

M9172, M9175 Modutrol IV™ Motors

SPECIFICATION DATA



APPLICATION

M9172, M9175 Modutrol IV™ Motors are reversing proportional, spring return motors used to actuate dampers in Series 90 control circuits.

FEATURES

- Replace M965 and M975 Motors.
- Integral spring returns motor to closed position when power is interrupted.
- 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.
- Integral auxiliary switches are available factory mounted, or can be field added to the TRADELINE® model.
- Field addable interface modules can be mounted in wiring box to upgrade actuator to Series 70 (electronic) control.
- Die-cast aluminum housing.



SPECIFICATIONS

TRADELINE® Models

TRADELINE models are selected and packaged to provide ease of stocking, ease of handling, and maximum replacement value. TRADELINE model specifications are the same as those of standard models, unless otherwise specified. The TRADELINE model is M9175D1014, which has auxiliary switch cams.

Standard Models

M9172A,C,W M9175A,D,V,W,Y	
Control Type 91 is Series 90	Suffix Letter
Power Rating 7 is medium torque— 25 lb-in.	A: Fixed stroke (160° or 90°), No auxiliary switches
Output Drive 5 is spring return, normally closed, dual-ended shaft 2 is spring return, normally closed, single-ended shaft	B: Fixed stroke (160° or 90°), 1 auxiliary switch
	C: Fixed stroke (90° or 160°), 2 auxiliary switches
	D: Adjustable stroke (90° to 160°), No auxiliary switches
	V: Fixed stroke (90° or 160°), No auxiliary switches, Minimum position potentiometer
	W: Fixed stroke (90° or 160°), 1 auxiliary switch, Minimum position potentiometer
	Y: Fixed stroke (90° or 160°), 2 auxiliary switches, Minimum position potentiometer

Electrical Ratings:

M9172, M9175	Voltage (V @ 50/60 Hz)	Current Draw (A)	Power Consumption (W)
Without Transformer ^a	24	0.91	21
With Internal Transformer	120	0.26	26
	208	0.15	26
	240	0.13	26

^aInternal transformer can be field added.

Controller Type:

Series 90 Control Circuit: 135 ohm, Series 90 proportioning controller. Series 90 high or low limit controller with manual minimum position potentiometer (with a combined total resistance of up to 500 ohms) can also be used in the control circuit.

Motor Rotation:

M9172, M9175 Motors rotate counterclockwise to a closed position on power interruption.

Stroke:

Fixed stroke models available with 90° or 160° stroke. Adjustable stroke models can be set between 90° and 160°.

Timing:

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

Torque:

25 lb-in. (2.8 N-m).

Maximum Damper Rating:

B dim = 34 in. (864 mm).

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: Minus 40° F (-40° C).

Crankshaft: 3/8 in (9.5 mm) square.

M9175 Motors have dual-ended shaft.
M9172 Motors have single-ended shaft.

Auxiliary Switch Ratings (Amperes):

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

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

Dimensions:

See Fig. 1.

Underwriters Laboratories Inc. Listed:

File No. E4436, Guide No. XAPX.

Canadian Standards Association Certified:

General Listing File No. LR1620, Guide 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 7617DM Coupling.

Q607 External Auxiliary Switch: Controls auxiliary equipment as a function of motor position.

Internal Auxiliary Switch Kits: Can be field-installed on TRADELINE models.

220736A: One-switch Kit.

220736B: Two-switch Kit.

Q605 Damper Linkage: Connects motor to damper. Includes motor crank arm.

Q100A,B Linkage: Connects Modutrol® motor to butterfly valve. Requires adapter bracket packed with motor.

Q209E,F Potentiometer: Limits minimum position of motor.

Q68 Dual Control Potentiometer: Controls 1 to 9 additional motors.

Q181 Auxiliary Potentiometer: Controls 1 or 2 additional motors.

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 the 7616BR Crank Arm. Can rotate through the downward position and clear base of motor without requiring use of adapter bracket.

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.

198162GA: 220 Vac; 50/60 Hz.

198162AA: 120/208/240 Vac; 50/60 Hz.

Q7130A: Interface Module with selectable voltage ranges (4-7 Vdc, 6-9 Vdc, and 10.5-13.5 Vdc). Adapts motor to M71XX function.

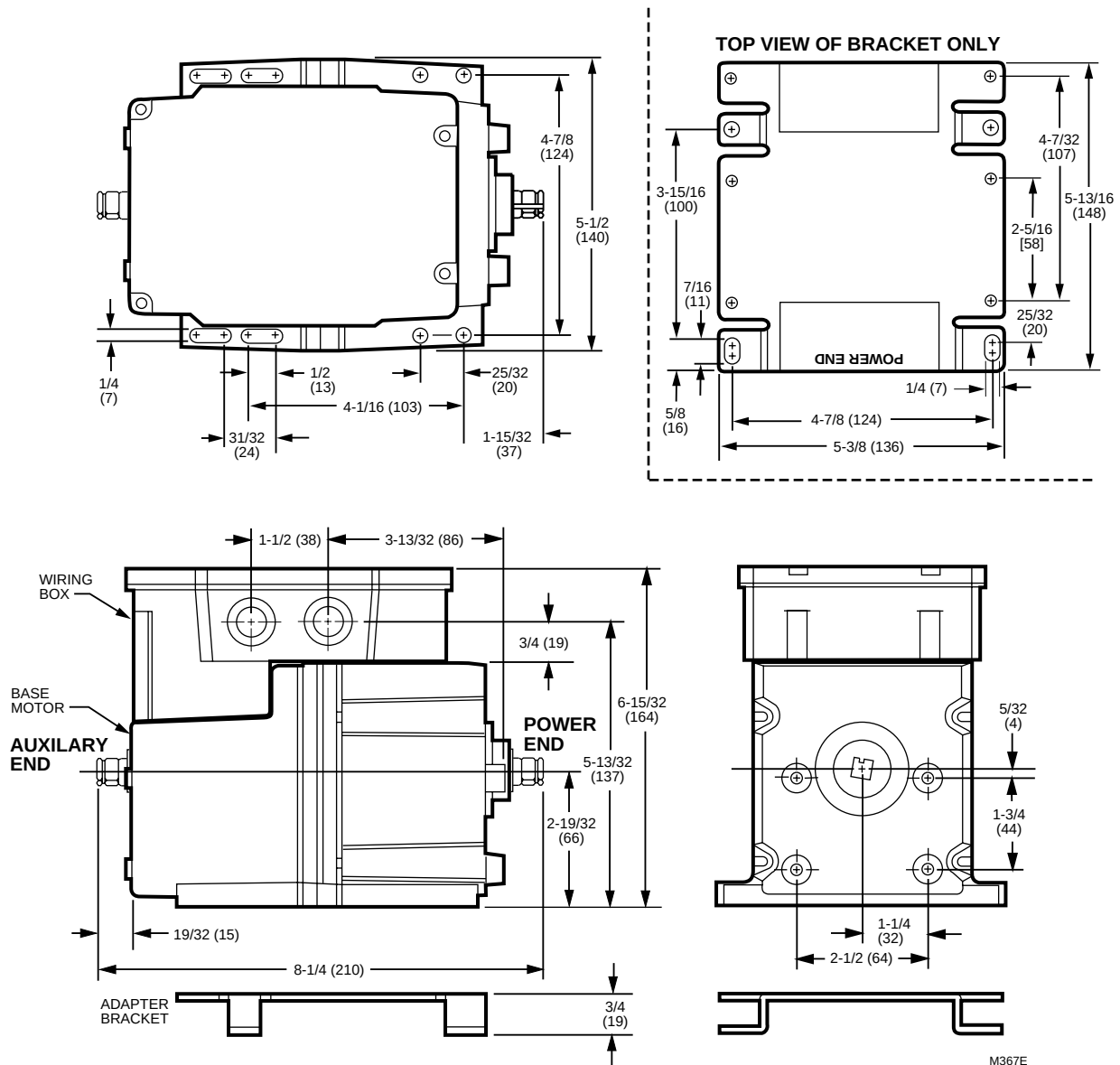


Fig. 1. M9175 dimensions in in. (mm). Note: M9172 does not have auxiliary shaft. All other dimensions are the same.

Q7230A: Interface Module, selectable voltage or current control, with adjustable null and span. Adapts motor to M72XX function; 4-20 mA or 2-10 Vdc.

Q7330A: Interface Module, for W936 economizer applications. Adapts motor to M73XX function.

Q7630A: Interface Module, 14-17 Vdc control with minimum position capability. Adapts motor to M76XX function.

4074BYK: Control up to 6 M91XX motors in unison from one Series 90 Controller.

4074EAU: Drive 2 or 3 M91XX motors from a W973 Single-zone Logic Panel or W7100 Discharge Air Controller.

4074EDC: Drive one M91XX motor from a 4-20 mA controller.

4074EED: Drive up to 4 M91XX motors from a 4-20 mA controller.

221508A Resistor Board: Plugs onto quick-connects in wiring box of M91XX motor. Can be used in place of 4074BYK, EAU, EDC, or EED resistor kits (functions described above).