

**BMA Series**  
**Electric Actuators**  
**Spring Return**

**FEATURES & BENEFITS**

Small Footprint	<ul style="list-style-type: none"> <li>Fits in the tightest damper and valve applications</li> </ul>
On/off, 3-wire Floating, or Proportional Inputs	<ul style="list-style-type: none"> <li>Provides the right actuator for any applications</li> </ul>
Reversible Mounting Design	<ul style="list-style-type: none"> <li>Provides Clockwise (CW) or Counterclockwise (CCW) return-to-normal positioning if a power loss occurs</li> </ul>
Built-in Overload Protection	<ul style="list-style-type: none"> <li>Increases actuator life by deactivating the actuator motor when an overload is detected</li> </ul>
Self Centering Coupler	<ul style="list-style-type: none"> <li>Assures concentricity and smooth stroke throughout the travel of actuator</li> </ul>
1/2 in. Conduit Connector with Standard or Plenum-rated Leads	<ul style="list-style-type: none"> <li>Meets local code requirements for wiring and allows easy field wiring on retrofit jobs</li> </ul>
High Visibility Position Indicator	<ul style="list-style-type: none"> <li>Simplifies field check-out and control loop diagnostics</li> </ul>
All Metal Housing	<ul style="list-style-type: none"> <li>Resists damage due to rough field handling</li> </ul>



The BMA Series is a direct-mount, spring return line of electric actuators that operates on 24 VAC or VDC power and is available for use with floating, on/off, or proportional controllers. A 120 VAC on/off model is also available.

These bi-directional actuators do not require a damper linkage, and are easily installed on a round shaft up to 3/4 in. (20.5 mm) diameter or a square shaft up to 1/2 in. (13 mm). They are also offered on the Bray VCB Series characterized ball valves.

The BMA models deliver 62 lb-in (7 Nm) of torque. The angle of rotation is mechanically adjustable.

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**APPLICATION OVERVIEW**

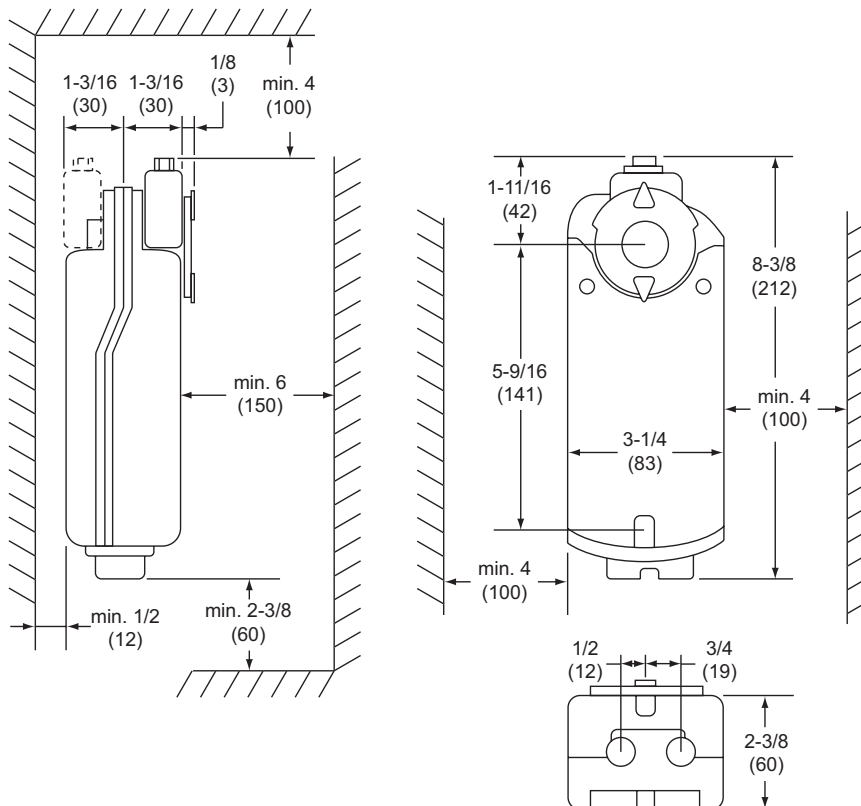
BMA actuators are designed to position air dampers and valves in HVAC systems. Applications include:

- positioning return air, exhaust, or outdoor air dampers
- controlling face and bypass dampers
- positioning valves when used with the Bray VCB Series Characterized Ball Valve
- positioning VAV terminal unit dampers.

Refer to the manufacturer's information to properly size the damper, valve, and/or actuator.

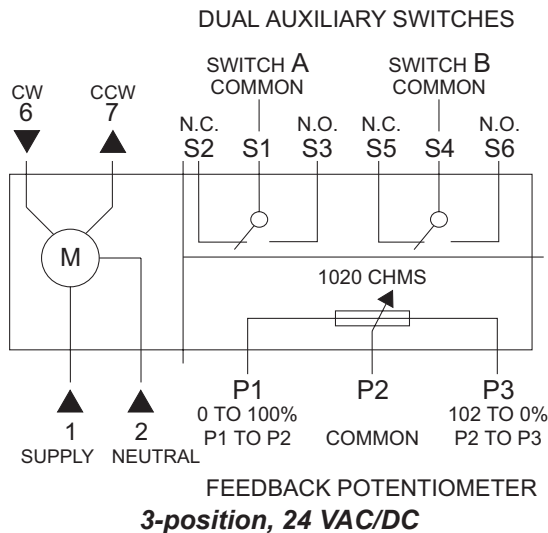
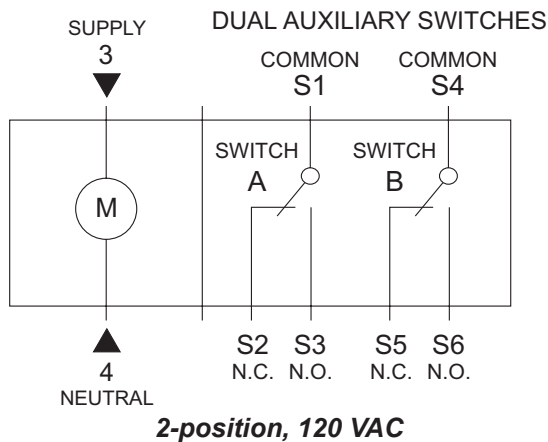
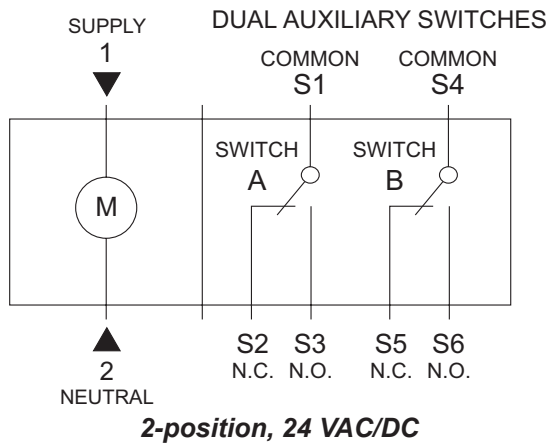
**CAUTION:** This device is not designed or intended to be used in or near environments where explosive vapors or gases could be present or environments where substances corrosive to the device's internal components could be present.

**DIMENSIONS**



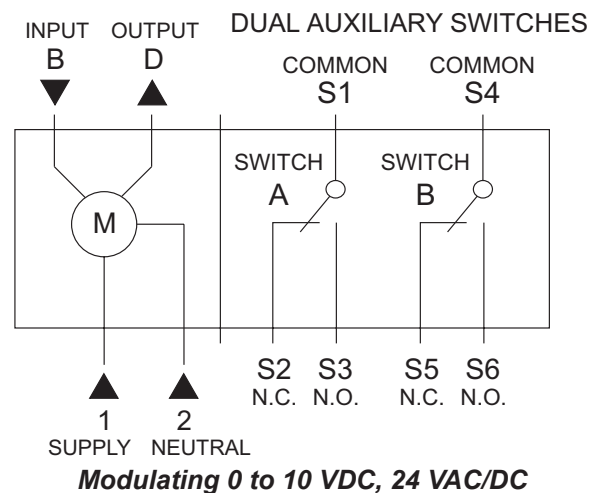
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#### WIRING



#### MODEL INFORMATION

	BMA-121.1U	BMA-121.1P	BMA-221.1U	BMA-131.1U	BMA-136.1U	BMA-161.1U	BMA-161.1P	BMA-166.1U
On/Off Control	•	•	•					
Floating Control				•	•			
0 - 10 VDC Proportional Control						•	•	•
24 VAC/DC	•	•		•	•	•	•	•
120 VAC			•					
Standard Cable	•		•	•	•	•		•
Plenum-Rated Cable		•					•	
2 Auxiliary Switches					•			•



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## SPECIFICATIONS

Power Requirements	20 to 30 VAC at 50/60 Hz or 24 VDC $\pm 10\%$ , Class 2	Running: 5 VA/3.5 W Holding: 4 VA/3 W
	120 VAC	Running and Holding: 7 VA/5 W
Input Signal	Floating (-131 Models)	20 to 30 VAC at 50/60 Hz or 24 VDC $\pm 10\%$
	On/Off (-121 Models)	20 to 30 VAC at 50/60 Hz or 24 VDC $\pm 10\%$
	On/Off (-221 Models)	120 VAC $\pm 10\%$ , at 50/60 Hz
	Proportional Models	0 to 10 VDC
Input Impedance	Proportional	> 100,000 $\Omega$
Feedback Signal	Proportional	0 to 10 VDC for 90°
Spring Return	Direction is selectable with the mounting position of the actuator.	
Mechanical Output	Running Torque: 62 lb-in (7 Nm)	
Rotation Range	90° Nominal, mechanically limited to 95°; Adjustable in 5° from 0 to 90°	
Rotation Timing	Operating with motor: 90 seconds	
	Spring Return	15 seconds typical, 60 seconds max. at -25°F (-32°C)
Electrical Connections	Standard	.1U Models: 3 ft. (.9 m) cable with 18 AWG wire leads
	Plenum	.1P Models: Same as above with plenum-rated jacket
	All Models	1/2" NPT provision for conduit connector
Shaft Connection	1/4 to 3/4 in. (6.4 to 20.5 mm) diameter round shaft	
	1/4 to 1/2 in. (6.4 to 13 mm) square shaft	
	1 in. (25 mm) minimum shaft engagement	
Enclosure	Die cast aluminum alloy, NEMA 1	
Ambient Conditions	Operating	-25 to 130°F (-32 to 55°C); 10 to 95% RH, non-condensing
	Storage	-40 to 158°F (-40 to 70°C)
Dimensions (H x W x D)	8-3/8 in. H x 3-1/4 in. W x 2-3/4 in. D (212 x 83 x 66 mm)	
Shipping Weight	2.9 lb (1.3 kg)	
Agency Compliance	UL 60730 Listed (to replace UL 873)	
	C-UL C22.2 No. 24-93	
	CE Directive	

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.

All statements, technical information, and recommendations in this bulletin are for general use only. Consult Bray representatives or factory for the specific requirements and material selection for your intended application. The right to change or modify product design or product without prior notice is reserved.

# **Bray** CONTROLS Commercial Division

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