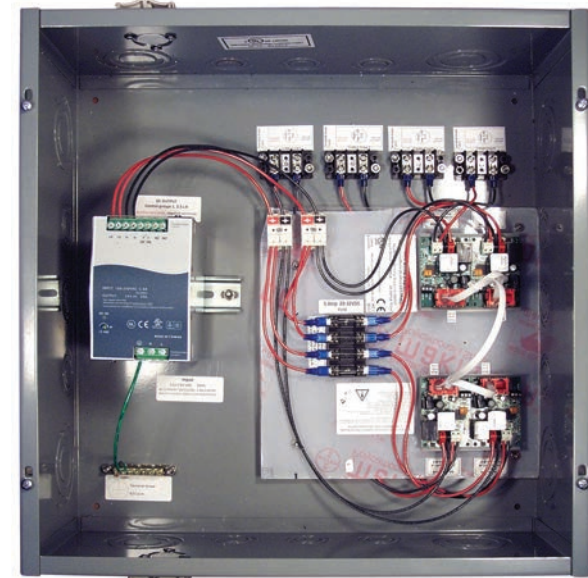
FFI only recommends UL compliant systems.



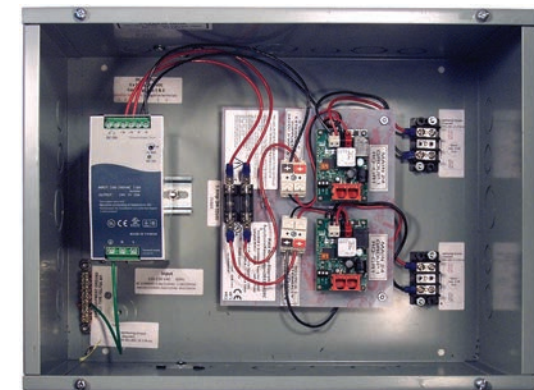
Field Power Switch for use with FFI DC Actuators

For testing, installation and maintenance, such as to extend the chain to attach to a window at installation.

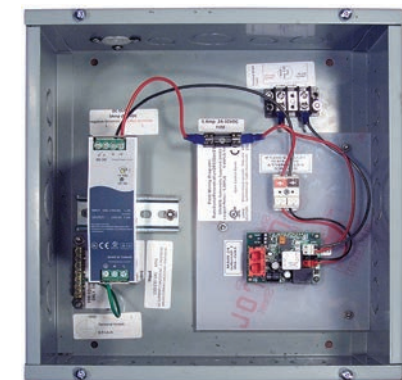
For connecting one to 3 actuators, (up to 1.0 amps total of actuators at startup).



CP-4RQ-20A.DC-UL



CP-2RQ-10A.DC-UL



CP-1RQ-5A.DC-UL