

### Description and Application

The compact, analog electronic CEP-4703/CEP-4703V is a combination controller-actuator designed to control the DAT (Discharge Air Temperature, also known as LAT or Leaving Air Temperature) primarily in fan coil and unit ventilator applications. It can be configured for heating or cooling.

DAT temperature setpoint is determined by a resistor (purchased separately—see chart) connected to the terminal block. DAT temperature is measured by a remote STE-1401 (or other 10K Type III thermistor sensor). A sensitivity adjustment (potentiometer) determines the speed of response to measured temperature changes away from setpoint.

When the CEP-4703/4703V is connected to power:

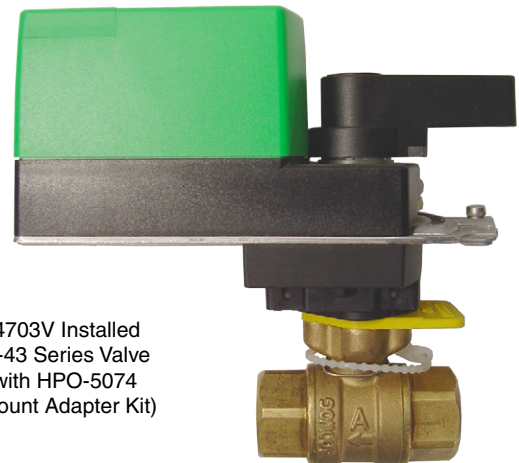
1. The actuator drives to the fully closed position (for two minutes). If the Override signal is present (contact closed across two terminals), indicating system On, the actuator waits one more minute and then starts controlling. If the Override signal is absent (contact open), indicating system Off, the actuator waits in the closed position.
2. Whenever the system goes Off, the actuator stores its current position and then drives to the fully closed position.
3. Whenever the system goes On, the actuator returns to its previous (stored) position, waits one minute, and resumes controlling.

The CEP-4703V has a bracket with a patent-pending, **quick-mounting** mechanism for attaching to valve bodies. See [\(Quick-Mounting\) CEP-4703V Valve Cross-Reference on page 5](#) for more information.

The CEP-4703 mounts 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. (An HLO-4001 crank arm kit is available, however, for when direct mounting is impractical.) An HMO-4002 non-rotation bracket, to prevent lateral movement, is included. (An HMO-4001 non-rotation “T” bracket is also available for spanning open distances.) A gear disengagement button allows easy manual positioning of the actuator.



(CEP-4703)



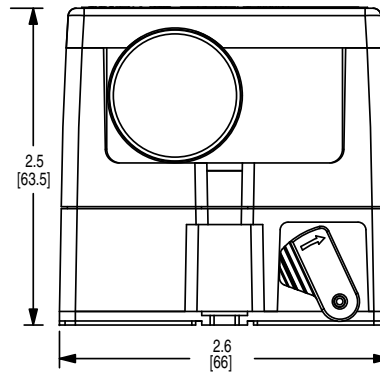
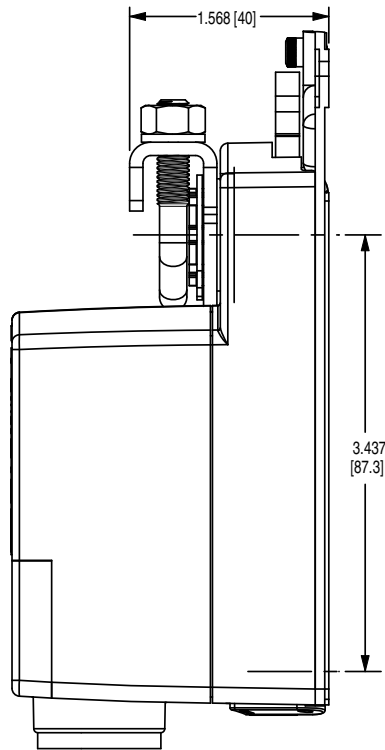
(CEP-4703V Installed on VEB-43 Series Valve Body with HPO-5074 Quick-Mount Adapter Kit)

### Features

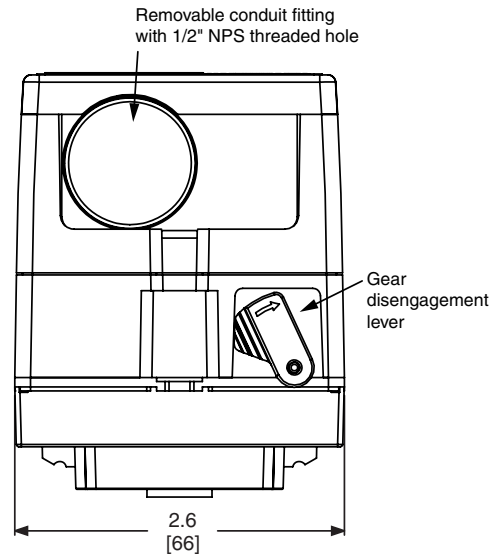
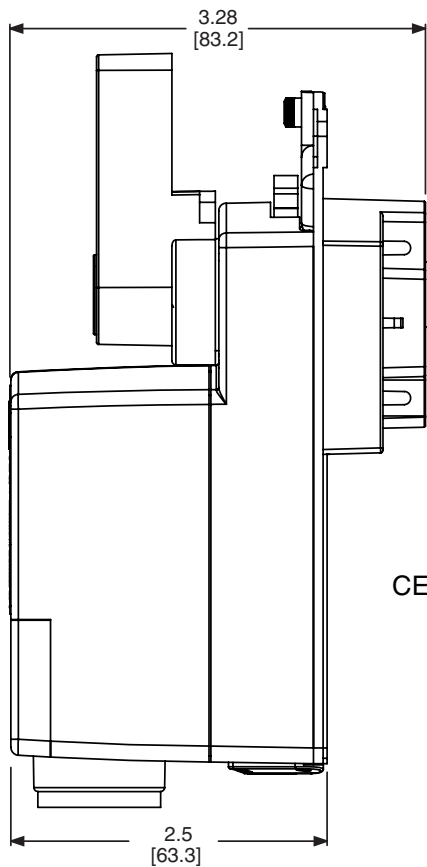
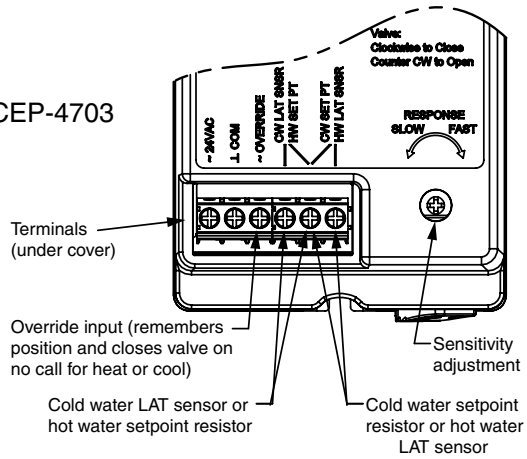
- ◆ Compact size is suitable for even tight spaces
- ◆ DAT temperature is measured by a remote STE-1401, and setpoint is determined by a resistor (see chart on page 3) connected to terminals
- ◆ Sensitivity adjustment determines speed of response to a measured change from setpoint
- ◆ Override signal (contact) determines system On/Off
- ◆ Adjustable mechanical end stop and gear disengagement button allow easy positioning
- ◆ CEP-4703 mounts directly to shafts, eliminating the need for expensive and complicated linkages; quick-mounting valve body option on CEP-4703V

# Specifications

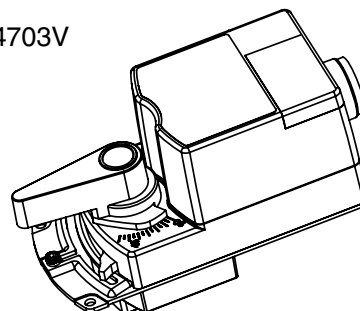
All dimensions are in inches (mm)



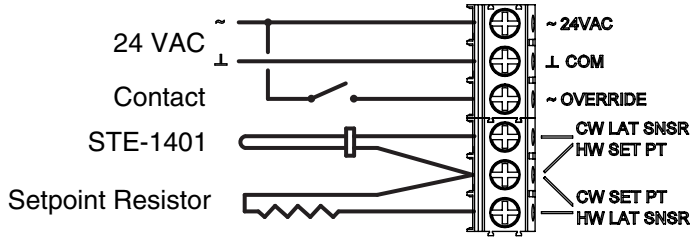
CEP-4703



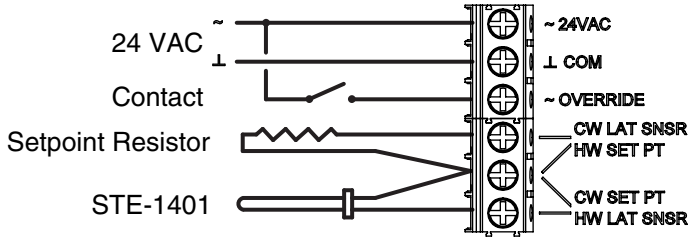
CEP-4703V



### Configured for Cooling



### Configured for Heating



Contact Closed = System On; Open = System Off

CW to Close; CCW to Open

DAT Setpoint Resistor*			
°F	Ohms	°F	Ohms
<i>Chilled Water</i>		<i>Hot Water</i>	
54	16.9K	94	6.98K
56	16.2K	96	6.65K
58	15.4K	98	6.34K
60	14.7K	100	6.04K
62	14.0K	102	5.90K

\*1/4 Watt, 1% (purchased separately from local supplier)

For information on mounting, wiring, sequence operation, and other information, see the [CEP-4703/4703V Installation Guide](#).

**Supply Voltage** 24 VAC (-15/+20%), 50/60 Hz, Class 2 only

**Supply Power** 4 VA max.

**Frequency** 50/60 Hz.

**Override Input** Contact across phase side of supply voltage and override terminal

**Output Torque** 40 in-lb. (4.5 N•m)

**Angular Rotation** 0 to 95°, fully adjustable with mechanical stop

**Stroke Time** 90 seconds for 90° @ 60 Hz, 108 seconds for 90° @ 50 Hz

**Rotation Direction** Clockwise to close, counter-clockwise to open

**Noise Level** < 35 dBA max. at 1 meter

**Connections** Wire clamp type, 14 to 22 AWG, copper

**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 non-rotational bracket HMO-4002 (supplied) or HMO-4001; minimum recommended shaft length is 1-5/8 inches

**Material** Flame-retardant plastic, black housing with green cover

**Weight** 1.0 lb. (0.45 kg.)

**Approvals** SASO pending

#### Environmental Limits

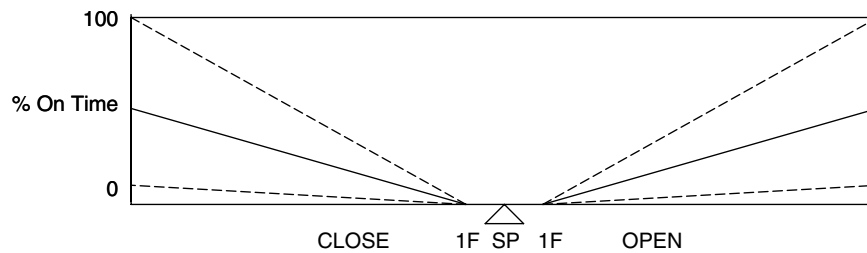
Operating 32 to 131° F (0 to 55° C)

Shipping -40 to 176° F (-40 to 80° C)

Humidity 5 to 95% RH (non-condensing)

**Valve Body** See valve body specifications

### Control Sequence



% On-Time Slope Adjustable Via Sensitivity Adjustment

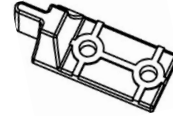
Maximum = 30% per °F (faster response but less stable)

Minimum = 3% per °F (slower response but more stable)

% On-Time Period = 1 Minute

## Accessories

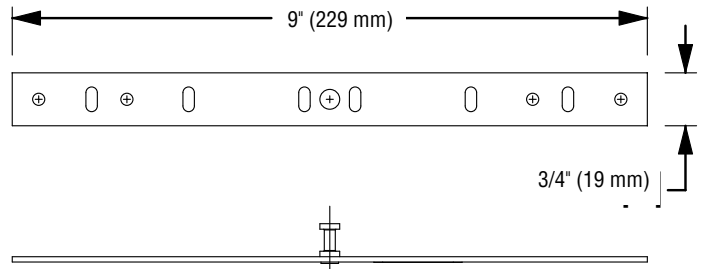
(Resistor)	DAT setpoint resistor (see chart on previous page)
HCO-1151	Weather shield kit
HLO-4001	Crank arm kit
HMO-4001	Non-rotation "T" bracket
HMO-4002	Replacement non-rotation bracket
STE-1401	Duct temperature sensor (Type III, 10K)



An **HMO-4002** non-rotation bracket is provided with the CEP-4703.



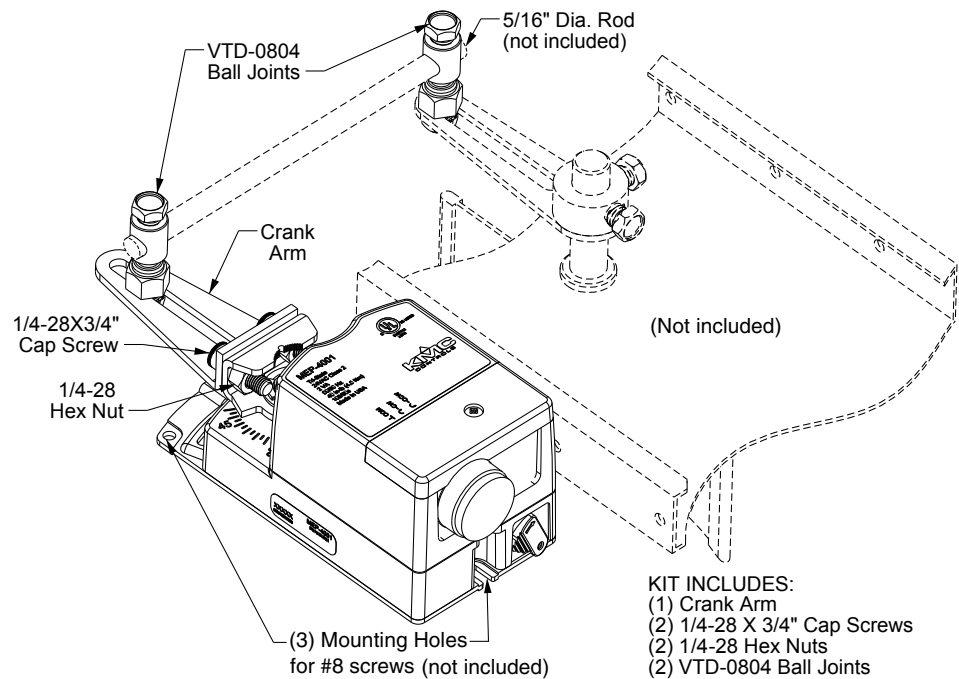
An **STE-1401** duct sensor is used for sensing DAT temperature.



An **HMO-4001** non-rotation "T" bracket can be used instead to span an open distance.



An **HCO-1151** enclosure, consisting of a metal mounting plate, plastic cover, non-rotation bracket, plug caps, and screws, is designed to protect actuators from inclement weather.

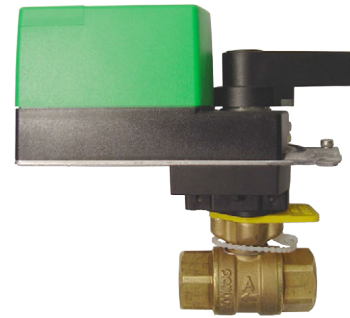


An **HLO-4001** crank arm kit is used when direct mounting of a CEP-4703 is impractical.

## (Quick-Mounting) CEP-4703V Valve Cross-Reference

CEP-4703V controller-actuators have brackets with a patent-pending, **quick-mounting** mechanism that mounts directly on VFB-43...BC and VFB-46...BC series valve bodies. See the [HPO-5074 installation guide](#) and the [VEB-43](#) and [VEB-46](#) series data sheets for additional information.

With the **HPO-5074 kit**, CEP-4703V controller-actuators can be mounted on the following KMC and other valve bodies:



Typical Application	3-Way H/C Water	2-Way H/C Water	2-Way PIC-V H/C Water
KMC Valve Body	VFB-46__BC*	VFB-43__BC*	N/A
KMC Valve	VEB-46__B__	VEB-43__B__	
Valve Solutions (VSI)	UR3 Series	UR2 Series	SPV Series
Griswold	UR3 Series	UR2 Series	SPV Series
Delta Control Products	ST Series	ST Series	ATI Series
Honeywell	VBN3 Series	VBN2 Series	N/A
Siemens	599 Series	599 Series	
*VFB-4__BC valve bodies come with the HPO-5074 already installed.			

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