

Installation Guide

Mounting

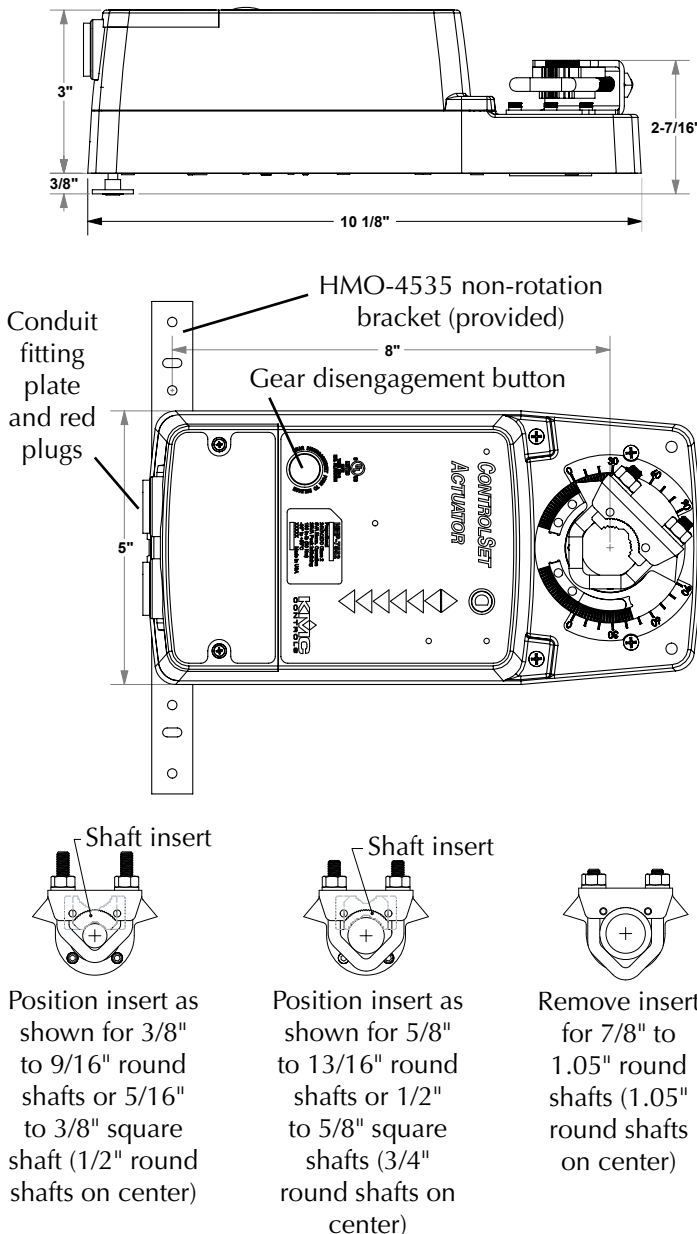


Illustration 1—Overview (Direct-Coupled Mounting)

NOTE: The MEP-7200 series (120 in-lb.) was discontinued. Use an MEP-75xx (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.

1. Ensure that the damper can move freely through its entire range of motion, and fix any binding before installing the actuator. Turn the damper blade to its fully closed position.
2. Press and hold the gear disengagement button (see Illustration 1), rotate the actuator to the fully closed position, and release the button.

NOTE: Depending on the damper-seal design, backing the actuator off its stop approximately 5° may provide tight damper shut-off.

3. Depending on the size of the shaft, use the optional shaft insert as is, reverse it, or remove it. Slide the actuator onto the shaft.
4. Leaving a gap between the actuator and mounting surface to prevent any binding, finger-tighten the nuts on the V-bolt.
5. Insert the non-rotation bracket (supplied HMO-4535) into the slot at the base of the actuator.
6. Secure the non-rotation bracket with two (2) #8 self-tapping screws.

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-1020 Crank Arm Kit. (For accessory information, see the [MEP-7xxx Applications Guide](#).)

7. Evenly tighten the V-bolt nuts to 110 to 120 in-lb. while keeping the shaft insert centered and square.
8. Verify the operation of the actuator through its full rotational cycle.

NOTE: Before 2014, MEP-7xx2 proportional models had 0–10 VDC inputs and 0–5 or 0–10 VDC feedback. Starting in Jan. 2014, they have 2–10 VDC inputs and 1–5 or 2–10 VDC feedback instead.

Wiring (General)

1. Loosen the screws on the tethered access cover and remove the cover.
2. Slide the conduit fitting plate out.
3. Using a utility knife or drill, cut the red plug to accept wiring or replace the plug with an application-specific fitting.

NOTE: The red plugs (or similar fittings) protect the internal components from debris, helping to ensure long actuator life.

4. Thread wires through the plugged opening and connect to the terminal block according to the appropriate model and options desired. (See Illustrations 2 through 5.)

NOTE: For your convenience, the wiring terminal block is removable.

NOTE: For **two-position wiring on a fail-safe tri-state actuator** (see Illustration 5), choose one of these (jumpered) rotation options:

1. For **clockwise rotation** when the 24 volt circuit switch/contact is **closed**, jumper the 24 VAC terminal to the CW terminal and select CCW on the Fail switch. When the circuit opens, the actuator rotates fully counterclockwise.
2. For **counterclockwise rotation** when the 24 volt circuit switch/contact is **closed**, jumper the 24 VAC terminal to the CCW terminal and select CW on the Fail switch. When the switch opens, the actuator rotates fully clockwise.



5. Reinstall the terminal block on the pins (if removed) and the conduit fitting plate.
6. For MEP-7xx2 (proportional) models, adjust the auto-mapping range reset, rotation direction, and feedback voltage as needed. See [Direction, Feedback, & Auto-Mapping \(Proportional MEP-7xx2 Models\) on page 3](#).
7. For MEP-7x5x models, adjust the fail-safe (clockwise, counter-clockwise, or off) selector switch, beside the terminal block, as needed.

NOTE: After initial connection or reconnection to power (until the capacitors are fully charged), fail-safe operation might be delayed up to 20 seconds for the MEP-725x/755x or up to 40 seconds for the MEP-785x.

8. Reinstall the tethered cover and tighten the screws.

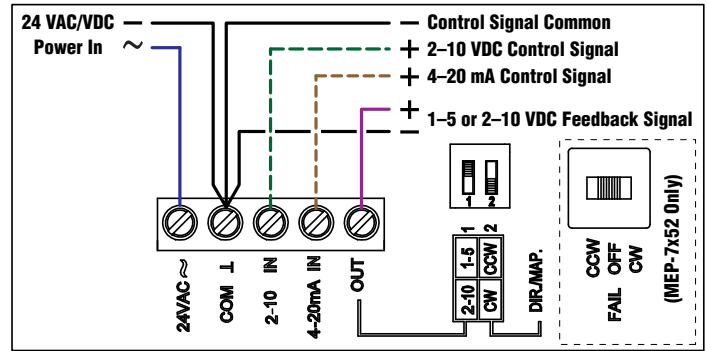


Illustration 2—MEP-7xx2 Wiring (Proportional)

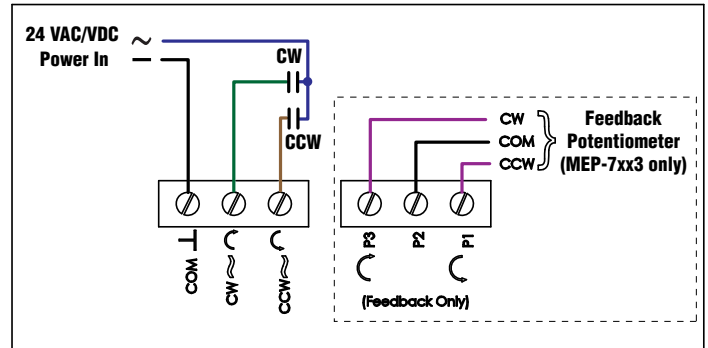


Illustration 3—MEP-7x01/7x03 Wiring (Tri-State, Non-Fail-Safe)

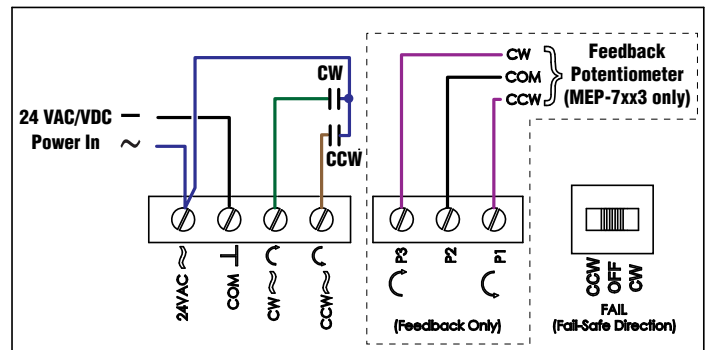


Illustration 4—MEP-7x51/7x53 (Normal) Wiring (Tri-State, Fail-Safe)

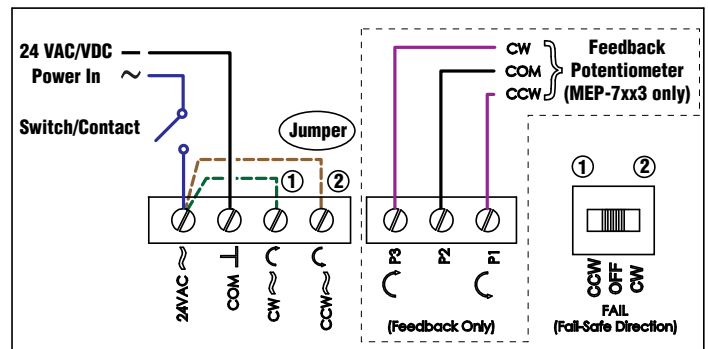


Illustration 5—MEP-7x51/7x53 Two-Position Wiring (Tri-State, Fail-Safe)

Wiring (Master/Slave)

See the [MEP-7xxx Applications Guide](#).

Direction, Feedback, & Auto-Mapping (Proportional MEP-7xx2 Models)

NOTE: Before Jan. 2014, MEP-7xx2 proportional models had 0–10 VDC inputs and 0–5 or 0–10 VDC feedback. Starting in 2014, they have 2–10 VDC inputs and 1–5 or 2–10 VDC feedback instead.

Proportional models offer **selectable actuator rotation direction** and **selectable proportional feedback** of 1–5 VDC or 2–10 VDC (in either direction).

To access the selector switches (see Illustration 6.), loosen the screws on the conduit fitting and lift up to remove the fitting. The selector switches are shipped from the factory in the 1–5 VDC (#1) and CW movement with increasing voltage (#2) positions.

Switch	(#1) Feedback	(#2)* Direction
Up	1–5 VDC	CCW
Down	2–10 VDC	CW

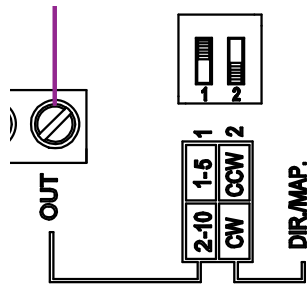


Illustration 6—Feedback Selector Detail MEP-7xx2

***NOTE:** Selector Switch #2 has two functions:

1. **Switch #2 determines the direction to rotate** (CW or CCW) with increasing voltage and is **factory set in the CW position (down). To change, remove power before flipping the switch up to the CCW position.** Removing power prevents initiation of the auto-mapping feature.
2. **Switch #2 initiates the auto-mapping feature.** (See description below.) This feature is initiated only by **cycling the switch with power applied** to the unit. The auto-mapping feature will NOT begin if the switch position is changed with power removed or in the event of a power failure.

MEP-7xx2 models also offer a **actuator/signal range reset program (auto-mapping)** feature that reassigns the full 2–10 VDC input signal scale over a reduced stroke range for more precise control.

NOTE: The auto-mapping feature works best for ranges that are more than about 45°.

To set the auto-mapping:

1. If desired, use the HMO-4536 adjustable end stop kit to limit the stroke of the actuator.
2. With power applied to the actuator, flip selector switch #2 (from its required CW or CCW increasing voltage direction) to start the reset mode. The actuator will first move to the CCW limit. The complete reset process will take approximately four minutes.

NOTE: On **fail-safe** models, wait for at least one minute after power has been applied to the actuator (allowing the capacitors to fully charge) before initiating the automap feature.

3. Return selector switch #2 to the required increasing voltage direction before the reset finishes. The reset process is complete after the actuator has moved to the CW limit and has begun to position normally.
4. Verify that the actuator travels completely across the new range.

For example, after completing the auto-mapping program, the **new actuator stroke is 0–80°**:

- **Before Jan. 2014**, a 5 VDC input signal (halfway between 0–10 VDC) will drive the actuator to the 40° position (50% of its adjusted range) and the feedback voltage will be 2.5 VDC if switch #1 is set at the 0–5 VDC position or 5 VDC if switch #1 is set at 0–10 VDC.
- **Starting in Jan. 2014**, a 6 VDC input signal (halfway between 2–10 VDC) will drive the actuator to the 40° position (50% of its adjusted range) and the feedback voltage will be 3 VDC if switch #1 is set at the 1–5 VDC position or 6 VDC if switch #1 is set at 2–10 VDC.

NOTE: The auto-mapping option is not available with Master/Slave applications.

Fail-Safe Direction (MEP-7x5x)

All fail-safe models offer selectable CW/CCW fail direction and the option to turn off the fail-safe using a slide switch to the right of the terminals.

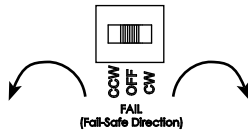


Illustration 7—Fail-Safe Direction Switch

NOTE: After initial connection or reconnection to power, proper fail-safe operation might be delayed up to 40 seconds (until the capacitors are fully charged).

Maintenance

No routine maintenance is required. The motors are permanently lubricated. Careful installation will also ensure long term reliability and performance.

Accessories

See the [MEP-7xxx Applications Guide](#).

Specifications

See the [MEP-7500/7800 Series Data Sheet](#).

Applications

For possible proportional heating/cooling applications using the CTE-5202 electronic thermostat, see the [CTE-5202 Applications Guide](#).

For valve applications, see information on:

- **VEB-53 Series** Two-Way, Flanged Ball Valves (4 to 6")
- **VEB-56 Series** Three-Way, Flanged Ball Valves (4 to 6")
- **VEF-53 Series** Two-Way, Rubber-Lined, Butterfly Valves (2 to 6")
- **VEF-56 Series** Three-Way, Rubber-Lined, Butterfly Valves (2 to 6")

The latest support files are always available on the KMC Controls web site (www.kmcccontrols.com).

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More Information

For models, specifications, and additional information, see the [MEP-7500/7800 Series Data Sheet](#) on the KMC web site.



For accessories, troubleshooting, master/slave wiring, torque selection, links to sample applications, and other information, see the [MEP-7xxx Applications Guide](#) on the KMC web site.



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