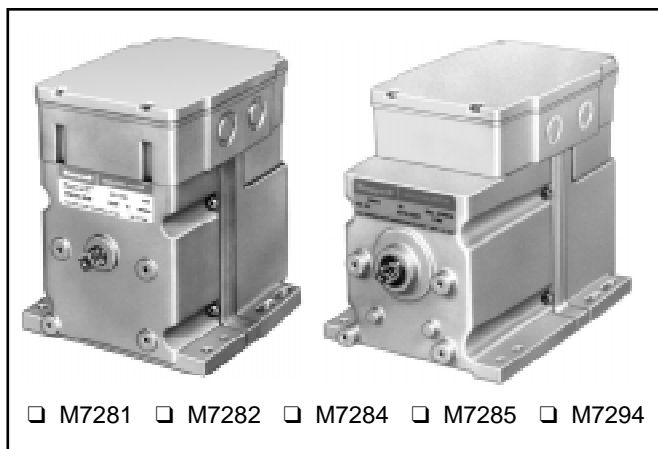


M7281, M7282, M7284, M7285, M7294 Modutrol IV™ Motors

SPECIFICATION DATA



APPLICATION

The M7281, M7282, M7284, M7285 and M7294 are Electronic Modutrol® Motors used to control dampers and valves. These motors accept a current signal from an electronic controller to position a damper or valve at any position between open and closed.

FEATURES

- Replace M744S,T,Y and M745S,T,Y Motors.
- M7284, M7281 are 150 lb.-in. non-spring return; M7294 is 300 lb.-in. non-spring return; M7285, M7282 are 60 lb.-in. spring return.
- Oil immersed motor and gear train for reliable performance and long life.
- Wiring box provides NEMA 3 weather protection.
- Quick-connect terminals standard—screw terminal adapter available.
- Adapter bracket for matching shaft height of older motors is standard with replacement motors.
- Die cast aluminum housing.
- Models available with integral auxiliary switches.
- Models available with adjustable zero and span.



SPECIFICATIONS

	M7281A,C,Q M7282A M7284A,C,Q M7285A,C,Q M7294A,Q	
Control Type		Suffix Letter
72 is electronic with current input		A: Fixed stroke (90° or 160°), No auxiliary switches
Power Designation		C: Fixed stroke (90° or 160°), 2 auxiliary switches
8 is high torque: 150 lb-in. for M7281, M7284; 60 lb-in. for M7282, M7285		Q: Fixed stroke (90° or 160°), 2 auxiliary switches, with adjustable zero and span
9 is extra high torque: 300 lb-in. at 2 or 4 minute timing		
Output Drive		
4 is dual-ended shaft, non-spring return.		
1 is single-ended shaft, non-spring return.		
5 is dual-ended shaft, spring return, mechanically normally closed.		
2 is single-ended shaft, spring return, mechanically normally closed.		

Electrical Ratings:

Voltage and Frequency: 120 Vac, 50/60 Hz.
 Power: M7281, M7284, M7294: 23W, 0.24A. M7282, M7285: 28W, 0.28A.

Controller:

These motors can be used with any electronic controller that provides a stable noise-free proportional current output; see Input Range.

Input Range:

M7281A,C; M7282A,C; M7284A,C; M7285A,C; M7294A: 4-20 mA nominal, 25 mA maximum.
 M7281Q, M7282Q, M7284Q, M7285Q, M7294Q: 4-20 mA adjustable, 50 mA maximum.
 Zero/Null (Motor Closed): .08 to 18 mA.
 Span: 1.8 to 18 mA.

Input Impedance:

100 ohms.

Motor Rotation:

Normally closed. The closed position is the limit of the counterclockwise rotation as viewed from the power end. All models rotate to the closed position on minimum input; M7282, M7285 spring return to the closed position on power interruption.

Stroke:

Fixed 90° or 160° stroke models available.

Timing:

Nominal 30 seconds for 90° stroke and 60 seconds for 160° stroke.

Torque:

M7181, M7184 150 lb-in. (17 N•m).
 M7182, M7185 60 lb-in. (6.8 N•m).
 M7294 300 lb-in. (34 N•m).

Maximum Damper Rating:

Motor Torque lb-in.	B dim	
	in.	mm
60	68	1727
150	202	5131
300	258	6553

Dead Weight Load On Shaft:

Power or Auxiliary End: 200 lb (90.8 kg) maximum.
 Maximum Combined Load: 300 lb (136 kg).

Ambient Temperature Ratings:

Maximum: 150°F (66°C) at 25% duty cycle.
 Minimum: -40°F (-40°C).

Shaft: 3/8 in. (9.5 mm) Square.

M7284, M7285, M7294 have dual-ended shaft.
 M7281, M7282 have single-ended shaft.

Dimensions:

See Fig. 1.

Auxiliary Switch Ratings (Amperes):

One Contact Rating ^a Amps	120V	240V
Full Load	7.2	3.6
Locked Rotor	43.2	21.6

^a40 VA pilot duty, 120/240 Vac on opposite contact.

Underwriters Laboratories Inc. Listed:

File No. E4436, Guide No. XAPX.

Canadian Standards Association Certified:

General Listed File No. LR1620, Guide No. 400-E.

Accessories:

- ES650117 Explosion-proof Housing: Encloses motor for use in explosive atmospheres. Not for use with Q601, Q618, and Q455 Linkages. Order separately from Nelson Electric Co. Requires Honeywell 7616DM Coupling.
- Q607 External Auxiliary Switch: Controls auxiliary equipment as a function of motor position.
- Q605 Damper Linkage: Connects motor to damper. *Includes motor crank arm.*
- Q618 Linkage: Connects Modutrol motor to water or steam valve.
- Q601 Bracket and Linkage Assembly: Connects Modutrol motor to water or steam valve.
- Q100A,B Linkage: Connects Modutrol motor to butterfly valve. Requires adapter bracket packed with motor.
- 221455A Infinitely Adjustable Crank Arm: Approximately 0.75 inch (19 mm) shorter than the 4074ELY Crank Arm. Can rotate through downward position and clear base of motor without requiring use of adapter bracket.
- 7617ADW Adjustable Crank Arm: Approximately 0.75 inch (19 mm) shorter than 7616BR Crank Arm.

220741A Screw Terminal Adapter: Converts the standard quick-connect terminals to screw terminals.
Transformers: Mounted internally, provide 24 Vac power to motor.

198162JA—24 Vac; 50/60 Hz (for electrical isolation).
198162EA—120 Vac; 50/60 Hz (included in motor).
198162GA—220 Vac; 50/60 Hz.
198162AA—120/208/240 Vac; 50/60 Hz.

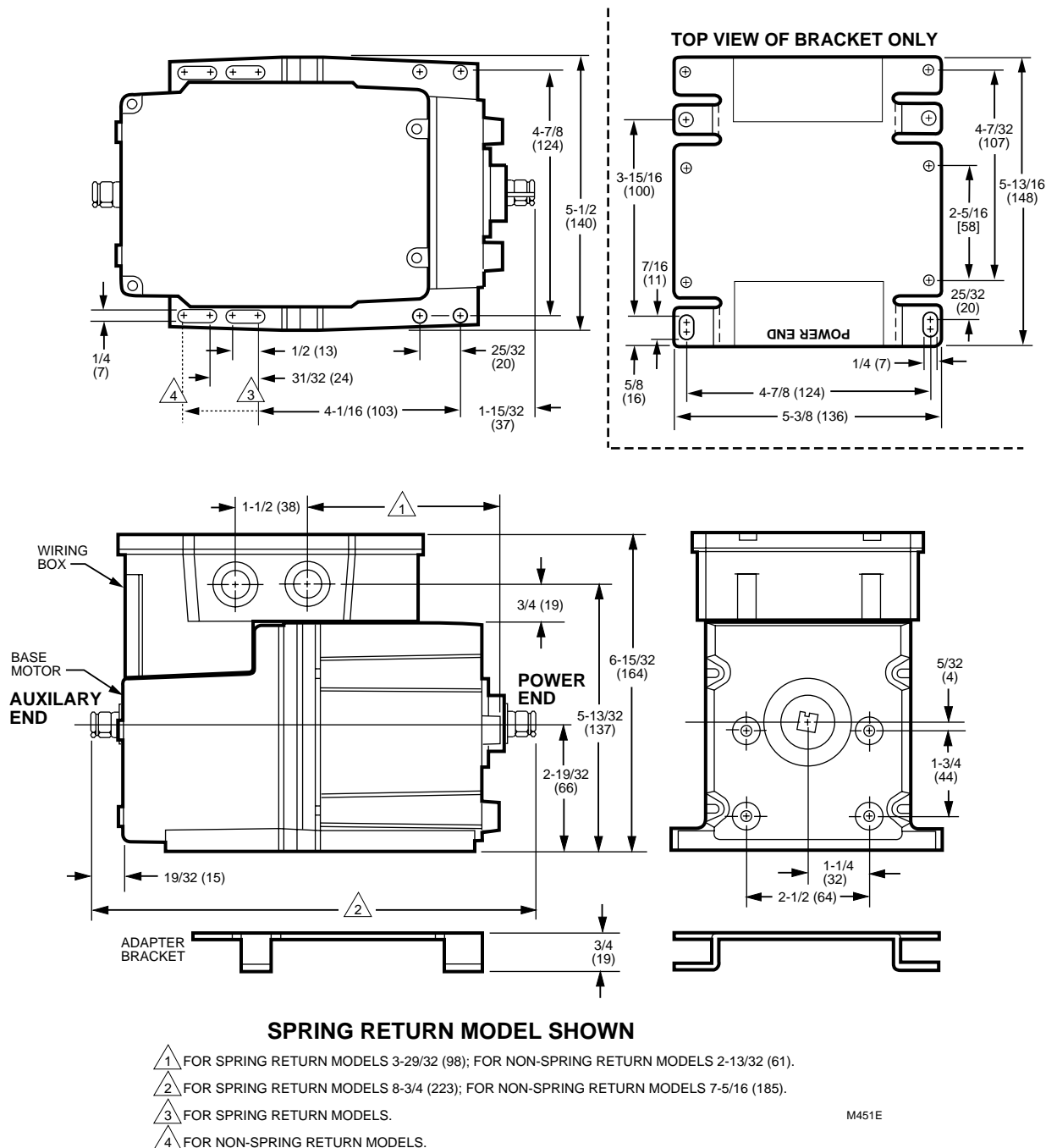


Fig. 1. M7284, M7285, M7294 dimensions in in. (mm). Note: M7281, M7282 models do not have auxiliary shaft. All other dimensions are the same.

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