



## D(M)S-70 Series — Submittal/Technical Data

70 lb-in. — Spring Return — On/Off, Floating & Modulating — Auxiliary Switches

Technical Specifications - D(M)S-70 Series Actuator						
Type	Actuator Models	DS24-70-(A)	DS24-70-T-(A)	DMS24-70-(A)	DS120-70-(A)	
		Spring Return On/Off with optional Auxiliary Switches (-A)	Spring Return On/Off & Floating with optional Auxiliary Switches (-A)	Spring Return Modulating with optional Auxiliary Switches (-A)	Spring Return On/Off with optional Auxiliary 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	VAC - 7.9 VA Running, 5.5 VA Holding		0.05 A Running, 0.03 A Holding	
		VDC - 3.5 W Running, 0.5 W Holding	VDC - 3.5 W Running, 1.9 W 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	
	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	
	Auxiliary 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 mm²) 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				

# D(M)S-70 Series — Submittal/Technical Data

Technical Specifications - D(M)S-70 Series Actuator - Continued					
Type	Actuator Models	DS24-70-(A)	DS24-70-T-(A)	DMS24-70-(A)	DS120-70-(A)
		Spring Return On/Off with optional Auxiliary Switches (-A)	Spring Return On/Off & Floating with optional Auxiliary Switches (-A)	Spring Return Modulating with optional Auxiliary Switches (-A)	Spring Return On/Off with optional Auxiliary 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 Return-ing) 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 Return-ing) 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			
Environmental	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
	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)			
Conditions	Weight	3.5 lb. (3.9 lb w/ Aux. Switches)			4.2 lb.
	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.			

IMPORTANT: Do not install multiple DMS 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).

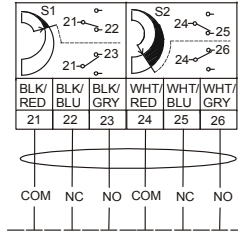
Disclaimer - The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.

## Wiring

### -(A)

#### AUXILIARY SWITCH WIRING

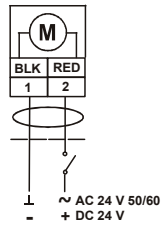
#### (-A) Auxiliary Switches



### DS24-70-(A)

#### STANDARD CABLE

#### On/Off

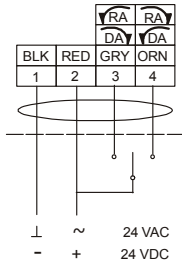


### DS24-70-T(A)

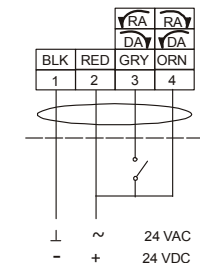
#### STANDARD CABLE

#### On/Off and Floating

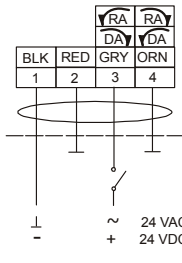
#### Floating Control, Four Wire



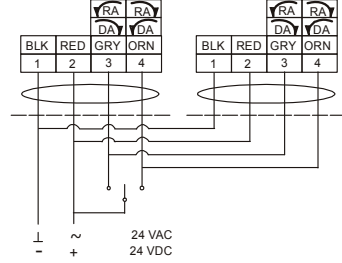
#### Open/Close, Single Wire Control



#### On/Off Control, Two Wire



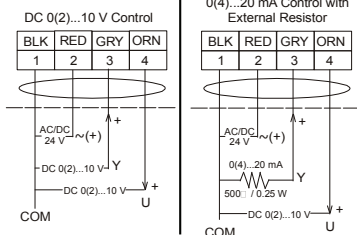
#### Floating Control, Multiple Actuators with One Transformer



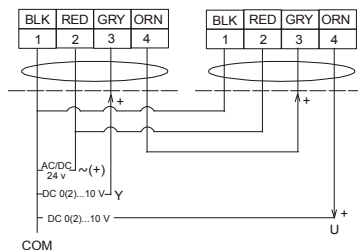
### DMS24-70-(A)

#### STANDARD CABLE

#### Modulating



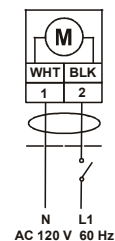
#### Master-Slave Application



### DS120-70-(A)

#### STANDARD CABLE

#### On/Off



## Dimensions

