

## M9164; M9174; M9184; M9191; M9194 Modutrol IV™ Motors



Series 90 Modutrol™ IV Motors are non-spring return modulating proportional control motors used with controllers that provide a Series 90 output to operate dampers or valves.

- 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
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range

**Application:** Electric

**Control Signal:** Proportional, 135 ohm

**Frequency:** 50 Hz; 60 Hz

**Fail Safe Mode:** Non-Spring Return

**Auxiliary Switch Ratings:** AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

**External Auxiliary Switches Available:** Yes

**Mounting:** Foot-mounted

**Feedback:** No

**Shaft Dimensions:** 0.375 in. Square (10 mm Square)

**Motor shafts:** 2; Dual-ended shaft

**Deadweight Load on Shaft:** Either End – 200 lbs.; Combined on both Shafts – 300 lbs.

**Approximate, Dimensions:** 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)

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

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

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

**Approvals, RoHS:** 2011/65/ES

### Accessories:

**220736A/U** – Internal Auxiliary Switch Assembly - 1 Switch

**220736B/U** – Internal Auxiliary Switch Assembly - 2 Switches

**220738A/U** – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

**220741A2-90/U** – Screw Terminal Adapter Kit for Series 90 Modutrol IV Series 2 and Series 3 motors - Converts quick-connect terminals to screw terminals

**221455A/U** – Infinitely adjustable Motor Crank Arm

**4074ERU/U** – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

**50017460-001/U** – 24/120/230 Vac Internal Transformers for Series 2 Motors

**50017460-003/U** – 120 Vac Internal Transformers for Series 2 Motors

**Q7130A1006/U** – Interface Module (4-7, 6-9 or 10.5-13.5 Vdc Control)

**Q7230A1005/U** – Interface Module (4-20 mA or 2-10 Vdc Control)

**Q7330A1004/U** – Interface Module (W936 or W945 Control)

Material Number	Torque Rating (lb-in.)	Torque Rating (Nm)	Power Consumption	Timing, Nominal	Internal Auxiliary Switch	Factory Stroke Setting	Shaft Rotation (upon control signal increase)	Electrical Connections	Internal Transformer	Weight	Includes	Supply Voltage	Tradeline Value	Stroke
M9164A1005/U	35 lb-in.	4 Nm	Driving – 10 VA	30 - 60 sec	0	90 degrees	Clockwise (as viewed from power end) (normally closed)	Quick-connect terminals	50004263-003	7.5 lb	Transformer	120V		Adjustable; 90 to 160 degrees, Asymmetrical
M9164A1013/U	35 lb-in.	4 Nm	Driving – 10 VA	30 - 60 sec	0	160 degrees	Clockwise (as viewed from power end) (normally closed)	Quick-connect terminals	50004263-001	7.5 lb	Transformer	24V; 120V; 230V		Adjustable; 90 to 160 degrees, Asymmetrical
M9164A1070/U	35 lb-in.	4 Nm	Driving – 10 VA	30 - 60 sec	0	160 degrees	Clockwise (as viewed from power end) (normally closed)	Quick-connect terminals	None	6.5 lb		24V		Adjustable; 90 to 160 degrees, Asymmetrical
M9164C1001/U	35 lb-in.	4 Nm	Driving – 10 VA	30 - 60 sec	2	160 degrees	Clockwise (as viewed from power end) (normally closed)	Quick-connect terminals	None	6.5 lb		24V		Adjustable; 90 to 160 degrees, Asymmetrical
M9164C1068/U	35 lb-in.	4 Nm	Driving – 10 VA	30 - 60 sec	2	90 degrees	Clockwise (as viewed from power end) (normally closed)	Quick-connect terminals	50004263-003	7.5 lb	Transformer	120V		Adjustable; 90 to 160 degrees, Asymmetrical
M9164D1009/U	35 lb-in.	4 Nm	Driving – 10 VA	30 - 60 sec	0	160 degrees	Counter-clockwise (as viewed from power end) (normally open)	Quick-connect terminals	None	6.5 lb		24V	Tradeline	Adjustable; 90 to 160 degrees, Asymmetrical
M9174B1027/U	75 lb-in.	8.5 Nm	Driving – 12 VA	30 - 60 sec	1	90 degrees	Clockwise (as viewed from power end) (normally closed)	Quick-connect terminals	50004263-003	7.5 lb	Transformer	120V		Adjustable; 90 to 160 degrees, Asymmetrical

## M9175; M9182; M9185 Modutrol IV™ Motors



**Series 90 Modutrol IV™ Motors are spring return modulating proportional control motors used with controllers that provide a Series 90 output to operate dampers or valves.**

- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position
- Integral spring return in the event of power failure
- 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 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

**Application:** Electric

**Control Signal:** Proportional, 135 ohm

**Frequency:** 50 Hz; 60 Hz

**Fail Safe Mode:** Spring Return

**Auxiliary Switch Ratings:** AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

**External Auxiliary Switches Available:** Yes

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

**Mounting:** Foot-mounted

**Feedback:** No

**Shaft Dimensions:** 0.375 in. Square (10 mm Square)

**Motor shafts:** 2; Dual-ended shaft

**Deadweight Load on Shaft:** Either End – 200 lbs.; Combined on both Shafts – 300 lbs.

**Internal Transformer:** None

**Weight:** 8.5 lb

**Approximate, Dimensions:** 6 7/16 in. high x 5 1/2 in. wide x 8 1/4 in. deep (164 mm high x 140 mm wide x 210 mm deep)

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

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

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

**Approvals, RoHS:** 2011/65/ES

**Supply Voltage:** 24V

**Accessories:**

**220736A/U** – Internal Auxiliary Switch Assembly - 1 Switch

**220736B/U** – Internal Auxiliary Switch Assembly - 2 Switches

**220738A/U** – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

**220741A2-90/U** – Screw Terminal Adapter Kit for Series 90 Modutrol IV Series 2 and Series 3 motors - Converts quick-connect terminals to screw terminals

**221455A/U** – Infinitely adjustable Motor Crank Arm

**4074ERU/U** – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

**50017460-001/U** – 24/120/230 Vac Internal Transformers for Series 2 Motors

**50017460-003/U** – 120 Vac Internal Transformers for Series 2 Motors

**Q7230A1005/U** – Interface module, provides adjustable zero and span, voltage or current control

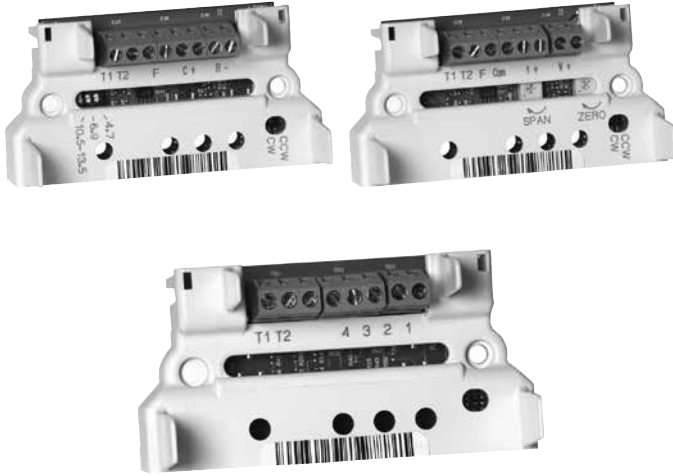
**Q7130A1006/U** – Interface Module (4-7, 6-9 or 10.5-13.5 Vdc Control)

**Q7230A1005/U** – Interface Module (4-20 mA or 2-10 Vdc Control)

**Q7330A1004/U** – Interface Module (W936 or W945 Control)

Material Number	Torque Rating (lb-in.)	Torque Rating (Nm)	Power Consumption	Timing, Nominal	Internal Auxiliary Switch	Factory Stroke Setting	Electrical Connections	Stroke	Spring Return Timing	Includes	Tradeline Value
M9182A1011/U	60 lb-in.	6.8 Nm	Driving – 20 VA	30 - 60 sec	0	160 degrees	Quick-connect terminals	Adjustable; 90 to 160 degrees, Asymmetrical			
M9182D1023/U	60 lb-in.	6.8 Nm	Driving – 20 VA	60 - 120 - 240 sec	0	160 degrees	Quick-connect terminals	Adjustable; 90 to 160 degrees, Asymmetrical	Nominal – 60 sec		
M9185A1018/U	60 lb-in.	6.8 Nm	Driving – 20 VA	30 - 60 sec	0	160 degrees	Quick-connect terminals	Adjustable; 90 to 160 degrees, Asymmetrical			
M9185C1006/U	60 lb-in.	6.8 Nm	Driving – 20 VA	30 - 60 sec	2	160 degrees	Quick-connect terminals	Adjustable; 90 to 160 degrees, Asymmetrical			
M9185D1004/U	60 lb-in.	6.8 Nm	Driving – 20 VA	30 - 60 sec	0	160 degrees	Quick-connect terminals	Adjustable; 90 to 160 degrees, Asymmetrical			Tradeline
M9185D4008/U	60 lb-in.	6.8 Nm	Driving – 20 VA	30 - 60 sec	0	160 degrees	Quick-connect terminals	Adjustable; 90 to 160 degrees, Asymmetrical			Tradeline
M9185E1019/U	60 lb-in.	6.8 Nm	Driving – 20 VA	30 - 60 sec	1	90 degrees	Quick-connect terminals	Adjustable; 90 to 160 degrees, Asymmetrical			

## Q7130; Q7230; and Q7330 Interface Modules for Series 90 Modutrol IV Motors



**For converting Series 90 Modutrol IV motors to Series 70 (electronic) control.**

- Mounts and works inside wiring box of any series 90 Modutrol IV Motor
- Protected from weather by motor's NEMA 3 wiring box
- Mates to motor's quick-connect terminals and provides screw terminals for control wiring connections
- Features solid-state circuitry with surface mount components
- Cover holds module in place, screws not required
- Includes (except Q7330A) reversing switch to allow replacement of electrically normally open or electrically normally closed motors

**Application:** Electric

**Frequency:** 50 Hz; 60 Hz

**Mounting:** Mounts to quick-connects inside Mod Motor

**Power Consumption:** Driving – 2 VA

**Approximate, Dimensions:** Fits inside wiring junction box of Modutrol IV Motor

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

Material Number	Electrical Connections	Control Signal	Weight	Used With
Q7130A1006/U	Terminal Board	Provides selectable voltage ranges: 4 to 7, 6 to 9, or 10.5 to 13.5 Vdc. Adapts M91XX to function as M71XX model.	0.3 lb	Used with M91XX Modutrol IV Motor to replace M71XX Motor applications. Module controls only one motor.
Q7230A1005/U	Terminal Board	Provides adjustable zero & span, voltage or current control (includes 2-10 Vdc or 4-20 mA). Adapts M91XX to function as M72XX model.	0.3 lb	Used with M91XX Modutrol IV Motor to replace M72XX Motor applications. Module controls only one motor.
Q7330A1004/U	Terminal Board	Provides interface to W936 Control. Adapts M91XX to function as M73XX model.	0.3 lb	Used with M91XX Modutrol IV Motor to replace M73XX Motor applications. Module controls only one motor.