

### Description and Application

These powerful, efficient, durable, direct-coupled actuators provide tri-state or proportional control for large control dampers or valves in HVAC systems. A minimum torque of 180 or 320 in.-lb. is available over the 94° angular rotation. **Capacitor-driven fail-safe** models provide efficient operation with switch-selectable fail direction.

The **proportional** actuator models accept a **0–10 VDC, 2–10 VDC, or 4–20 mA control signal** input from a thermostat, controller, or building automation system. “**Anti-jitter**” circuitry significantly reduces hunting and needless wear (from unnecessary miniscule position changes caused by undamped analog input signals) on the actuator and valve packing or damper components. A user-initiated, **auto-mapping** feature provides more precise equipment control by reassigning the (0–10 VDC, 2–10 VDC, or 4–20 mA) input signal range over a reduced rotation range.

Proportional input models also feature a switch-selectable, **voltage feedback** output that is proportional to the actuator position. With the 0–10 VDC input, feedback options are 0–5 or 0–10 VDC, and with 2–10 VDC or 4–20 mA inputs, feedback options are 1–5 or 2–10 VDC.

The **tri-state** models are designed for use with floating thermostats, controllers, or building automation systems. They feature an optional 10K ohm ( $\pm 10\%$ ),



three-wire potentiometer **feedback** output. Fail-safe tri-state models also allow two-position control as well.

All actuators mount directly on 3/8" up to 1.05" round or 5/16" up to 5/8" 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 manual positioning of the shaft without energizing the actuator. Removable terminals and 1/2" NPS conduit fittings make wiring easier. The actuators are protected against overloading and do not require end or limit switches.

**NOTE:** For more on torque selection, applications, and other information, see the [MEP-7xxx Applications Guide](#).

### Models

Model #	Torque		Control		Built-in Options			
	180 in.-lb. (20 N•m) min.	320 in.-lb. (36 N•m) min.	Tri-state (Floating)	0–10 VDC, 2–10 VDC, or 4–20 mA Proportional	Feedback: 10K ohm Potentiometer	Feedback: 0/1–5 or 0/2–10 VDC	Fail Safe	
MEP-7x01	7500 series (x=5)	7800 series (x=8)	✓					
MEP-7x02				✓			✓	
MEP-7x03			✓		✓			
MEP-7x51			✓					✓
MEP-7x52				✓		✓		✓
MEP-7x53			✓				✓	

The MEP-72xx series (120 in.-lb.) has been discontinued. Use the MEP-75xx series (180 in.-lb.)—or, if less torque is required, an MEP-48xx (80 in.-lb., non-fail-safe) or MEP-49xx (90 in.-lb., fail-safe) instead.

To replace the MEP-70xx series (150 in.-lb.), use MEP-75xx series (180 in.-lb.).

To replace the MEP-77xx series (300 in.-lb.), use MEP-78xx series (320 in.-lb.).

## Features

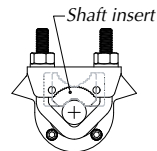
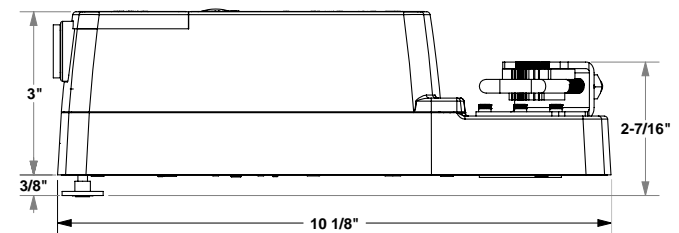
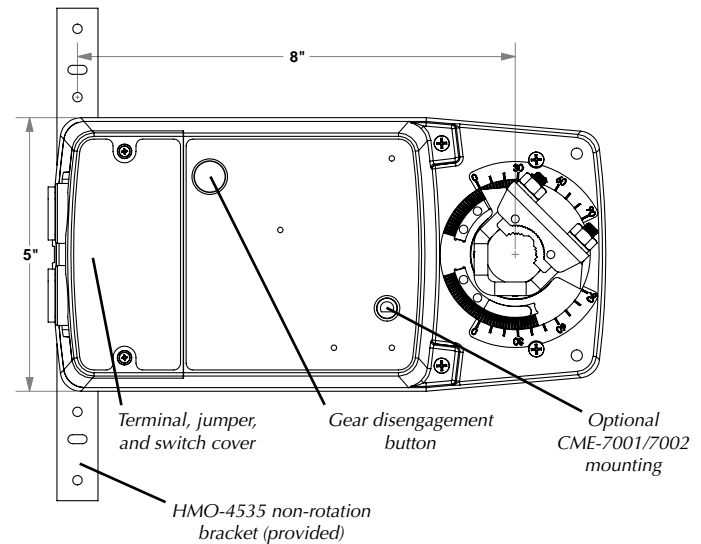
- ◆ More powerful and less load-dependent (reduced spread between no-load and full-load timing) than earlier MEP-1200/7000/7700 series actuators they replace
- ◆ Proportional models include “anti-jitter” circuitry and optional auto-mapping of the full input signal range over a reduced actuator stroke
- ◆ Efficient, durable, capacitor-driven fail-safe option with switch-selectable direction provides consistent torque in both powered and fail-safe modes
- ◆ Fail-safe tri-state models are capable of being wired for two-position operation
- ◆ Potentiometer or voltage feedback options
- ◆ Removable terminals and 1/2" conduit fittings
- ◆ Direct mounting to standard shaft sizes, and a gear disengagement button for manual shaft positioning

**NOTE:** Before Jan. 2014, **MEP-7xx2 proportional** models had (besides the 4-20 mA input) a **0–10 VDC input** and **0–5 or 0–10 VDC feedback**. From 2014 through July 2015, they had a **2–10 VDC input** and **1–5 or 2–10 VDC feedback** instead. Starting in August 2015, **all** these options were available and selectable via a jumper and slide switch.

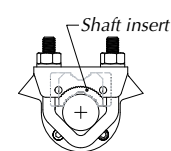
**NOTE:** When the **0–10 VDC input** is selected (with the jumper), selectable (with a switch) feedback options are **0–5 or 0–10 VDC**. When the **2–10 VDC input** is selected, feedback options are **1–5 or 2–10 VDC**.

## Dimensions

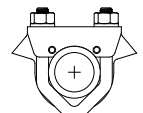
All dimensions are in inches



Position insert as shown for 3/8" to 9/16" round shafts or 5/16" to 3/8" square shaft (1/2" round shafts on center)



Position insert as shown for 5/8" to 13/16" round shafts or 1/2" to 5/8" square shafts (3/4" round shafts on center)



Remove insert for 7/8" to 1.05" round shafts (1.05" round shafts on center)

## Specifications

<b>Supply Voltage</b>	24 VAC (+20%/–15%) or 22–35 VDC (Class 2 Only)	<b>Dimensions</b>	10-1/8 x 5 x 3 inches (257 x 127 x 76 mm)
<b>Supply Power</b>		<b>Weight</b>	MEP-7x0x: 5 lb. (2.3 kg); MEP-7x5x: 5.4 lb. (2.5 kg)
MEP-750x	6 VA	<b>Enclosure</b>	Flame retardant polymer, NEMA 2 and IP54 (install HMO-4521 or HPO-7001 to guarantee IP54)
MEP-755x	8 VA normal (25 VA peak while initializing)	<b>Noise Level</b>	< 45 dbA max. at 1 meter
MEP-780x	8 VA	<b>Approvals</b>	UL 873 Temperature Indicating and Regulating Equipment FCC Class B, Part 15, Subpart B
MEP-785x	10 VA normal (40 VA peak while initializing)	<b>Environmental Limits</b>	
<b>Control Input</b>		Operating	–22 to 131° F (–30 to 55° C)
Tri-state	(See Supply Voltage; fail-safe MEP-7x51/7x53 models can also be wired for 2-position operation)	Shipping	–40 to 176° F (–40 to 80° C)
Proportional	0–10 VDC, 2–10 VDC, or 4–20 mA (jumper selectable)	Humidity	5 to 95% RH (non-condensing)
<b>Feedback</b>		<b>Accessories</b>	
Tri-state	10K ohm (±10%) potentiometer (MEP-7xx3 models only)	CME-7001	Auxiliary switch, single SPDT
Proportional	Switch selectable 1–5 VDC or 2–10 VDC with 2–10 VDC or 4–20 mA inputs; switch selectable 0–5 VDC or 0–10 VDC with 0–10 VDC input	CME-7002	Auxiliary switch, dual SPDT
<b>Angular Rotation</b>	94°; fully adjustable with HMO-4536 stop kit	CTE-5202	Proportional electronic thermostat
<b>Motor Timing</b>	90–115 sec., load dependent (powered)	HCO-1152	Weather shield enclosure kit
<b>Fail-Safe Timing</b>	80–115 sec., load dependent (switch-selectable CW, CCW, or Off; up to 40-second delay while charging capacitor after initial connection to power)	HLO-1020	Crank arm kit
<b>Torque</b>		HMO-4521	Liquid-tight cord grip for conduit fitting, 1/2" NPT (5 pack)
MEP-75xx	180 in-lb. (20 N•m)	HMO-4535	Replacement non-rotation bracket
MEP-78xx	320 in-lb. (36 N•m)	HMO-4536	Adjustable end stop kit
<b>Connections</b>	Wire clamp type; 14–22 AWG, copper	HPO-7001	Plenum cable kit, 3-foot
<b>Mounting</b>	Direct mounting on 3/8" to 1.05" round or 5/16" to 5/8" square shaft by adjustable "V" bolt and non-rotational bracket HMO-4535 (supplied); minimum recommended damper shaft length is 2.5"		

NOTE: For more on accessories, troubleshooting, master/slave wiring, torque selection, applications, and other information, see the [MEP-7xxx Applications Guide](#).

### KMC Controls, Inc.

19476 Industrial Drive

New Paris, IN 46553

574.831.5250

[www.kmcccontrols.com](http://www.kmcccontrols.com)

[info@kmcccontrols.com](mailto:info@kmcccontrols.com)