MEP-46xxQ Series

Quick-Running (3-Second) Actuators (54 in-lb.)

DESCRIPTION AND APPLICATION

These compact but powerful direct-coupled ControlSet® actuators provide **90° rotation within three seconds**. A minimum torque of 54 in-lb. is available over the 95° angular rotation. These actuators are designed for dampers or valves in critical HVAC, laboratory fume hood, and life-safety applications.

Efficient, durable, **capacitor-driven fail-safe** operation (in MEP-4652Q/4672Q) with **switch-selectable direction** provides consistent torque in both powered and fail-safe modes.

The actuators offer proportional or two-position control. **Two-position** control mode is designed for use with on/off switches, thermostats, or controller outputs.

Proportional control mode accepts either a 0–10 or 2–10 VDC control signal input from a thermostat or controller. With an external 500 ohm resistor, a 0–20 or 4–20 mA control signal is also accepted. A switch-selectable, 0–5 or 0–10 (or 1–5 or 2–10) VDC voltage **feedback** output is proportional to the actuator position and is standard on all models. **"Anti-jitter"** circuitry significantly reduces hunting and needless wear (from unnecessary miniscule position changes caused by undamped analog input signals) on the actuator, valve, or damper components. A user-initiated, **auto-mapping** feature provides more precise equipment control by reassigning the input signal range over a reduced rotation range. The feature also provides "soft stall" protection (from stalling hard against a physical stop) that extends actuator life.

MEP-4622Q and MEP-4672Q models also have two built-in SPDT **auxiliary switches** for remote position indication or an auxiliary equipment interface. One switch is fully adjustable (0 to 90°) and the other is fixed at 10° from full CW direction. A three-foot cable is included with the switches.

All actuators mount directly to 1/4- to 5/8-inch (6 to 16 mm) round shafts or 1/4- to 7/16-inch (6 to 11 mm) square shafts, eliminating the need for expensive and complicated linkages. A non-rotation bracket, to prevent lateral movement, is included with each actuator. A gear disengagement button allows easy manual positioning of the actuator.

FEATURES

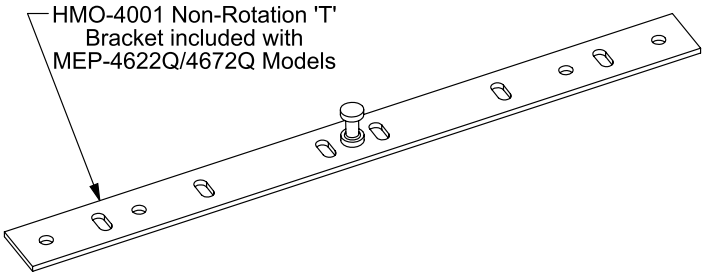
- Brushless DC motor technology
- Each model provides proportional or two-position control
- 90° rotation within three seconds (powered or optional fail-safe)
- 54 in-lb. is available over the 95° angular rotation
- Optional fail-safe (in MEP-4652Q and MEP-4672Q models)
- The fail-safe option has switch-selectable direction and can be turned off temporarily for testing purposes or permanently if desired
- Proportional mode includes "anti-jitter" circuitry
- Auto-mapping of the full input-signal range over a reduced actuator stroke provides a "soft stall" protection feature that extends actuator life
- Switch-selectable 0/1–5 or 0/2–10 VDC feedback is standard on all models
- MEP-4622Q and MEP-4672Q models have one fully adjustable and one fixed built-in SPDT auxiliary switches
- Direct mounting to standard shaft sizes, gear disengagement button, and adjustable mechanical end stop

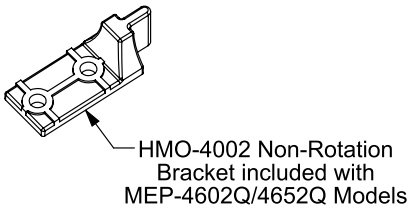
MODELS

MODEL NUMBER	FAIL SAFE	AUXILIARY SPDT SWITCHES*	ELECTRICAL CONNECTIONS**	NON-ROTATION BRACKET
MEP-4602Q	No	No	Terminals	HMO-4002
MEP-4622Q	No	Yes	Cables	HMO-4001
MEP-4652Q	Yes	No	Terminals	HMO-4002
MEP-4672Q	Yes	Yes	Cables	HMO-4001

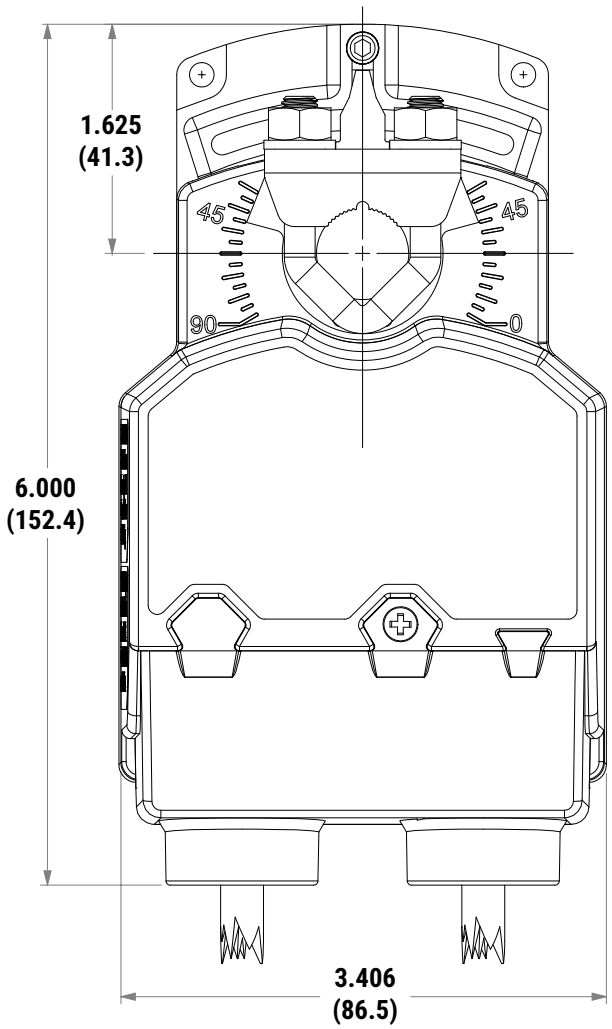
*One switch is fully adjustable (0 to 90°) and the other is fixed at 10° from full CW direction.

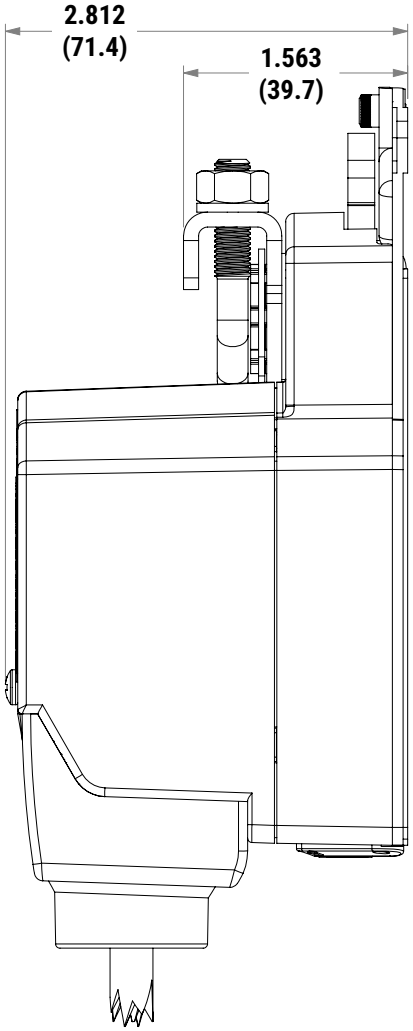
**Connections are made on either fixed terminals that accept 12–26 AWG wiring or (on models with auxiliary switches) prewired 3-foot, 18 AWG cables. Models with cables have the larger HMO-4001 "T" non-rotation bracket.





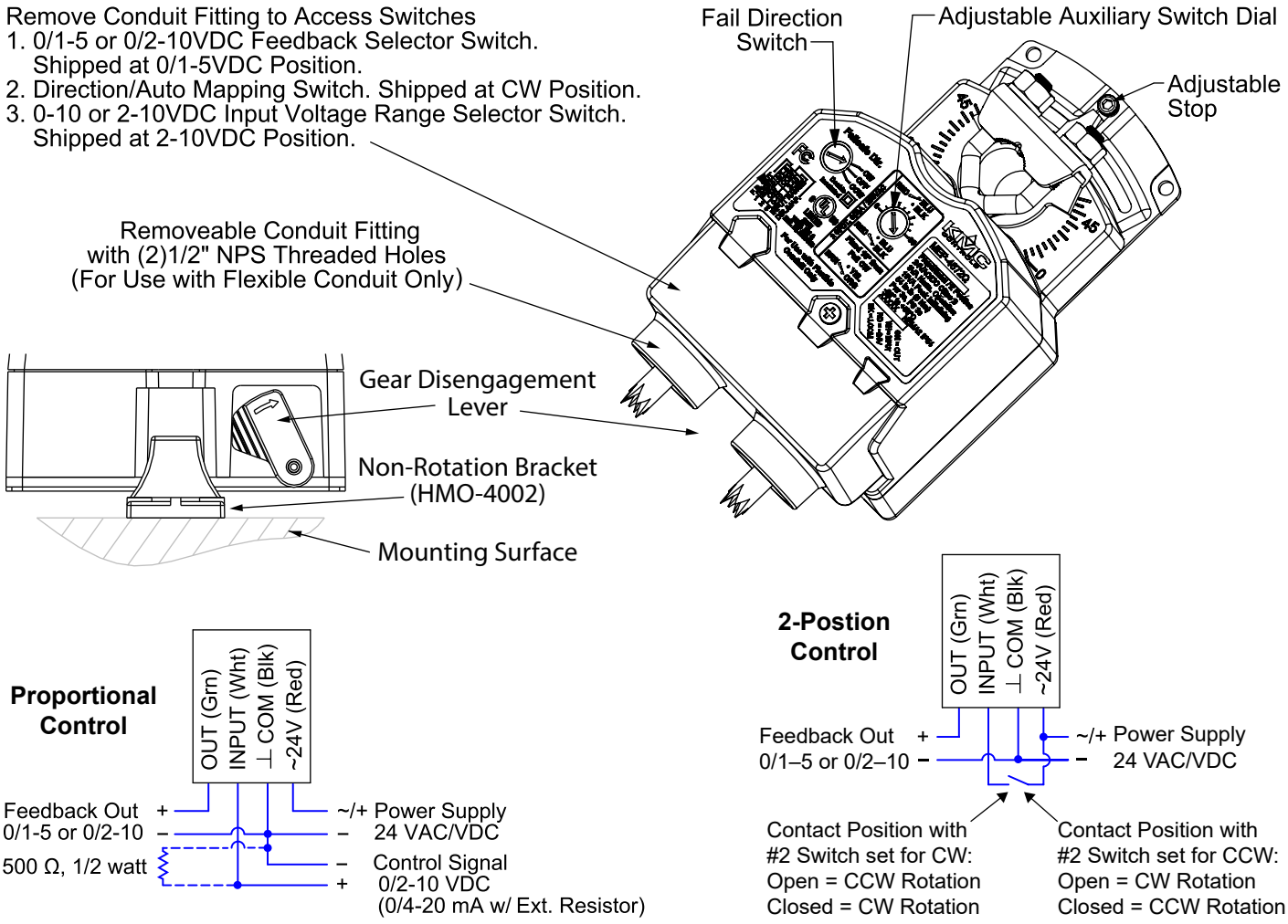
DIMENSIONS





Dimensions are in inches (mm)

SPECIFICATIONS



Hardware Features

Control Signal	
Proportional	0 to 10 VDC or 2 to 10 VDC, switch selectable
Two-position	See Supply Voltage
Supply Voltage	24 VAC (+20%/−15%), Class 2 only, or 22–35 VDC
Supply Frequency	50/60 Hz for VAC operation
Supply Power	3 VA normal operation (all), 19 VA peak initializing (fail-safe models)
Initialization Time	Up to 30 seconds before fail safe (MEP-4652Q/4672Q) is sufficiently charged, but the actuator will respond normally to control signal commands during the charge time
Bridge Time	Less than 1 second delay for fail-safe to activate upon loss of power
Feedback Output	0/1 to 5 VDC or 0/2 to 10 VDC (switch selectable, standard on all models)

Auxiliary Switches	
2 SPDT	1 adjustable 0 to 90° and 1 fixed at 10° from full CW direction (MEP-4622Q/4672Q only)
Rating	6 A resistive load (3 A motor load) @ 250 VAC
Fail-Safe Control	Switch selectable, CW/OFF/CCW
Fail-Safe Type	(Electronic) capacitor driven
Angular Rotation	0 to 95°, fully adjustable with mechanical stop
Position Indication	Visual indicator, 0° to 95°
Running Time	90° in 3 seconds (powered or optional fail-safe)
Torque	54 in-lbs. (6 N•m)
Noise Level	< 60 dBA max. at 1 meter

NOTE: When the **0**–10 VDC input is selected, selectable feedback options are **0**–5 or **0**–10 VDC. When the **2**–10 VDC input is selected, feedback options are **1**–5 or **2**–10 VDC.

Installation

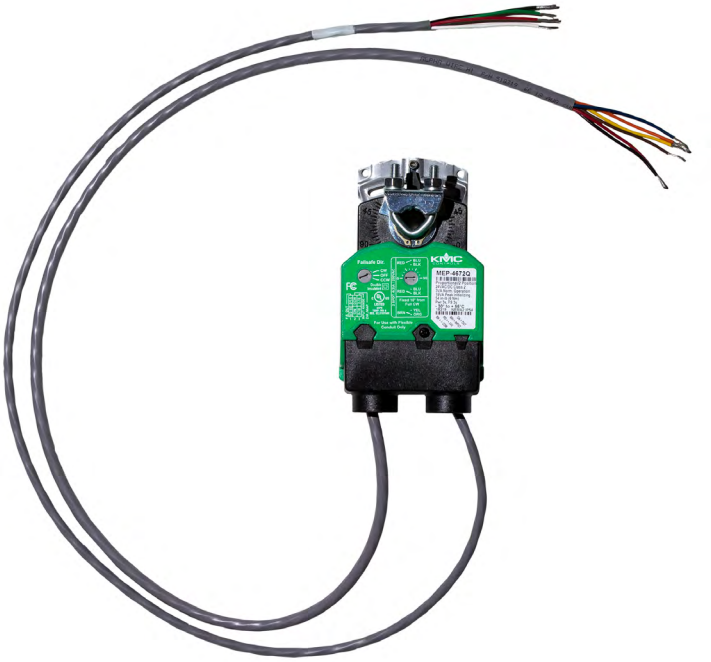
Connections	
Power/Signal	Prewired 3-foot, 18 AWG cable or fixed wire clamp terminal block, 12–26 AWG, copper (see **Models on page 2**)
Aux. Switches	3-foot 18 AWG cable
Mounting	Direct to 1/4 to 5/8 inches (6 to 16 mm) round or 1/4 to 7/16 inches (6 to 11 mm) square shaft by adjustable "V" bolt and supplied non-rotation bracket; minimum recommended damper shaft length is 1-5/8 inches
Brackets	**HMO-4001** or **HMO-4002** non-rotation bracket included*
Dimensions	6.000 x 2.812 x 3.406 inches (152.4 x 71.4 x 86.5 mm)—see **Dimensions on page 2**
Weight	1.5 lb. (0.68 kg)
Enclosure	UL94-5VA flame-retardant polymer, NEMA 2 and IP54—to guarantee IP54, install an **HMO-4521** liquid-tight cord grip
Servicing	Maintenance free
Environmental Limits	
Operating	–22 to 131° F (–30 to 55° C)
Shipping	–40 to 176° F (–40 to 80° C)
Humidity	5 to 95% RH (non-condensing)

***NOTE:** **The two holes at the top of the actuator are NOT for use in direct-coupled applications.** They are for **remote** mounting, such as with the optional **HLO-4001** crank arm kit.

Warranty, Quality, and Approvals

KMC Limited Warranty	5 years (from mfg. date code)
Quality Standard	ISO 9001
Approvals	
UL	UL 873 Temperature Indicating and Regulating Equipment
FCC	FCC Class A, Part 15, Subpart B and complies with Canadian ICES-003 Class A*

*This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



MORE INFORMATION

For **mounting, wiring, auxiliary switches, feedback/direction selectors, actuator/signal range reset (auto-mapping)**, and other information, see the **MEP-46xxQ Series Installation Guide**.

For **torque selection, accessories, troubleshooting,** and other information, see the **MEP-4xxx Applications Guide**.

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