

Direct Coupled Damper Actuator—Spring Return

S10 Series: MS4110; MS7510; MS8110

Spring Return Direct Coupled Actuator, 88 lb-in



Actuator Type: Damper; Valve
Rotational Stroke: 95 ±3 degrees
Fail Safe Mode: Spring Return
Torque Rating: 88 lb-in. (10 Nm)
Spring Return Torque: 88 lb-in. (10 Nm)
Spring Return Direction: By orientation
Dimensions, Approximate: 9.72 in high x 3.94 in wide x 2.95 in deep
(247 mm high x 100 mm wide x 75 mm deep)
External Auxiliary Switches Available: Yes, SW2-US
Environmental Rating: NEMA2
Frequency: ;50 Hz; 60 Hz
Manual operation: Manual crank
Mounting: Direct Coupled
Maximum Noise Rating, Holding (dBA @ 1m): 20 (no audible noise)
Maximum Noise Rating, Driving (dBA @ 1m): 40
Rotational Stroke Adjustment: Mechanically limited 5 degree increments

MS4110, MS7510, and MS8110 Spring Return Direct Coupled Actuators (DCA) are used within heating, ventilating, and air-conditioning (HVAC) systems. They can drive a variety of quarter-turn, final control elements requiring spring return fail-safe operation.

- Brushless DC submotor with electronic stall protection for floating/modulating models.
- Brush DC submotor with electronic stall protection for 2-position models.
- Self-centering shaft adapter (shaft coupling) for wide range of shaft sizes.
- Models available for use with two-position, single pole single throw (spst), line- (Series 40) or low- (Series 80) voltage controls.
- Models available for use with floating or switched single-pole, double-throw (spdt) (Series 60) controls.
- Models available for use with proportional current or voltage (Series 70) controls.
- Models available with combined floating/modulating control in a single device.
- Models available with adjustable zero and span.
- Models available with line-voltage internal end switches.
- Models available with three-foot, 18 AWG color-coded cable.
- Access cover to facilitate connectivity.
- Metal housing with built-in mechanical end limits.
- Spring return direction field-selectable.
- Shaft position indicator and scale.
- Manual winding capability with locking function.
- UL (cUL) listed and CE compliant.
- All Models are plenum-rated per UL873.

Compatible Damper Shafts: 3/8 to 1.06 in. round or 3/8 to 11/16 in. square (10 to 27 mm round or 10 to 18 mm square)

Shaft Adapter Type: Self-centering clamping

Materials: Aluminum housing, Plenum rated plastic access cover

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Ambient Temperature Range: -40 F to +140 F (-40 C to +60 C)

Storage Temperature Range: -40 F to +158 F (-40 C to +70 C)

Weight: 7.4 lb (3.36 kg)

Includes: Mounting bracket, self-centering shaft adapter, 3mm crank

Comments: Integral 1/2 in. NPSM conduit connection

Approvals

CE: 89/336/ECC, 73/23/EEC

C-Tick: N314

Underwriters Laboratories, Inc: UL873, Plenum Rated

Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

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Product Number	Control Signal	Feedback	Timing (seconds)		Switch Ratings	Power Consumption		Supply Voltage	Input Impedance	Cable Entry	Electrical Connections	Electrical Connection Length		Number of Internal Auxiliary Switch
			Nominal Driving @ 60 Hz	Maximum Spring Return (sec)		Driving	Holding					(Inch)	(m)	
MS4110A1002/U	Two position ; SPST	—	45 sec	20 sec	—	45 VA	13 VA	100 to 250 Vac	—	—	Enclosed screw terminal strip (22 to 14 AWG)	—	—	0
MS4110A1200/U		—	45 sec	20 sec	250 Vac, 5 A res	45 VA	13 VA	100 to 250 Vac	—	—		—	—	2
MS7510A2008/U	(0)2-10 Vdc (4-20 mA w/500 ohm resistor) ; On/Off; SPDT; Floating	2-10 Vdc (max. output: ±1.0 mA)	90 sec	20 sec	—	14 VA	5 VA	24 Vac/dc	Min. 95 kOhm	—	Enclosed screw terminal strip (22 to 14 AWG)	—	—	0
MS7510A2206/U		2-10 Vdc (max. output: ±1.0 mA)	90 sec	20 sec	250 Vac, 5 A res	14 VA	5 VA	24 Vac/dc	Min. 95 kOhm	—		—	—	2
MS7510H2209/U		2-10 Vdc (max. output: ±1.0 mA)	90 sec	20 sec	250 Vac, 5 A res	14 VA	5 VA	24 Vac/dc	Min. 95 kOhm	—		—	—	—
MS7510W2008/U	(0)2-10 Vdc (4-20 mA w/500 ohm resistor) ; Floating	2-10 Vdc (max. output: ±1.0 mA)	90 sec	20 sec	—	14 VA	5 VA	24 Vac/dc	Min. 95 kOhm	Threaded conduit connector	18 AWG color-coded cable	36 in.	0.9 m	0
MS7510W2206/U		2-10 Vdc (max. output: ±1.0 mA)	90 sec	20 sec	250 Vac, 5 A res	14 VA	5 VA	24 Vac/dc	Min. 95 kOhm	Threaded conduit connector		36 in.	0.9 m	2
MS8110A1008/U	Two position ; SPST	—	45 sec	20 sec	—	30 VA	8 VA	24 Vac/dc	—	—	Enclosed screw terminal strip (22 to 14 AWG)	—	—	0
MS8110A1206/U		—	45 sec	20 sec	250 Vac, 5 A res	30 VA	8 VA	24 Vac/dc	—	—		—	—	2
MS8110W1008/U		—	45 sec	20 sec	—	30 VA	8 VA	24 Vac/dc	—	Threaded conduit connector	18 AWG color-coded cable	36 in.	0.9 m	0
MS8110W1206/U		—	45 sec	20 sec	250 Vac, 5 A res	30 VA	8 VA	24 Vac/dc	—	Threaded conduit connector		36 in.	0.9 m	2