

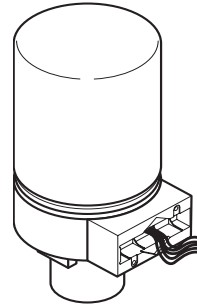
Electronic Hydraulic Actuator

MP-52xx Series

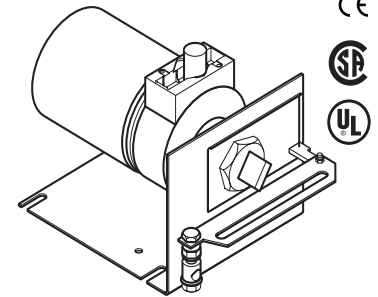
These actuators provide electronic proportional control of dampers, valves, or program switches requiring the return to normal position upon power interruption.

Features:

- Compatibility with 2 to 15 Vdc System 8000 input signals.
- Proportional control by variable Vdc input signal.
- Spring return.
- Fixed 3 Vdc operating span.
- Non-adjustable start point and non-positive positioning. Typically, one actuator is controlled from one Vdc output signal.
- 10,000 Ω or greater input impedance.
- 24, 120, and, 240 Vac models.
- Damper models with linkage or base models requiring separate damper or valve linkage available.
- Die cast lower housing with 1/2 in. (12.7 mm) conduit opening and painted steel upper housing.
- Hydraulic actuator with oil-immersed motor, transducer, and pump.



MP-521X
Valve Actuator



MP-523X
Damper Actuator



Model Chart

Damper Actuators.

Model No.	Actuator Power Input			Timing in Seconds at 72°F (22°C)			Torque Rating lb-in. (N-m)
	Voltage (±10%)	50/60 Hz		No Load Stroke		Retract on Power Loss	
		Watts	VA	To Extend	To Retract		
MP-5230	120	10	18	60	40	15	1.86 (0.21)
MP-5233	24						

Valve Actuators. Also for Damper Actuators with Field Assembled Damper Linkages.

Model No.	Actuator Power Input			10 Amps ^a Aux Switch	Timing in Seconds @ 72°F (22°C)			Required Linkage	
	Voltage (±10%)	50/60 Hz			No Load Stroke		Retract on Power Loss	Damper	Valve
		Watts	VA		To Extend	To Retract			
MP-5210	120	10	18	No	60	40	15	AM-601	AV-600 or AV-7600-1 AV-601 ^b
MP-5210-500				Yes					
MP-5211	240			No					
MP-5211-500				Yes					
MP-5213	24			No					
MP-5213-500				Yes					

^a Common of switch in series with AC power supply to the motor. Therefore, the switch must be wired to control the same voltage as the actuator itself.

^b May be required for steam, hot or chilled water. Refer to Maximum Allowable Ambient Air Temperature for Valve Actuators.

MP-52xx Series

Maximum Allowable Ambient Air Temperature for Valve Actuators.

Temperature of Media in the Valve Body (Check the Rating of the Valve) °F (°C)	Maximum Allowable Ambient Air Temperature of MP-52xx Series	
	AV-600 or AV-7600-1 Only for Chilled Water Applications °F (°C)	AV-600 or AV-7600-1 with AV-601 Extension °F (°C)
366 (180)	90 (32)	90 (32)
340 (171)	100 (38)	100 (38)
281 (138)	115 (46)	140 (60)
181 (83)	140 (60)	
80 (26)		

CAUTION: Avoid condensation which can facilitate corrosion. With 40°F (4°C) water, the maximum allowable ambient dew point temperature is 68°F (20°C). Piping insulation must not stop drainage at actuator mounting nut. Do not use hydraulic actuators with fluid temperatures below 40°F (4°C).

Specifications

Actuator inputs

Compatible with	2 to 15 Vdc from System 8000 controllers. Operating span: Approximately 3 Vdc fixed on damper. See F26235-2 for valves. Start point: Approximately 6 Vdc fixed. See F-26235-2 for valves. Impedance: 10,000 Ω or greater.
Power input	Refer to Damper Actuator Model Chart, and Valve Actuator Model Chart.
Connections	Color coded 4 ft. (1.2 m) leads.

Actuator outputs

Electrical	Internal power supply: 20 Vdc, 25 mA. Auxiliary switch (MP-52XX-500): 10 amps, 120/240 Vdc adjustable SPDT, factory set to close N.C. contact at retracted end of stroke.
Mechanical	Stroke, Damper: Approximately 2 in. (51 mm) over a nominal 6 Vdc (fully retracted) to 9 Vdc (fully extended) input range. Includes AM-601 linkage. Stroke, Valve: Approximately 9/16 in. (14 mm) over a nominal 6 Vdc (fully retracted) to 9 Vdc (fully extended) input range. Nominal damper area: Actuator sizing should be done in accordance with damper manufacturer's specifications.

Environment

Ambient temperature limits	Shipping and handling: -40 to 140°F (-40 to 60°C). Operating: -20 to 140°F (-29 to 60°C) for damper actuators. For valve actuators, refer to Maximum Allowable Ambient Air Temperature for Valve Actuators.
Humidity	5 to 95% RH, non-condensing.
Location	NEMA Type 1.
Dimensions	6-3/4 H x 3-1/4 W in. (171 x 83 mm).

Agency Listings

UL	File E9429 Temperature Indicating and Regulating Equipment.
CUL	Canadian Standard C22.2 #24-93.
European Community	EMC Directive 89/336/EEC, Low Voltage Directive 72/23/EEC.
General Instructions	Refer to F-24789.

Accessories

Model No.	Description
Damper Only	
AM-111	Crank arm for 5/16 in. (7.9 mm) diameter damper shaft.
AM-112	Crank arm for 3/8 in. (9.5 mm) diameter damper shaft.
AM-113	Crank arm for 1/2 in. (12.7 mm) diameter damper shaft.
AM-115	Crank arm for 7/16 in. (11.1 mm) diameter damper shaft.
AM-122	Linkage connector straight type.
AM-123	Damper clip.
AM-125	5/16 in. (7.9 mm) diameter x 20 in. (508 mm) damper rod.
AM-125-048	5/16 in. (7.9 mm) diameter x 48 in. (1,219.2 mm) damper rod.
AM-132	Ball joint connector.
AM-161-3	Damper linkage kit.
AM-601	Required to modify valve actuators into 2 in. (50.8 mm) stroke damper actuators. Device includes mounting bracket, damper linkage with spring, and AM-122 straight connector.
AM-602	Spacer.
Valve Only	
AV-600	Valve linkage 1/2 to 2 in. VB-7xxx and discontinued VB-9xxx valves.
AV-601	Valve linkage extension for hot water and steam applications. Use with AV-7600.
AV-7600-1	Valve linkage for VB-7XXX.
TOOLS (factory available)	
TOOL-12	Wrench for adjustment of auxiliary switch.
TOOL-19	Spring compression tool for AV-600.
TOOL-202	Manual positioner.

Typical Applications

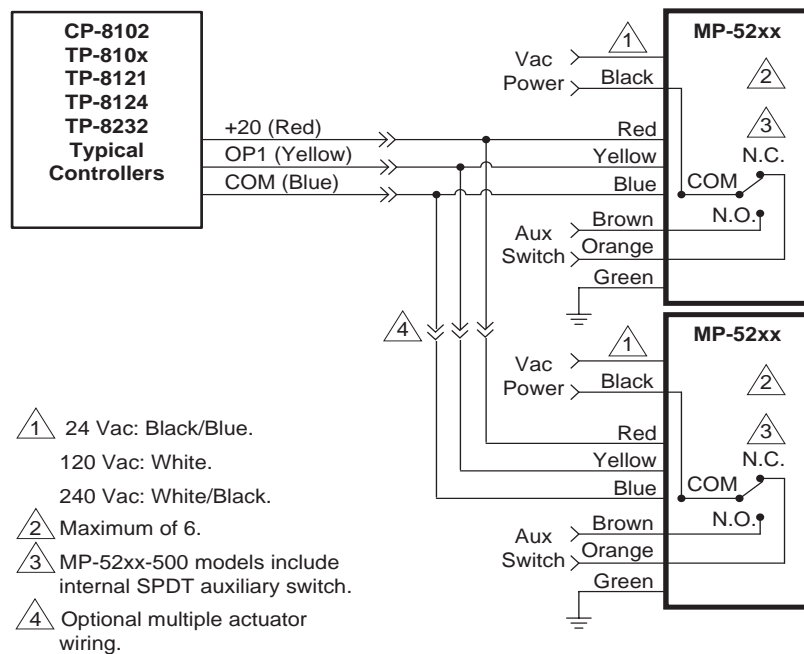


Figure 1 Typical Control Wiring for up to Six MP-52xx Series Actuators to Controllers Requiring External 20 Vdc Power Supply.