



ST2 Ball Valve Actuators **Spring Return & Non-Spring Return** **On/Off • Floating • Modulating**

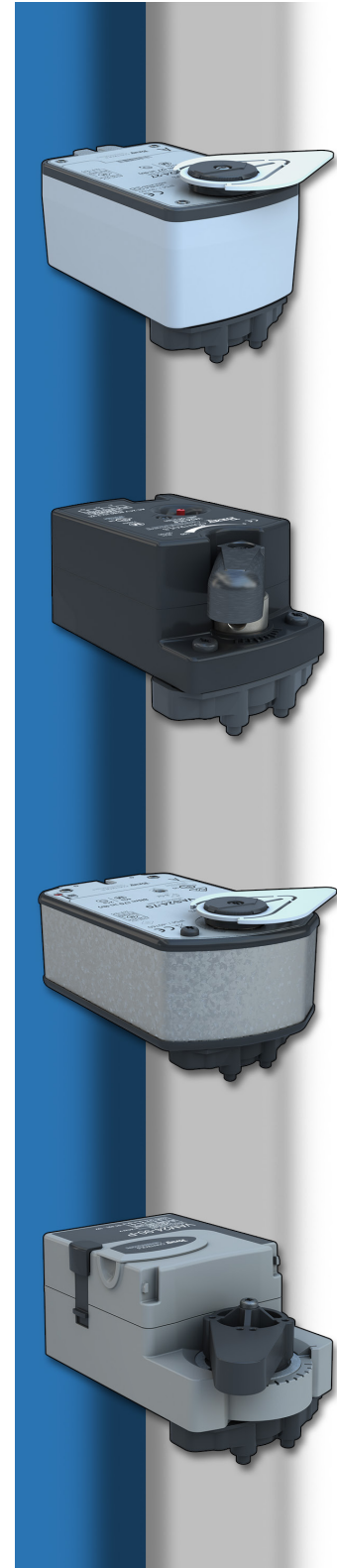
Application

Bray's wide variety of electric actuator choices increases flexibility when choosing peripheral products for Building Automation Systems.

We offer many different torque outputs and optional features to ensure you have the best actuator for the application. Jumper or DIP switch selectable features allow versatility in the field. The actuators are maintenance-free, which means fewer call backs after installation and start-up. In addition, our actuators are manufactured to ISO 9001 and Six Sigma Standards making them the highest quality on the market today.

Options include:

- Spring return or non spring return operation
- Auxiliary switches (optional)
- Weather Shields for outdoor use
- 24V and line voltage models
- On/Off, Floating, or Modulating operation
- Analog feedback on all modulating models
- UL, CSA and CE listings
- 5-year warranty on selected models
- Flying lead or terminal strip electrical connections



Spring Return ST2 Ball Valve Actuators - VAS-27 Series



Technical Specifications - VAS-27 Series Actuator						
Type	Actuator Models	VAS24-27-(A)	VAS24-27-T-(A)	VAMS24-27-(A)	VASU20-27-(A)	
			Spring Return On/Off with optional Auxillary Switches (-A)	Spring Return On/Off & Floating with optional Auxillary Switches (-A)	Spring Return Modulating with optional Auxillary Switches (-A)	Spring Return On/Off with optional Auxillary Switches (-A)
	Torque	27 lb-in. (3 Nm)				
	Operating Voltage	24 VAC 19.2 to 28.8 V) at 50/60 Hz 24 VDC (21.6 to 28.8 V)			AC 100 to 240 V (85 to 264 V) at 50/60 Hz:	
	Power Consumption	VAC - 5 VA Running, 1.6 VA Holding	VAC - 4.7 VA Running, 2.7 VA Holding		0.06 A Running, 0.02 A Holding	
		VDC - 2.8 W Running, 0.8 W Holding	VDC - 1.8 W Running, 1 W Holding			
	Min. Transformer Size	6 VA per actuator			N/A	
Electrical	Input Signal Adjustments	N/A	AC 19.2 to 28.8 V at 50/60 Hz or DC 24 V +20%/-10% Class 2 or SELV. Minimum Pulse Width: 500 m sec.	Factory Setting - DC 0 to 10 V, CW Rotation with Signal Increase Selectable DC 0 (2) to 10 V or 0 (4) to 20 mA with Field-Furnished 500 ohm 0.25 W Min. Resistor Switch Selectable - Direct or Reverse Action with Signal Increase	N/A	
	Control Input Impedance	N/A	4,700 Ohms	100k Ohms, Current Input: 500 Ohms with Field Furnished 500 Ohm Resistor	N/A	
	Feedback Signal	N/A		DC 0 (2) to 10 V for Desired Rotation Range up to 95°. Corresponds to Rotation Limits, 0.5 mA at 10 V Maximum	N/A	
	Auxillary Switch Rating	(-A) Models) One Single-Pole, Double-Throw (SPDT), double-insulated switch with silver contacts: AC 24 V, 50 VA pilot duty AC 120 V, 5.8 A Resistive, 1/4 hp, 275 VA pilot duty AC 240 V, 5.0 A Resistive, 1/4 hp, 275 VA pilot duty			(-A) Models) One Single-Pole, Double-Throw (SPDT), Double-Insulated Switch with Silver Contacts: AC 24 V, 50 VA Pilot Duty AC 120 V, 5.8 A Resistive, 1/4 hp, 275 VA Pilot Duty AC 240 V, 5.0 A Resistive, 1/4 hp, 275 VA Pilot Duty	
	Equipment Rating	Class 2 or Safety Extra-Low Voltage (SELV)			N/A	
	Electrical Connection	48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (0.85 mm ²) Conductors & 0.25 in. (6 mm) Ferrule Ends		Without Aux Switches 120 in. UL 444 Type CMP Plenum Rated Cable w/ 19 AWG (0.75 mm ²) Conductors & 0.25 in. (6 mm) Ferrule Ends With Aux Switches 48 in. UL 758 Type AWM Halogen-Free Cable w/ 18 AWG (0.85 mm ²) Conductors & 0.25 in. (6 mm) Ferrule Ends		48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (0.85 mm ²) Conductors & 0.25 in. (6 mm) Ferrule Ends
		Integral 1/2 in. (13 mm) Threaded Conduit Connector(s)				
	Conduit Connections	Integral 1/2 in. (13 mm) Threaded Conduit Connector(s)				

Spring Return ST2 Ball Valve Actuators - VAS-27 Series Continued



Technical Specifications - VAS-27 Series Actuator - Continued					
Type	Actuator Models	VAS24-27-(A)	VAS24-27-T-(A)	VAMS24-27-(A)	VASU20-27-(A)
			Spring Return On/Off with optional Auxillary Switches (-A)	Spring Return On/Off & Floating with optional Auxillary Switches (-A)	Spring Return Modulating with optional Auxillary Switches (-A)
Operation	Spring Return	Direction is Selectable with Mounting Position of Actuator: Actuator Side A is away from damper or valve: CCW Spring Return Actuator Side B is away from damper or valve: CW Spring Return			
	Rotation Range	Maximum Full Stroke: 95° - (Adjustable Stop: 35 to 95° Maximum Position (Modulating Only))			
	Electric Stall Detection	Protects from overload at all angles of rotation			
	Runtime for 90° of Rotation	Power On (Running) 53 to 71 Seconds for 0 to 27 lb-in. (3 N-m) Load, at Room Temperature 60 Seconds Nominal at Full Rated Load (0.25 rpm) Power Off (Returning) 19 to 23 Seconds for 0 to 27 lb-in. (3 N-m) Load, at Room Temperature 22 Seconds Nominal at Full Rated Load 28 Seconds Maximum with 27 lb-in. (3 N-m) Load at -22°F (-30°C))	Power On (Running) 150 Seconds Constant for 0 to 27 lb-in. (3 N-m) Load, at All Operating Conditions Power Off (Returning) 12 to 17 Seconds for 0 to 27 lb-in. (3 N-m) Load, at Room Temperature 16 Seconds Nominal at Full Rated Load 22 Seconds Maximum with 27 lb-in. (3 N-m) Load at -22°F (-30°C)		Power On (Running) 24 to 28 Seconds for 0 to 27 lb-in. (3 N-m) Load, at Room Temperature 27 Seconds Nominal at Full Rated Load (0.5 rpm) Power Off (Returning) 19 to 23 Seconds for 0 to 27 lb-in. (3 N-m) Load, at Room Temperature 22 Seconds Nominal at Full Rated Load 28 Seconds Maximum with 27 lb-in. (3 N-m) Load at -22°F (-30°C)
	Cycle Life	60,000 Full Stroke Cycles with 27 lb-in. (3 N-m) Load, 1,500,000 Repositions with 27 lb-in. (3 N-m) Load			
	Mechanical Connections	Round Shafts - 1/4 in. to 1/2 in. (6 to 12 mm) Square Shafts - 1/4 in. to 5/16 in. (6 to 8 mm)			
	Enclosure	NEMA 2 (IP54) for all mounting orientations			
Environmental	Ambient Conditions (Non-Condensing)	Operating — -22 to 140°F (-30 to 60°C); 90% RH Maximum, Noncondensing Storage — -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing			
	Audible Noise Rating	Running — <36 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m) Holding — <20 dBA at a Distance of 39-13/32 in. (1 m) Returning — <51 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)	Running — <28 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m) Holding — <20 dBA at a Distance of 39-13/32 in. (1 m) Returning — <56 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)		Running — <45 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m) Holding — <20 dBA at a Distance of 39-13/32 in. (1 m) Returning — <51 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)
	Dimensions	6.38 in. x 3.23 in. x 2.26 in. (162 mm x 82 mm x 57.5 mm)			
	Weight	2.0 lb. (2.4 lb w/ Aux. Switches)			
Conditions	Agency Certifications	UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: Ed. 1, Part 2, Particular Requirements for Electric Actuators. UL Listed, CCN XAPX7, File E27734; to UL 60730-1:02-CAN/CSA: July 2002, 3rd Ed., Automatic Electrical Controls for Household and Similar Use; and CSA C22.2 No. 24-93 Temperature Indicating and Regulating Equipment CE Mark - This product is in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC.			
	Warranty	C-Tick Mark, Australia/NZ Emissions Compliant 5 Years limited from time of shipment.			

Spring Return ST2 Ball Valve Actuators - VAS-27 Series Wiring



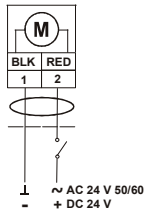
-(A) AUXILIARY SWITCH WIRING

(-A) Auxiliary Switches



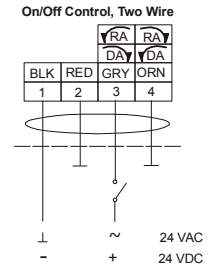
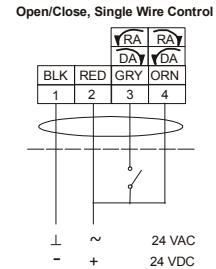
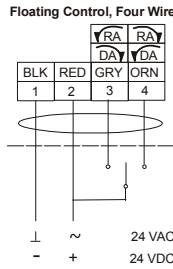
VAS24-27-(A) CABLE

On/Off



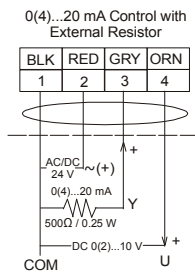
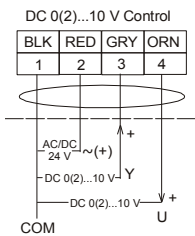
VAS24-27-T(A) CABLE

On/Off and Floating



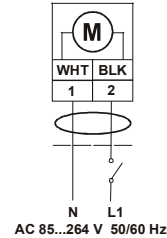
VAMS24-27-(A) CABLE

Modulating



VASU20-27-(A) CABLE

On/Off



Important - Do not install multiple VAS-27 Series actuators connected to the same mechanical load. Master-Slave application of DS-27 Series Actuators requires that each actuator be connected to independent loads.

Warning - These actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

Disclaimer - 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.

Non-Spring Return ST2 Ball Valve Actuators - VA24-35 Series

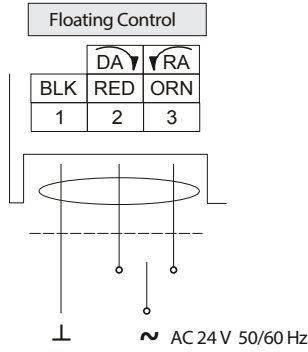


Technical Specifications - VA24-35 Series Actuator				
Type	Actuator Models	VA24-35-P	VA24-35-PTO	VAM24-35-P
			Non-Spring Return - Floating & On/Off (relay required)	Non-Spring Return - Floating with Time-Out & On/Off (relay required)
	Torque	35 lb-in. (4 Nm)		
Electrical	Operating Voltage	24 VAC +25%/-20% at 50/60 Hz		
	Power Consumption	2.3 VA	3.0 VA	2.9 VA
	Input Signal	24 VAC +25%/-20% at 50/60 Hz	24 VAC +25%/-20% at 50/60 Hz, with Time-Out	0(2) to 10 VDC or 0(4) to 20 mA with field-furnished 500 ohm resistor
	Input Impedance	N/A		200k Ohms
	Equipment Rating	Class 2 or Safety Extra-Low Voltage (SELV)		
	Feedback Signal	N/A		0 to 10 VDC or 2 to 10 VDC for 90° (10 VDC at 1 mA), Corresponds to input signal span selection
	Electrical Connection	48 in. (1.2 m) UL 444 Type CMP Plenum Rated cable with 19 AWG (0.75 mm ²) conductors and 1/4 in. (6 mm) ferrule ends		
Operation	Manual Override	External Push Button		
	Time Out feature	N/A	Electronic stall detection ensures higher reliability by deactivating the actuator motor when a stall condition is detected	N/A
	Runtime for 90° of Rotation	60 Seconds at 60 Hz / 72 Seconds at 50 Hz		
	Rotation Range	93° ±3°, CW or CCW		
	Cycle Life	100,000 Full Stroke Cycles; 2,500,000 repositions at rated running torque		
	Mechanical Connections	Round Shafts - Up to 1/2 in. (13 mm) Square Shafts - Up to 3/8 in. (10 mm)		
Environmental	Enclosure	NEMA 2 (IP42)		
	Ambient Conditions (Non-Condensing)	Operating — -4 to 140°F (-20 to 60°C); 90% RH Max. Storage — -20 to 150°F (-29 to 66°C); 90% RH Max.		
	Audible Noise Rating	35 dBA Nominal at 39-13/32 in. (1 meter)		
	Dimensions	5.16 x 2.81 x 2.06 in. (131 x 71 x 52 mm)		
	Weight	1.25 lb (0.55 kg)		
Conditions	Agency Certifications	United States/Canada - United States UL Listed, File E27734, CCN XAPX (United States) and XAPX7 (Canada) Actuator Housing is Plenum Rated per CSA C22.2 No. 236/UL 1995, Heating and Cooling Equipment Europe - CE Mark - Product is in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC Australia/New Zealand - C-Tick Mark Australia/NZ Emissions Compliant		
	Warranty	5 Years limited from time of shipment.		

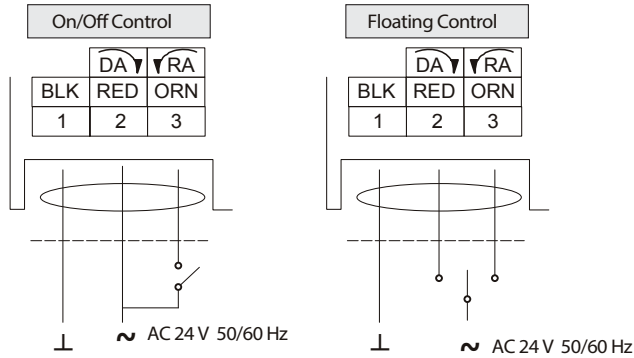
Non-Spring Return ST2 Ball Valve Actuators - VA24-35 Series Wiring



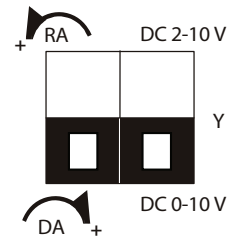
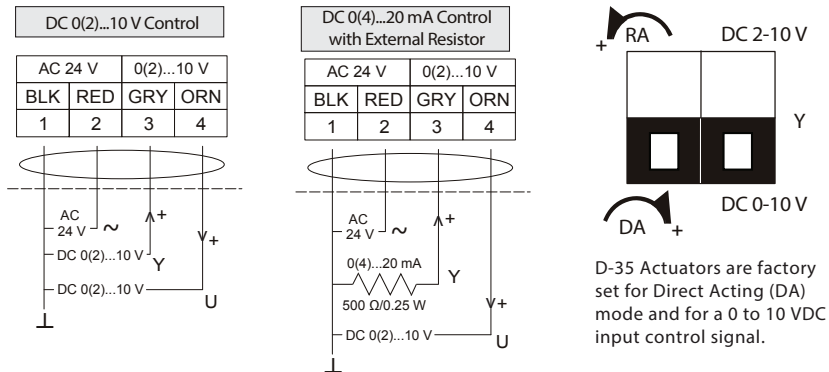
VA24-35-P PLENUM CABLE



VA24-35-PTO PLENUM CABLE



VAM24-35-P PLENUM CABLE



D-35 Actuators are factory set for Direct Acting (DA) mode and for a 0 to 10 VDC input control signal.

NOTE - To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

Disclaimer - 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.

Spring Return ST2 Ball Valve Actuators - VAS-70 Series



Technical Specifications - VAS-70 Series Actuator					
Type	Actuator Models	VAS24-70-(A)	VAS24-70-T-(A)	VAMS24-70-(A)	VAS120-70-(A)
			Spring Return On/Off with optional Auxillary Switches (-A)	Spring Return On/Off & Floating with optional Auxillary Switches (-A)	Spring Return Modulating with optional Auxillary Switches (-A)
	Torque	70 lb-in. (8 Nm)			
Electrical	Operating Voltage	24 VAC (18 to 30 V) at 50/60 Hz 24 VDC (21.6 to 28.8 V)	24 VAC (19.2 to 28.8 V) at 50/60 Hz 24 VDC (21.6 to 28.8 V)		AC 120 V (102 to 132 V) at 60 Hz
	Power Consumption	VAC - 6.1 VA Running, 1.2 VA Holding VDC - 3.5 W Running, 0.5 W Holding	VAC - 7.9 VA Running, 5.5 VA Holding VDC - 3.5 W Running, 1.9 W Holding		0.05 A Running, 0.03 A Holding
	Input Signal	N/A	N/A	0(2) to 10 VDC 0(4) to 20 mA (with 500-ohm Resistor)	N/A
	Min. Transformer Size	7 VA per Actuator	8 VA per Actuator		N/A
	Input Signal Adjustments	N/A	AC 19.2 to 28.8 V at 50/60 Hz or DC 24 V +20%/-10%, Class 2 or SELV, Minimum Pulse Width: 500 ms	Factory Setting - DC 0 to 10 V, CW Rotation with Signal Increase Selectable DC 0 (2) to 10 V or 0 (4) to 20 mA with Field-Furnished 500 ohm 0.25 W Min. Resistor Switch Selectable - Direct or Reverse Action with Signal Increase	N/A
	Control Input Impedance	N/A	3000 Ohms	100k Ohms, Current Input: 500 Ohms with Field Furnished 500 Ohm Resistor	N/A
	Feedback Signal	N/A		DC 0 (2) to 10 V for Desired Rotation Range up to 95°. Corresponds to Rotation Limits, 0.5 mA at 10 V Maximum	N/A
	Auxillary Switch Rating	(-A) Models) Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold over Silver Contacts: AC 24 V, 50 VA Pilot Duty			(-A) Models) Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold over Silver Contacts: AC 120 V, 5.8 A Resistive, 1/4 hp, 275 VA Pilot Duty
	Equipment Rating	Class 2 or Safety Extra-Low Voltage (SELV)			N/A
	Electrical Connection	48 in. UL 758 Type AWM Halogen-Free Cable w/ 18 AWG (0.85 mm ²) Conductors & 0.25 in. (6 mm) Ferrule Ends			
Conduit Connections	Integral Connectors for 3/8 in. (10 mm) Flexible Metal Conduit				
Manual Override	Manual Override Crank				
Operation	Spring Return	Direction is Selectable with Mounting Position of Actuator: Actuator Side A is away from damper or valve: CCW Spring Return Actuator Side B is away from damper or valve: CW Spring Return			
	Rotation Range	Maximum Full Stroke: 95° - (Adjustable Stop: 35 to 95° Maximum Position (Modulating Only))			
	Electric Stall Detection	Protects from overload at all angles of rotation			

Spring Return ST2 Ball Valve Actuators - VAS-70 Series Continued

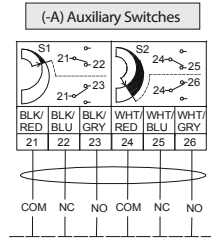


Technical Specifications - VAS-70 Series Actuator - Continued					
Type	Actuator Models	VAS24-70-(A)	VAS24-70-T-(A)	VAMS24-70-(A)	VAS120-70-(A)
			Spring Return On/Off with optional Auxillary Switches (-A)	Spring Return On/Off & Floating with optional Auxillary Switches (-A)	Spring Return Modulating with optional Auxillary Switches (-A)
Operation	Runtime for 90° of Rotation	Power On (Running) 55 to 71 Seconds for 0 to 70 lb-in (8 N-m) Load, at All Operating Conditions 60 Seconds Nominal at Full Rated Load (0.25 rpm) Power Off (Spring Returning) 13 to 26 Seconds for 0 to 70 lb-in (8 N-m) Load, at Room Temperature 21 Seconds Nominal at Full Rated Load, 39 Seconds Maximum with 70 lb-in (8 N-m) Load at -4°F (-20°C) 108 Seconds Maximum with 53 lb-in (6 N-m) Load at -40°F (-40°C)	Power On (Running) 150 Seconds Constant for 0 to 70 lb-in (8 N-m) Load, At All Operating Conditions Power Off (Spring Running) 17 to 25 Seconds for 0 to 70 lb-in (8 N-m) Load, at Room Temperature 22 Seconds Nominal at Full Rated Load, 94 Seconds Maximum with 70 lb-in (8 N-m) Load, at -40°F (-40°C)		Power On (Running) 55 to 71 Seconds for 0 to 70 lb-in (8 N-m) Load, at All Operating Conditions 60 Seconds Nominal at Full Rated Load (0.25 rpm) Power Off (Spring Returning) 13 to 26 Seconds for 0 to 70 lb-in (8 N-m) Load, at Room Temperature 21 Seconds Nominal at Full Rated Load, 39 Seconds Maximum with 70 lb-in (8 N-m) Load at -4°F (-20°C) 108 Seconds Maximum with 53 lb-in (6 N-m) Load at -40°F (-40°C)
	Cycle Life	60,000 Full Stroke Cycles with 70 lb-in. (8 N-m) Load, 1,500,000 Repositions with 70 lb-in. (8 N-m) Load			
	Mechanical Connections	Round Shafts - 5/16 to 5/8 in. (8 to 16 mm) Square Shafts - 1/4 to 1/2 in. (6 to 12 mm)			
	Enclosure	NEMA 2 (IP54) for all mounting orientations			N/A
Environmental	Ambient Conditions (Non-Condensing)	Operating — -40° to 140°F (-40° to 60°C); 90% RH Maximum, Non-condensing Storage — -40° to 185°F (-40° to 85°C); 95% RH Maximum, Non-condensing			
	Audible Noise Rating	Running — < 47 dBA at 70 lb-in (8 N-m) Load, at a Distance of 39-13/32 in. (1 m) Holding — < 20 dBA at a Distance of 39-13/32 in. (1 m) Returning — <52 dBA at 70 lb-in. (8 N-m) Load - (All at a Distance of 39-13/32 in. (1 m))	Running — 35 dBA at 70 lb-in (8 N-m) Load, at a Distance of 39-13/32 in. (1 m) Holding — < 20 dBA at a Distance of 39-13/32 in. (1 m) Returning — <52 dBA at 70 lb-in. (8 N-m) Load - (All at a Distance of 39-13/32 in. (1 m))		Running — < 47 dBA at 70 lb-in (8 N-m) Load, at a Distance of 39-13/32 in. (1 m) Holding — < 20 dBA at a Distance of 39-13/32 in. (1 m) Returning — <52 dBA at 70 lb-in. (8 N-m) Load - (All at a Distance of 39-13/32 in. (1 m))
	Dimensions	6.33" (L) x 3.90" (W) x 2.26" (H)			
	Weight	3.5 lb. (3.9 lb w/ Aux. Switches)			4.2 lb.
Conditions	Agency Certifications	UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: Ed. 1, Part 2, Particular Requirements for Electric Actuators. UL Listed, CCN XAPX7, File E27734; to UL 60730-1:02-CAN/CSA: July 2002, 3rd Ed., Automatic Electrical Controls for Household and Similar Use; and CSA C22.2 No. 24-93 Temperature Indicating and Regulating Equipment CE Mark - This product is in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC. RCM Mark, Australia/NZ Emissions Compliant.			
	Warranty	5 Years limited from time of shipment.			

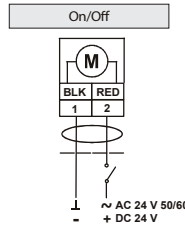
Spring Return ST2 Ball Valve Actuators - VAS-70 Series Wiring



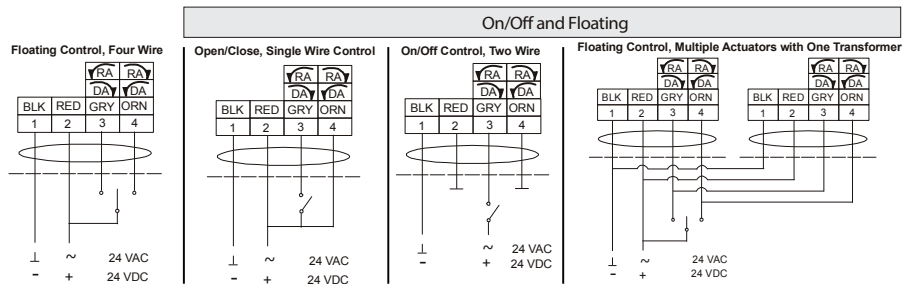
-(A) AUXILIARY SWITCH WIRING



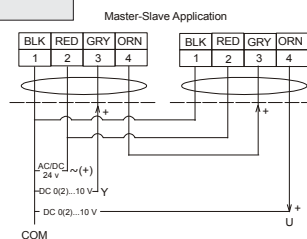
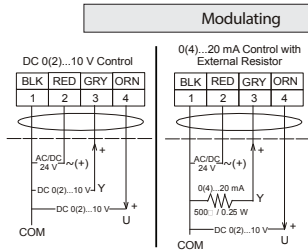
VAS24-70-(A) STANDARD CABLE



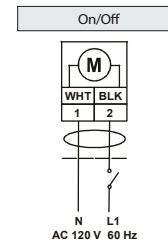
VAS24-70-T(A) STANDARD CABLE



VAMS24-70-(A) STANDARD CABLE



VAS120-70-(A) STANDARD CABLE



IMPORTANT: Do not install multiple VAMS series actuators connected to the same mechanical load. Master-slave application of DMS or VAMS series actuators requires that each actuator be connected to independent loads.

Warning - These actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

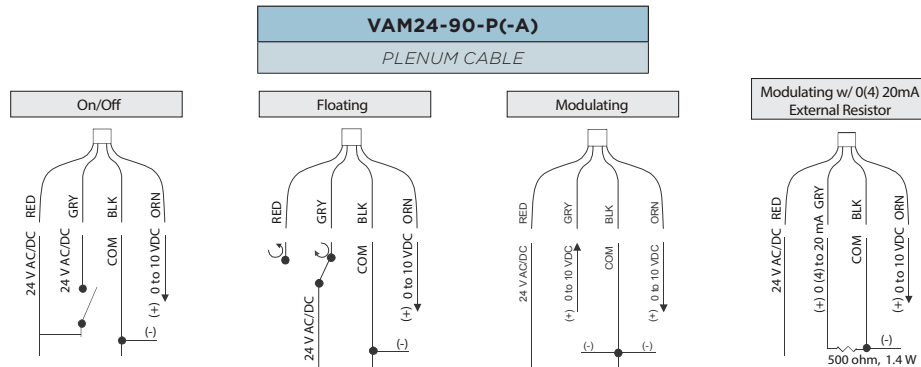
To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

Disclaimer - 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.

Non-Spring Return ST2 Ball Valve Actuators - VAM24-90 Series



Technical Specifications - VAM24-90 Series Actuator				
Type	Actuator Models	VAM24-90-P Non-Spring Return - On/Off, Floating & Modulating	VAM24-90-P-A Non-Spring Return - On/Off, Floating & Modulating with Auxillary Switches (-A)	
		Torque	90 lb-in. (10 Nm)	
Electrical	Operating Voltage	24 VAC ±20% at 50/60 Hz 24 VDC ±10%, 1.3 W running.		
	Power Consumption	4.7 VA		
	Transformer Sizing Requirements	≥6.5 VA		
	Input Signal Adjustments	AC 19.2 V to 28.8 V at 50/60 Hz or DC 24 V ±10%	DC 0 (2) to 10 V or 0 (4) to 20 mA with field furnished 500 ohm 1/4 W resistor Offset: DC 0 V to 10 V / SPAN: DC 2 V to 10 V	
	Control Impedance	4.7k Ohm	100k Ohm	
	Equipment Rating	Class 2 or Safety Extra-Low Voltage (SELV)		
	Feedback Signal	N/A	0 to 10 VDC or 2 to 10 VDC, (with adjustable Span)	
	Electrical Connection	120 in. (3.05 m) UL 444 type CMP plenum rated cable with 19 AWG cable (0.75 mm ²) conductors and 0.25 in. (6 mm) ferrule ends		
	Conduit Connection	1/2 in. NPSM (13 mm) threaded conduit connectors with optional conduit connector		
	Operation	Manual Override	External Push Button	
Time Out Feature		Electronic stall detection ensures higher reliability by deactivating the actuator motor when a stall condition is detected		
Runtime for 90° of Rotation		35 seconds, constant for all operating conditions 35 seconds, Runtime Auto-Calibration		
Rotation Range		Mechanically limited 35° to 95° (±3°) in 5° increments		
Cycle Life		100,000 Full Stroke Cycles; 2,500,000 repositions at rated running torque		
Mechanical Connections		Round Shafts - Up to 1/2 in. (13 mm) Square Shafts - Up to 3/8 in. (10 mm)		
Environmental	Enclosure	NEMA 5/IP54		
	Ambient Conditions (Non-Condensing)	Operating — -22 to 140°F (-30 to 60°C); 95% RH Max. Storage — -40 to 185°F (-40 to 85°C); 95% RH Max.		
	Audible Noise Rating	<35 dBA Nominal at 39-13/32 in. (1 meter)		
	Dimensions	6.7 x 3.1 x 2.4 in. (169 x 81 x 62 mm)		
	Weight	2 lb (0.9 kg)		
Conditions	Agency Certifications	United States - UL Listed, CCN XAPX, File E27734; to UL 60730-1: Automatic Electrical Controls for Household and Similar Use, Part 1; and UL 60730-2-14: Part 2, Particular Requirements for Electric Actuators. Plenum Rated (UL 2043). Suitable for use in Other Environmental Air Space (Plenum) in accordance with section 300.22 (c) of the National Electrical Code. Canada - UL Listed, CCN XAPX7, File E27734; to CAN/CSA E60730-1:02: Automatic Electrical Controls for Household and Similar Use, Part 1; and CAN/CSA-E60730-2-14, Particular Requirements for Electric Actuators. Europe - CE Mark—Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive and the Low Voltage Directive. Australia/New Zealand - RCM Mark, Australia/NZ Emissions Compliant		
	Warranty	5 Years limited from time of shipment.		



Warning - These actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

Disclaimer - 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.

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