

Electric Actuators

141 and 142 Series

Swagelok® electric actuators can be used to control the position of many Swagelok ball valves; alternating- and direct-current models are available. An electrical signal is used to change valve position from remote locations. Integral limit switches provide an output signal of the valve position, even between positions.

Features

- Compact actuator can be mounted in any orientation and is available for on-off (2-way), switching (3- and 5-way), and crossover (4-way) valve actuation.
- Enclosure meets NEMA 4X (NPT conduit) or IP66 (G 1/2 conduit) specifications.
- Conduit connection allows wiring to be done with actuator mounted and cover removed.
- Wiring diagrams are located inside the actuator cover and in user manual shipped with actuator or assembly.
- Wiring can be completed without soldering or crimping of connectors.
- Integral limit switches provide output signal of valve position.



Testing

Every 141 and 142 series electric actuator is factory tested for actuation within rated cycle times and for proper output signal at all positions.

Materials of Construction

Component	Material
Base, cover	Cast aluminum with baked polyester coating
Bushing	Nylon
O-rings	Buna N
Fasteners, drive shaft	Stainless steel

Technical Data

Operating Temperature Range

20 to 150°F (–7 to 65°C)

Output Torque

- 141 series: 25 in.-lb (2.8 N·m)
- 142 series: 100 in.-lb (11.3 N·m)

Actuator Specifications

Voltage/ Frequency/ Conduit Connection	Valve Flow Path	Actuator Designator	Operating Current amperes	90° Actuation Time, Approx seconds	Duty Cycle ^① at 70°F (20°C)
141 series actuators					
120 V (ac)/ 60 Hz/ 1/2 in. NPT	2- and 4-way	-41AC	1.1	2.5	40 %
	3-way	-41ACX			
	5-way ^②	-41ACZ			
220/230/240 V (ac)/ 50 Hz G 1/2	2- and 4-way	-41ACE	0.5	2.5	220 V—40 % 230 V—35 % 240 V—30 %
	3-way	-41ACXE			
	5-way ^②	-41ACZE			
100 V (ac)/ 60 Hz G 1/2	2- and 4-way	-41ACJ	1.2	2.5	35 %
	3-way	-41ACXJ			
	5-way ^②	-41ACZJ			
100 V (ac)/ 50 Hz G 1/2	2- and 4-way	-41ACN	1.1	3.0	45 %
	3-way	-41ACXN			
	5-way ^②	-41ACZN			
24 V (dc)/ 1/2 in. NPT	2- and 4-way	-41DC	0.3	2.5	100 %
	3-way	-41DCX			
	5-way ^②	-41DCZ			
24 V (dc)/ G 1/2	2- and 4-way	-41DCE	0.3	2.5	100 %
	3-way	-41DCXE			
	5-way ^②	-41DCZE			
142 series actuators					
120 V (ac)/ 60 Hz/ 1/2 in. NPT	2 and 4 way	-42AC	1.7	4.0	25 %
	3-way	-42ACX			
	5-way ^②	-42ACZ			
220/230/240 V (ac)/ 50 Hz G 1/2	2- and 4-way	-42ACE	0.7	4.0	220 V—30 % 230 V—25 % 240 V—20 %
	3-way	-42ACXE			
	5-way ^②	-42ACZE			
100 V (ac)/ 60 Hz G 1/2	2- and 4-way	-42ACJ	2.0	4.0	25 %
	3-way	-42ACXJ			
	5-way ^②	-42ACZJ			
100 V (ac)/ 50 Hz G 1/2	2- and 4-way	-42ACN	1.6	4.5	30 %
	3-way	-42ACXN			
	5-way ^②	-42ACZN			
24 V (dc)/ 1/2 in. NPT	2- and 4-way	-42DC	0.9	4.0	100 %
	3-way	-42DCX			
	5-way ^②	-42DCZ			
24 V (dc)/ G 1/2	2- and 4-way	-42DCE	0.9	4.0	100 %
	3-way	-42DCXE			
	5-way ^②	-42DCZE			

① **CAUTION: DO NOT EXCEED LISTED DUTY CYCLE. ALTERNATING-CURRENT MODELS CONTAIN THERMAL OVERLOAD PROTECTION SWITCH THAT CUTS POWER TO THE MOTOR TO PREVENT OVERHEATING. IF PROTECTION SWITCH IS ENGAGED, VALVE WILL NOT CYCLE. SWITCH RESETS AUTOMATICALLY WHEN MOTOR COOLS.**

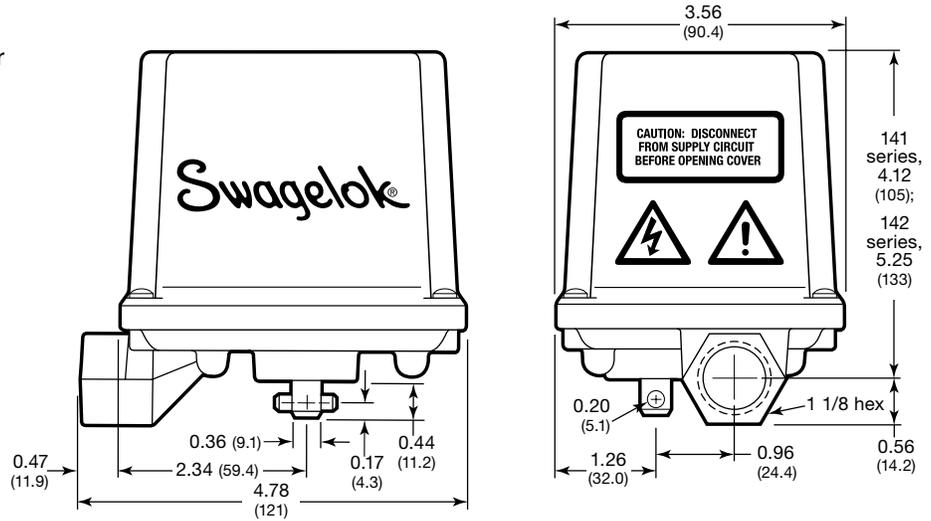
② Actuators used on 5-way ball valves switch only to the next port in clockwise rotation.

Dimensions

Dimensions, in inches (millimeters), are for reference only and are subject to change.

⚠ DO NOT USE THESE ACTUATORS ON VENTED BALL VALVES. THE DRIVE SHAFT OF THESE ACTUATORS ROTATES IN ONE DIRECTION.

⚠ Not CE marked.



Ordering Information

Factory-Assembled Valve and Actuator

1. Select a valve ordering number from an individual product catalog.

Example: **SS-63TS8**

2. Choose the actuator that corresponds with the selected valve series.

Valve Series	Actuator Series
41G, 41, 41T, 42G, 42, 42T, 62C, 62E, 62T, 62V, PFA-43, 83 (2-way) 83 (3-way) ^① , H83 ^①	141
43G, 43, 43T, 44, 44T, 62P, 63C, 63E, 63T, 63P, S62P, S63P ^② , W63, 83 (2- and 3-way), H83	142

^① System pressure not to exceed 3000 psig (206 bar).

^② System pressure not to exceed 2000 psig (137 bar).

Example: A **63T** series valve requires a **142** series actuator.

See the **Actuator Specifications** table on page 2.

3. Select the preferred voltage/frequency/conduit connection for the required actuator.

Example: **120 V (ac)/60 Hz/1/2 in. NPT**

4. Identify the valve flow path.

Example: **2-way**

5. Add the actuator designator to the valve ordering number.

Example **SS-63TS8-42AC**

Actuator Kits for Field Assembly

1. Identify the valve series.
2. Follow steps 2 through 4 in the **Factory-Assembled Valve and Actuator** ordering instructions.
3. Replace the dash in the actuator designator with **MS-1**.
Example: **MS-141AC**
4. Select the mounting bracket kit ordering number from the table below. Kits include mounting brackets, cap screws, coupling, and instructions.

Valve Series	Mounting Bracket Kit Ordering Number
41G, 42G	SS-MB-41G
43G	SS-MB-43G
41, 41T, 42, 42T	MS-MB-41
43 (2- and 3-way), 43T	MS-MB-43
43 (4- and 5-way)	MS-MB-43Y
44, 44T	MS-MB-44-131
62C, 62E, 62P, 62T, 62V	MS-MB-62
S62P	MS-MB-S62
63C, 63E, 63P, 63T, S63P	MS-MB-63-131
PFA-43	MS-MB-P43-141
W63	MS-MB-73-131
83, H83	MS-MB-83-131

For information about use on ball valves with special flow paths, contact your authorized Swagelok sales and service representative.

Safe Product Selection

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

Caution: Do not mix or interchange parts with those of other manufacturers.

Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit swagelok.com or contact your authorized Swagelok representative.