

Modutrol IV Motors

M7284; M7285; M7286; M7294 Modutrol IV™ Series 2 Motors



Series 72 Modutrol IV Motors are spring return and non-spring return motors (per motor type) used to control dampers and valves. The motors accept a current or voltage signal from an electronic controller to position a damper or valve at any point between open and closed.

- Integral spring return returns motor to normal position in the event of power failure on spring return models
- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard—screw terminal adapter is available
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Integral auxiliary switches are available factory mounted, or can be field added
- Spring return motors can operate valve linkages from power end or auxiliary end shafts for normally closed or normally open valve applications
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range
- Motors are designed for either normally open or normally closed valves and dampers
- Models available with adjustable start (zero) and span
- Models available with 4 to 20 mA input signal
- Models available with 2 to 10 Vdc input signal
- Die-cast aluminum housing

Application Type: Electric

Dimensions, Approximate: 6 7/16 in. high x 5 1/2 in. wide x 7 5/16 in. deep (164 mm high x 140 mm wide x 185 mm deep)

Feedback: No

Frequency: 50 Hz; 60 Hz

External Auxiliary Switches Available: Yes

Auxiliary Switch Ratings AFL - 120 Vac: 7.2A

Auxiliary Switch Ratings ALR - 120 Vac: 43.2A

Auxiliary Switch Ratings AFL - 240 Vac: 3.6A

Auxiliary Switch Ratings ALR - 240 Vac: 21.6A

Internal Transformer: 50004263-002

Mounting: Foot-mounted

Motor Shafts: Dual-ended shaft

Shaft Shape: square

Shaft Dimensions: 0.375 in. (10 mm)

Shaft Rotation (upon control signal increase):

M7284A,C,Q; M7285A,C,Q; M7294A,Q: Clockwise (as viewed from power end) (normally closed)

M7286G: Counter-clockwise (as viewed from power end) (normally open)

Deadweight Load on Shaft (Either End): 200 lbs.

Deadweight Load (Combined on both Shafts): 300 lbs.

Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)

Weight: 7.5 lb

Approvals

CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Underwriters Laboratories, Inc: Listed: File No. E4436, Guide No.

XAPX for USA and Canada

Accessories:

4074ERU-Weatherproofing kit. Protects motor from driving rain when mounted in any position

220736A-Internal Auxiliary Switch Assembly - 1 Switch

220736B-Internal Auxiliary Switch Assembly - 2 Switches

220738A-Adapter Bracket. Adjusts shaft height to match Modutrol III motors

220741A2-72-Screw Terminal Adapter Kit for Series 72 Modutrol IV

Series 2 motors - Converts quick-connect terminals to screw terminals

221455A-Infinitely adjustable Motor Crank Arm

50017460-001-24/120/230 Vac Internal Transformers for Series 2 and 3 Motors

50017460-003-120 Vac Internal Transformers for Series 2 and 3 Motors

Product Number	Fail Safe Mode	Torque/Force		Voltage	Nominal Timing (sec)	Electrical Connections	Control Signal	Internal Auxiliary Switch	Factory Stroke Setting	Stroke	Includes	Comments	Internal Transformer
		lb-in., lb	Nm, N										
M7284A1004/U	Non-Spring Return	150 lb-in.	17 Nm	120V	30-60 sec	Screw terminals	Modulating, 4-20 mA	0	90 degrees	Adjustable; 90 to 160 degrees, Symmetrical	Transformer and Screw Terminal Adapter	—	50004263-002
M7284A1012/U	Non-Spring Return	150 lb-in.	17 Nm	120V	30-60 sec	Screw terminals	Modulating, 4-20 mA	0	160 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	Transformer and Screw Terminal Adapter	—	50004263-002
M7284A1038/U	Non-Spring Return	75 lb-in.	8.5 Nm	120V	15-30 sec	Screw terminals	Modulating, 4-20 mA	0	90 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	Transformer and Screw Terminal Adapter	—	50004263-002
M7284A1079/U	Non-Spring Return	150 lb-in.	17 Nm	24V	30-60 sec	Quick-connect terminals	Modulating, 2-10 Vdc	0	160 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	—	—	None
M7284C1000/U	Non-Spring Return	150 lb-in.	17 Nm	120V	30-60 sec	Screw terminals	Modulating, 4-20 mA	2	90 degrees	Adjustable; 90 to 160 degrees, Symmetrical	Transformer and Screw Terminal Adapter	—	50004263-002
M7284C1083/U	Non-Spring Return	150 lb-in.	17 Nm	24/120/230V	30 sec	Screw terminals	Modulating, 4-20 mA	2	90 degrees	Fixed; 90 degrees, Symmetrical	Transformer	Enhanced models, additional repositions	50004263-001

Modutrol IV Motors

Product Number	Fail Safe Mode	Torque/Force		Voltage	Nominal Timing (sec)	Electrical Connections	Control Signal	Internal Auxiliary Switch	Factory Stroke Setting	Stroke	Includes	Comments	Internal Transformer
		lb-in., lb	Nm, N										
M7284C1091/U	Non-Spring Return	150 lb-in.	17 Nm	24/120/230V	60 sec	Screw terminals	Modulating, 4-20 mA	2	160 degrees	Fixed; 160 degrees, Asymmetrical	Transformer	Enhanced models, additional repositions	50004263-001
M7284Q1009/U	Non-Spring Return	150 lb-in.	17 Nm	120V	30-60 sec	Screw terminals	Modulating, 4-20 mA	2	90 degrees	Adjustable; 90 to 160 degrees, Symmetrical	Transformer and Screw Terminal Adapter	Adjustable zero and span for split range applications	50004263-002
M7284Q1082/U	Non-Spring Return	150 lb-in.	17 Nm	24/120/230V	30 sec	Screw terminals	Modulating, 4-20 mA	2	90 degrees	Fixed; 90 degrees, Symmetrical	Transformer	Enhanced models, additional repositions (160°) Adjustable zero and span for split range applications	50004263-006
M7284Q1090/U	Non-Spring Return	150 lb-in.	17 Nm	24/120/230V	60 sec	Screw terminals	Modulating, 4-20 mA	2	160 degrees	Fixed; 160 degrees, Asymmetrical	Transformer	Enhanced models, additional repositions (160°) Adjustable zero and span for split range applications	50004263-006
M7284Q1098/U	Non-Spring Return	150 lb-in.	17 Nm	24V	30-53	Screw terminals	2 to 10 Vdc	2	160 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	—	Enhanced models, additional repositions; Adjustable zero and span for split range applications	None
M7284Q1106/U	Non-Spring Return	150 lb-in.	17 Nm	24V	30-60 sec	Screw terminals	Modulating, 4-20 mA	2	90 degrees	Adjustable; 90 to 160 degrees, Symmetrical	—	Adjustable zero and span for split range applications	None
M7285A1003/U	Spring Return	60 lb-in.	6.8 Nm	120V	30-60 sec	Screw terminals	Modulating, 4-20 mA	0	90 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	Transformer and Screw Terminal Adapter	—	50004263-002
M7285A1045/U	Spring Return	60 lb-in.	6.8 Nm	24V	30-60 sec	Quick-connect terminals	Modulating, 2-10 Vdc	0	160 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	—	—	None
M7285C1009/U	Spring Return	60 lb-in.	6.8 Nm	120V	30-60 sec	Screw terminals	Modulating, 4-20 mA	2	90 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	Transformer and Screw Terminal Adapter	—	50004263-002
M7285Q1008/U	Spring Return	60 lb-in.	6.8 Nm	120V	30-60 sec	Screw terminals	Modulating, 4-20 mA	2	90 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	Transformer and Screw Terminal Adapter	Adjustable zero and span for split range applications	50004263-002
M7285Q1024/U	Spring Return	60 lb-in.	6.8 Nm	24 V	30/53	Screw terminals	Modulating, 4-20 mA	2	90 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	Screw Terminal Adapter	Adjustable zero and span for split range applications	None
M7285Q1032/U	Spring Return	60 lb-in.	6.8 Nm	24 V	30/53	Screw terminals	Modulating, 2-10 Vdc	2	160 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	Screw Terminal Adapter	Adjustable zero and span for split range applications	None
M7286G1009/U	Spring Return	60 lb-in.	6.8 Nm	24V	30-60 sec	Quick-connect terminals	Modulating, 2-10 Vdc	0	160 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	—	—	None

Commercial Components

Modutrol IV Motors

Product Number	Fail Safe Mode	Torque/Force		Voltage	Nominal Timing (sec)	Electrical Connections	Control Signal	Internal Auxiliary Switch	Factory Stroke Setting	Stroke	Includes	Comments	Internal Transformer
		lb-in., lb	Nm, N										
M7294A1010/U	Non-Spring Return	300 lb-in.	34 Nm	24V	60-120 sec	Quick-connect terminals	Modulating, 2-10 Vdc	0	160 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	—	—	None
M7294Q1007/U	Non-Spring Return	300 lb-in.	34 Nm	120V	60-120 sec	Screw terminals	Modulating, 4-20 mA	2	90 degrees	Adjustable; 90 to 160 degrees, Symmetrical	Transformer and Screw Terminal Adapter	Adjustable zero and span for split range applications	50004263-002
M7294Q1015/U	Non-Spring Return	300 lb-in.	34 Nm	24V	60/107	Screw terminals	Modulating, 4-20 mA	2	90 degrees	Adjustable; 90 to 160 degrees, Symmetrical	Screw Terminal Adapter	Adjustable zero and span for split range applications	None

M7685 Modutrol IV™ Series 2 Motor



Application Type: Electric

Dimensions, Approximate: 6 7/16 in. high x 5 1/2 in. wide x 8 3/4 in. deep (164 mm high x 140 mm wide x 222 mm deep)

Fail Safe Mode: Spring Return

Control Signal: Modulating, 14-17 Vdc

Feedback: No

Frequency: 50 Hz; 60 Hz

External Auxiliary Switches Available: Yes

Auxiliary Switch Ratings AFL - 120 Vac: 7.2A

Auxiliary Switch Ratings ALR - 120 Vac: 43.2A

Auxiliary Switch Ratings AFL - 240 Vac: 3.6A

Auxiliary Switch Ratings ALR - 240 Vac: 21.6A

Electrical Connections: Quick-connect terminals

Mounting: Foot-mounted

Motor Shafts: Dual-ended shaft

Shaft Shape: square

Shaft Dimensions: 0.375 in. (10 mm)

Shaft Rotation (upon control signal increase): Clockwise (as viewed from power end) (normally closed)

Proportional, spring-return motors for use with Honeywell W7080 panel 14-17 Vdc output; with minimum position adjustment.

- Integral spring return returns motor to normal position in the event of power failure
- Integral junction box provides NEMA 3 weather protection
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 deg. to 160 deg.)
- Integral auxiliary switches are available factory mounted, or can be field added
- Spring return motors can operate valve linkages from power end or auxiliary end shafts for normally closed or normally open valve applications
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range

Deadweight Load on Shaft (Either End): 200 lbs.

Deadweight Load (Combined on both Shafts): 300 lbs.

Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)

Weight: 8.5 lb

Approvals

Underwriters Laboratories, Inc: Listed: File No. E4436, Guide No. XAPX for USA and Canada

Accessories:

4074ERU-Weatherproofing kit. Protects motor from driving rain when mounted in any position

220736A-Internal Auxiliary Switch Assembly - 1 Switch

220736B-Internal Auxiliary Switch Assembly - 2 Switches

220738A-Adapter Bracket. Adjusts shaft height to match Modutrol III motors

221455A-Infinitely adjustable Motor Crank Arm

50017460-001-24/120/230 Vac Internal Transformers for Series 2 and 3 Motors

50017460-003-120 Vac Internal Transformers for Series 2 and 3 Motors

Product Number	Torque/Force		Voltage	Nominal Timing (sec)	Internal Auxiliary Switch	Factory Stroke Setting	Stroke	Includes	Internal Transformer
	lb-in., lb	Nm, N							
M7685A1025/U	60 lb-in.	6.8 Nm	24V	30-60 sec	0	90 degrees	Adjustable; 90 to 160 degrees, Asymmetrical	Minimum Position Potentiometer	None