DESIGN INTENT

Operable windows shall be provided at exterior walls where shown on Drawings. These windows shall function together as a component of a passive ventilation system. Such designated windows at exterior walls shall be mechanically controlled and operated. Each mechanically operable window shall be controlled by a central control system connected to all mechanically operable windows for that space. This control will engage the HVAC system when windows are closed, and disengage the HVAC system when the windows are open. It shall engage the HVAC system through a contact provided to one single window at each space.

See Electrical and Mechanical Drawings for more information regarding equipment and wiring.

**PRODUCTS**

MANUFACTURERS

* Basis of Design: Automated Fenestration Inc. [www.automatedfenestration.com](http://www.automatedfenestration.com)

WINDOW ACTUATORS

* Motorized Awning Windows Actuator: SmartMotion DC chain actuators EM 189-810 Series
  + EM Series actuators have slim casing and low-noise operation.
  + Push/Pull Force up to 68 lb.
  + Actuator has stainless steel chain for rigidity and durability, and is available in standard grey, white, or black color.
  + Can be concealed in frame or curtain wall.
  + EM standard models are UL Recognized.
  + UL cable 1 meter included, black color.
  + Tested to 10,000 cycles.
  + 2-year or 10,000 cycle manufacturer's warranty; requires use according to Installation Guide recommendations.

Specifications:

* + Supply voltage: 24 V DC (-10 % *I* +25 %)
  + Normal current amp draw: Approx. 1.0 amp\* at 300N load
  + Limit stop: (Open): built-in limit switch
  + (Closed): integrated electronic power cut-off
  + Chain stroke length (approx): 13/16 inch to 20-1/8 inch, adjustable.
  + 13/16 inch to 23-3/4 inch, adjustable 13/16 inch to 31-7/8 inch, adjustable
  + Chain installation adjustment: Automatic adjustment.
  + Push force (max): 68 lbf +/- 3%) for 21mm - 603mm chain, adjustable.
  + 22 lbf +/- 3%) for 604mm - 810mm chain, adjustable.
  + Pull force (max): 68 lbf +/- 3%), adjustable, for all models.
  + Nominal clamping force (max): 675 lbf +/- 3%) force needed to rip chain out of actuator case.
  + Min. sash height at stroke length: (dependent on profile cross-section and thickness)
  + 511 mm stroke: 28-9/16 inch sash height. 603 mm stroke: 33-11/16 inch sash height. 810 mm stroke: 43-5/16 inch sash height.
  + Chain speed: 0.196 inch/sec to 0.393 inch/sec), adjustable.
  + Actuator Dimensions (I x h x d): ·
  + 21-511 mm chain = 32-1/4 x 1-9/16 x 1-9/16 inch.
  + 21-603 mm chain = 39-13/16 x 1-9/16 x 1-9/16 inch. 21-810mm chain = 39-13/16 x 1-9/16 x 1-9/16 inch.
  + Power cable: UL cable 1 meter included, black color.
  + Run/Rest cycle: For every 60 seconds running (ON), must then rest (OFF) for 120 seconds.
  + Ambient operating temperature: 14 deg F to 140 deg F.
  + Safety marks: CE.
  + Protection class: IP 20.
  + Case: Aluminum profile.
  + Colors (standard): Powder-coated: silver grey (RAL 9006), white (RAL 9016), or black (RAL 9005).
  + Special colors: Other RAL colors on request, see accessory data sheet.
  + Opening mechanism: Stainless steel chain, chain is centered in case.

Control Panel : Relay Station ; Core Control

* + Powered control panels for 24VDC actuators
  + DIN rail mounted 120VAC/24VDC power supply
  + Quick connect input terminals
  + One-touch open/close control
  + Two-year manufacturer’s warranty.
  + Requires reading AFI Install Guide before purchase, and confirmation of project and installation specs by licensed electrical contractor.

Window Actuator Controllers can be manufactured to have:

• Power output from 30W up to 400W;

• 1 to 4 command modules;

• 1 general command module

• 1 to 12 output modules