

Non-Spring Return Electric Linear Valve Actuators

ML6420, ML7420

ML6421, ML7421

The ML6420, ML7420, ML6421, and ML7421 Non-Spring Return Electric Linear Valve Actuators provide single-pole double-throw (spdt), Series 60 two-position and floating or modulating control to operate standard Honeywell valves in heating, ventilating, and air conditioning (HVAC) applications. The modulating actuators accept an analog output of 0 to 10 Vdc or 2 to 10 Vdc, and an internal selector plug can be used to reverse the direction of action.

SPECIFICATIONS

Models:

Model	Run Time at 60 Hz	Stem Force in lbf (N)	Stroke in in. (mm)	Description
ML6420A	60 sec or 30 sec ^a	135 (600)	3/4 (20)	Electric Linear Valve Actuator
ML7420A				
ML6421A	95 sec	405 (1800)	3/4 (20)	
ML7421A				
ML6421B	175 sec	405 (1800)	1-1/2 (38)	
ML7421B				

^a Dependant on actuator model.

Dimensions: See Fig. 1.

Weight:

- ML6420, ML7420: 2.9 lb (1.3 kg).
- ML6421, ML7421: 5.1 lb (2.3 kg).

Electrical Ratings:

- Power Input: 24 Vac (+10%, -15%), 60 Hz.
- Power Consumption (at 24 Vac):
 - ML6420: 6 VA maximum.
 - ML7420: 7 VA maximum.
 - ML6421: 11 VA maximum.
 - ML7421: 12 VA maximum.

Signal Inputs:

- ML6420, ML6421:
 - 24 Vac across T1 and W: Drives stem downward.
 - 24 Vac across T2 and B: Draws stem upward.
- ML7420, ML7421: 0 to 10 Vdc or 2 to 10 Vdc.

Ambient Ratings:

- Temperature:
 - Ambient Range: 14°F to 122°F (-10°C to +50°C).
 - Storage Range: -40°F to +158°F (-40°C to +70°C).
- Humidity: 5 to 95 percent relative humidity, noncondensing.

Cable Entry:

- ML6420, ML7420: Conduit connector and one case knockout for 1/2 in. conduit.
- ML6421, ML7421: Two case knockouts for 1/2 in. conduit.

Protection Standard:

- IP54.

Close-off Pressure Ratings: See Table 1.

SPECIFICATION DATA

FEATURES

- Quick and easy installation.
- No separate linkage or adjustments required.
- High close-off ratings.
- Force-limiting end switches.
- Synchronous motor.
- Maintenance-free, corrosion-resistant design.
- Manual operator.
- Conduit connector standard on ML6420, ML7420
- Conduit knockout standard on ML6421, ML7421.
- Accurate valve positioning.
- Low power consumption.
- Direct/reverse acting with ML7420, ML7421.
- Position feedback signal with ML7420, ML7421.

Actuator Material:

- Cover:
 - ML6420, ML7420: ABS-FR plastic.
 - ML6421, ML7421: ABS plastic.
- Base:
 - ML6420, ML7420: PBTP-FR plastic.
 - ML6421, ML7421: Diecast aluminum.
- Yoke: Diecast aluminum.

Approvals:

- Underwriter's Laboratories, Inc. Component Recognized.
- Meets UL94-5V plenum requirements.
- Canadian Standards Association Listed.
- Meets CE requirements.

Accessories:

- 43196000-001 High Temperature Kit (for actuators with 3/4 in. stroke). Increases the maximum temperature to 428°F (220°C).
- 43196000-102 High Temperature Kit (for actuators with 1-1/2 in. stroke). Increases the maximum temperature to 428°F (220°C).
- 43191679-111 Single Auxiliary Potentiometer (10K ohm).
- 43191679-112 Single Auxiliary Potentiometer (220 ohm).
- 43191680-102 Dual Auxiliary Switch (24 Vac use only).

ML6420/ML6425 Only

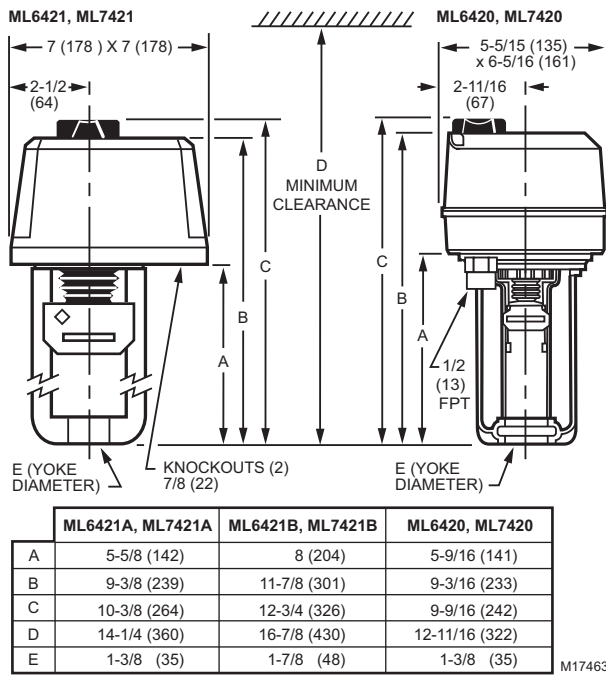
- 43191679-101 Single Auxiliary Potentiometer.
- 43191679-102 Single Auxiliary Potentiometer.
- 43191679-103 Dual Auxiliary Potentiometer.
- 43191679-104 Dual Auxiliary Potentiometer.
- 43191680-105 Dual Auxiliary Switch (24 Vac use only).

ML7420/ML7425 Only

- 43191680-205 Dual Auxiliary Switch (24 Vac use only).



TYPICAL SPECIFICATION



Valve actuators shall mount directly to the bonnet of the valve, and connect to the valve stem without requiring adjustments, linkages, brackets or adapters.

Direct coupled valve actuators shall be 24 Vac power, available with floating or analog control signal inputs, and available for either direct (stem down to close) or reverse acting (stem up to close) stroke direction.

Models with spring return and non-spring return shall be available. Non-spring return actuators shall have manual override capability without removal of the actuator cover or actuator.

Auxilliary switches, auxilliary feedback, and high temperature kits for steam applications, shall be optional factory accessories for direct coupled valve actuators.

Direct coupled valve actuators shall be manufactured by the same company that manufactures the valves. Actuators shall be UL and CSA listed, manufactured under ISO 9001 International Quality Control Standards.

Fig. 1. Approximate dimensions in in. (mm).

Table 1. Close-off Ratings for Electric Linear Valve Actuators and Honeywell Valves (psi).

Type	Valve	1/2 in.	3/4 in.	1 in.	1-1/4 in.	1-1/2 in.	2 in.	2-1/2 in.	3 in.	4 in. ^a	5 in. ^a	6 in. ^a
ML6420, ML7420												
Flange	V5011A	—	—	—	—	—	—	28	16	—	—	—
	V3350/3351/3450/3451	—	—	—	—	—	—	21	14	—	—	—
	V5013B,C; V3360/3361/3460/3461	—	—	—	—	—	—	21 ^b	14 ^b	—	—	—
NPT	V5011F,G	50 ^c	150 ^c	150 ^c	134 ^c	77	49	28	16	—	—	—
	V5011H,J	150	150	150	145	—	—	—	—	—	—	—
	V5011N1xxx, V5011N3xxx, V5013N	230	230	163	104	67	37	—	—	—	—	—
	V5011N2xxx	100 ^d	100 ^d	100 ^d	100 ^d	—	—	—	—	—	—	—
	V5013F	150	150	150	126	77	49	—	—	—	—	—
ML6421, ML7421												
Flange	V5011A,B,C	—	—	—	—	—	—	77	53	29	18	12
	V5011B	—	—	—	—	—	—	—	—	—	—	—
	V3350/51/60/61; V3450/51/60/61	—	—	—	—	—	—	63 ^b	45 ^b	25 ^b	16 ^b	11 ^b
NPT	V5011F,G	150 ^c	150 ^c	150 ^c	150 ^c	150 ^c	150 ^c	100	61	—	—	—
	V5011N1xxx, V5011N3xxx, V5013N	230	230	230	230	230	126	—	—	—	—	—
	V5011N2xxx	100 ^d	100 ^d	100 ^d	100 ^d	100 ^d	100 ^d	—	—	—	—	—
	V5013F	150	150	150	150	150	150	—	—	—	—	—

^a For use with ML6421B or ML7421B Actuators only.

^b Represents maximum pressure difference between the outlet and either of the two inlets.

^c Do not exceed 100 psi with V5011G valves used in steam applications.

^d Rating is for steam at maximum 100 psi. Ratings for water applications are the same as for the V5011N1xxx.

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