

EM Tandem

SmartMotion DC chain actuators



Made in Germany

Functional Fenestration Inc (FFI) is an expert and leader in the American motorized actuator market, with a broad range of motors for windows, vents, and skylights. FFI has been providing motorized operators for natural ventilation since 1987, for institutional, commercial and residential applications.

Benefits of motorized actuators

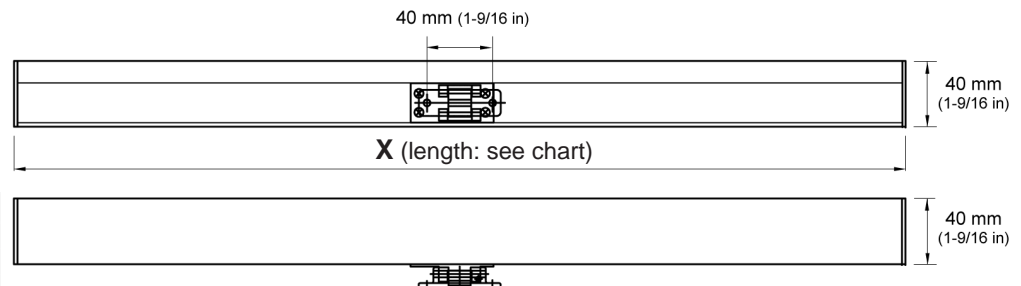
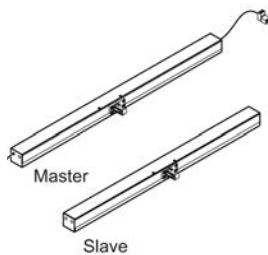
- Automated operation of multiple awning windows, hopper windows, casement windows, curtain wall vents, and skylights.
- Ideal for smart buildings; integrate with building and home automation systems.
- EM actuators are certified for Smoke and Heat Extraction (SHE).
- Natural ventilation enables lower energy consumption, lets in fresh air and daylight, enables LEED credit.
- Low voltage DC motors are energy efficient.

Features

- Tandem is 2 actuators (master and slave) connected by a cable, designed for wide vents.
- The actuators can be mounted at any distance apart from each other on the vent.
- EM series has a slim casing and low-noise operation.
- Push/Pull Force up to 300 N (68 lb) for each actuator to operate 189mm - 603mm chain versions.
- Opening distance ranges from 189 mm to 810 mm approx., according to version.
- Multiple windows may be linked for simultaneous operation.
- Actuators have stainless steel chains for rigidity and durability.
- Tight vent closure using electronic power cut-off.
- UL Recognized.
- Sash connectors/hinge brackets and all mounting brackets for EM are available in EM Bracket kits (sold separately) rather than included with the actuator; see EM Brackets & Accessories DataSheet.
- Actuators are available in standard grey, white, or black color.
- UL cable 1 meter included, black color.
- Tested to 10,000 cycles.
- 2-year manufacturer's warranty; requires use according to Installation Guide recommendations.



sash connector/
hinge bracket



X = length (tolerance +/- 1mm)	
at stroke	length
at 189 - 419 mm stroke	636 mm (25 in)
at 511 - 603 mm stroke	820 mm (32-1/4 in)
at 810 mm stroke	1011 mm (39-13/16 in)

EM Tandem

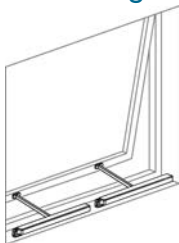


Applications

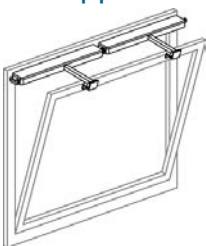
On Wall or Frame



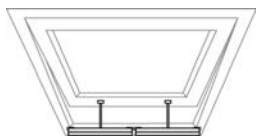
Awning



Hopper



Skylight



Specifications

Supply voltage: 24 V DC (-10 % / +25 %)
 Normal current amp draw: approx. 2 x 0.8 amp* at 300N load
 Limit stop: (Open): built-in limit switch
 (Closed): integrated electronic power cut-off
 Chain stroke length (approx): 189 mm (7-7/16 inch) 258 mm (10-1/8 inch)
 327 mm (12-7/8 inch) 419 mm (16-1/2 inch)
 511 mm (20-1/8 inch) 603 mm (23-3/4 inch)
 810 mm (31-7/8 inch)
 Chain installation adjustment: automatic adjustment
 Push force (max): 2 x 300 N (2 x 68 lbf +/- 3%) for 189mm – 603mm chain
 2 x 100 N (2 x 22 lbf +/- 3%) for 810S chain
 Pull force (max): 2 x 300 N (2 x 68 lbf +/- 3%) for 189mm – 603mm chain
 2 x 250 N (2 x 55 lbf +/- 3%) for 810S chain
 Nominal clamping force (max): 2 x 3000 N (2 x 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)
 189 mm stroke: 255 mm (10 in) sash height
 258 mm stroke: 355 mm (14 in) sash height
 327 mm stroke: 445 mm (17-1/2 in) sash height
 419 mm stroke: 590 mm (23-1/4 in) sash height
 511 mm stroke: 725 mm (28-9/16 in) sash height
 603 mm stroke: 855 mm (33-11/16 in) sash height
 810 mm stroke: 1100 mm (43-5/16 in) sash height
 Chain speed: (for 189mm – 603mm chain): approx. 9 mm/sec (0.354 in/sec)
 (for 810(S)** mm chain): approx. 14 mm/sec (0.551 in/sec)
 ** S indicates extra speed for this model.
 Actuators Dimensions (l x h x d): 189-419 mm chain = 636 x 40 x 40 mm (25 x 1-9/16 x 1-9/16 in)
 511-603 mm chain = 820 x 40 x 40 mm (32-1/4 x 1-9/16 x 1-9/16 in)
 810(S) mm chain = 1011 x 40 x 40 mm (39-13/16 x 1-9/16 x 1-9/16 in)
 Power cable: UL cable 1 meter included, black color
 Connection cable: 2-pole cable; length approx. 1.5 meter (59-1/16 inch)
 Run/Rest cycle: For every 60 seconds running (ON), must then rest (OFF) for 120 seconds.
 Ambient operating temperature: -10 °C to +60 °C (14 °F to 140 °F)
 Safety marks: ANSI / UL Recognized : E 306715 , manufacturer STG Beikirch
 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 chains, chains are centered in the cases

*Calculate power supplies and control boxes needed based on peak draw of 2 times normal amp draw.

FFI EM Tandem UL Actuators

Stroke (and push/pull Force)	Part Numbers		
	Silver Grey	White	Black
2 x 189 mm (300 N) 7-7/16 in (68 lbf +/- 3%)	2407621	2407613	13324576213
2 x 258 mm (300 N) 10-1/8 in (68 lbf +/- 3%)	2407654	2407647	13324576543
2 x 327 mm (300 N) 12-7/8 in (68 lbf +/- 3%)	2407688	2407670	13324576883
2 x 419 mm (300 N) 16-1/2 in (68 lbf +/- 3%)	2407712	2407704	13324577123
2 x 511 mm (300 N) 20-1/8 in (68 lbf +/- 3%)	2407746	2407738	13324577463
2 x 603 mm (300 N) 23-3/4 in (68 lbf +/- 3%)	2407779	2407761	13324577793
2 x 810S mm (100 N) 31-7/8 in (22 lbf +/- 3%)	2406011	2406012	13324560113

EM Accessory Parts

	EM Status Signal open close (added at factory)	part # 50000939
	EM brackets	see EM Brackets & Accessories DataSheet

Recommendations for FFI Actuators & Controls: FFI only recommends UL compliant systems. FFI is a UL registered firm. Read FFI data sheets & installation guides before specifying project details. Project-specific needs vary depending on the number of actuators, electrical layouts, building management systems, distance between power supplies & actuators, and other details. Project specifications to comply with electric & building codes—for wire gauge, wire connections and run distance, conduits, junction boxes—must be arranged by the project electrical contractors. Distribute this guide to all project parties, including electrical contractors, architects, and building management personnel.