

# Spring Return Commercial Actuators - DS-180 Series



Technical Specifications - DS-180 Series Actuator					
Type	Actuator Models	DS24-180-(A)	DS24-180-T-(A)	DMS24-180-(A)	DS120-180-(A)
		Spring Return On/Off Opt. Auxillary Switches (-A)	Spring Return On/Off & Floating Opt. Auxillary Switches (-A)	Spring Return Modulating Opt. Auxillary Switches (-A)	Spring Return On/Off Opt. Auxillary Switches (-A)
	Torque	177 lb-in. (20 Nm)			
Electrical	Operating Voltage	24 VAC (19.2 to 30 V) at 50/60 Hz 24 VDC (21.6 to 26.4 V)			AC 120 V (102 to 132 V) at 60 Hz
	Power Consumption	VAC - 24.6 VA Running, 7.7 VA Holding	VAC - 15.5 VA Running, 7.7 VA Holding		0.25 A Running, 0.13 A Holding
		VDC - 17.6 W Running, 2.8 W Holding	VDC - 6.7 W Running, 2.9 W Holding		
	Min. Transformer Size	25 VA per Actuator	20 VA per Actuator		N/A
	Control Input Impedance	N/A		>100K Ohms	N/A
	Feedback Signal	N/A		0 (2) to 10 VDC for Desired Rotation Range up to 90°; Corresponds to Rotation Limits, 1 mA Maximum	N/A
	Auxillary Switch Rating (-A Models Only)	Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold Flash Contacts: AC 24 V, 50 VA Pilot Duty			Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold Flash Contacts: AC 120 V, 5.8 A Resistive, 1/4 hp, 275 VA Pilot Duty
	Equipment Rating	Class 2			N/A
	Transformer Sizing	25 VA Minimum per Actuator	20 VA Minimum per Actuator		25 VA Minimum per Actuator
	Electrical Connection	48 in. (1.2 m) Halogen-Free Cable with 18 AWG (0.75 mm <sup>2</sup> ) Wire Leads			
Conduit Connections	Integral Connectors for 3/8 in. Flexible Metal Conduit				
Manual Override	Manual override crank				
Spring Return	Direction is Selectable with Mounting Position of Actuator Side A - Actuator Face Away for CCW Spring Return Side B - Actuator Face Away for CW Spring Return				
Rotation Range	Adjustable from 30 to 90° CW or CCW with Optional Adjustable Stop Kit; Mechanically Limited to 90°				
Operation	Runtime for 90° of Rotation	Power On (Running) 24 to 57 Seconds for 0 to 177 lb-in (0 to 20 N-m) at All Operat- ing Conditions; 35 Seconds Nominal at Full Rated Load Power Off (Returning) 11 to 15 Seconds for 0 to 177 lb-in (0 to 20 N-m) at Room Temperature; 35 Seconds Maximum for 0 to 177 lb-in (0 to 20 N-m) at -22°F (-30°C) 130 Seconds Maximum for 0 to 177 lb-in (0 to 20 N-m) at -40°F (-40°C)	Power On (Running) 150 Seconds for 0 to 177 lb-in (0 to 20 N-m) at All Operating Conditions; Independent of Load Power Off (Returning) 20 Seconds for 0 to 177 lb-in (0 to 20 N-m) at Room Temperature		Power On (Running) 24 to 57 Seconds for 0 to 177 lb-in (0 to 20 N-m) at All Operat- ing Conditions; 35 Seconds Nominal at Full Rated Load Power Off (Returning) 11 to 15 Seconds for 0 to 177 lb-in (0 to 20 N-m) at Room Temperature; 35 Seconds Maximum for 0 to 177 lb-in (0 to 20 N-m) at -22°F (-30°C) 130 Seconds Maximum for 0 to 177 lb-in (0 to 20 N-m) at -40°F (-40°C)
		Electric Stall Detection	Protects from overload at all angles of rotation		
	Cycle Life	60,000 Full stroke cycles (1,500,000 repositions)			
	Mechanical Connections	Round Shafts - 1/2 to 3/4 in. or 12 to 19 mm Square Shafts - 3/8 and 1/2 in. or 10, 12, and 14 mm			

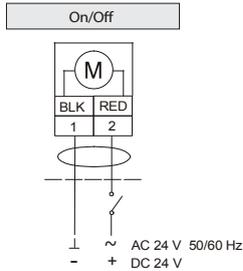
# Spring Return Commercial Actuators - DS-180 Series Continued



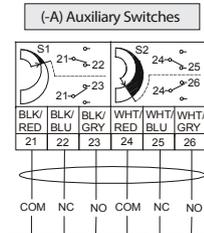
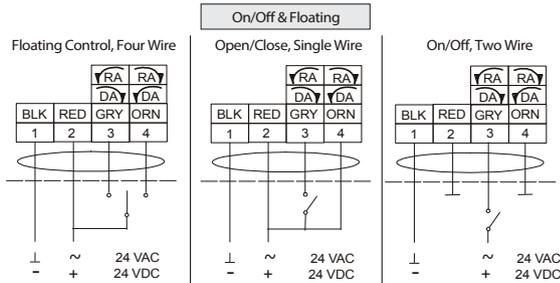
Technical Specifications - DS-180 Series Actuator					
Type	Actuator Models	DS24-180-(A)	DS24-180-T-(A)	DMS24-180-(A)	DS120-140-(A)
		Spring Return On/Off Opt. Auxillary Switches (-A)	Spring Return On/Off & Floating Opt. Auxillary Switches (-A)	Spring Return Modulating Opt. Auxillary Switches (-A)	Spring Return On/Off Opt. Auxillary Switches (-A)
Environmental	Enclosure	NEMA 2, IP54 - for all mounting directions			
	Ambient Conditions (Non-Condensing)	<b>Operating</b> — 40 to 131°F (-40 to 55°C); 90% RH Maximum, Noncondensing <b>Storage</b> — -85 to 185°F (-65 to 85°C); 95% RH Maximum, Noncondensing			
	Audible Noise Rating	<b>Running</b> < 66 dBA at 39-13/32 in. (1 m) <b>Holding</b> < 18 dBA at 39-13/32 in. (1 m) <b>Returning</b> < 66 dBA at 39-13/32 in. (1 m)	<b>Running</b> < 40 dBA at 39-13/32 in. (1 m) <b>Holding</b> < 20 dBA at 39-13/32 in. (1 m) <b>Returning</b> < 55 dBA at 39-13/32 in. (1 m)	<b>Running</b> < 66 dBA at 39-13/32 in. (1 m) <b>Holding</b> < 18 dBA at 39-13/32 in. (1 m) <b>Returning</b> < 66 dBA at 39-13/32 in. (1 m)	
	Dimensions	10" (L) x 4" (W) x 3-3/16" (H)			
	Weight	6.4 lb (2.9 kg)		7.6 lb (3.5 kg)	
Conditions	Agency Certifications	UL Listed, CCN XAPX, File E27734; to UL 60730-1, Automatic Controls for Household and Similar Use; and UL 60730-2-14 Part 2, Particular Requirements for Electric Actuators. UL Listed, CCN XAPX7, File E27734; to CAN/CSA E60730-1, Automatic Controls for Household and Similar Use; and CAN/CSA E60730-2-14 Part 2, Particular Requirements for Electric Actuators CE Mark - Johnson Controls, Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive and Low Voltage Directive. RCM Mark, Australia/NZ Emissions Compliant			
	Warranty	5 Years limited from time of shipment.			

## -(A) AUXILIARY SWITCH WIRING

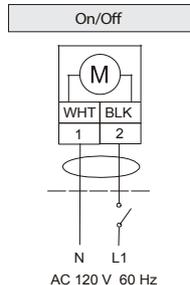
### DS24-180-(A) STANDARD CABLE



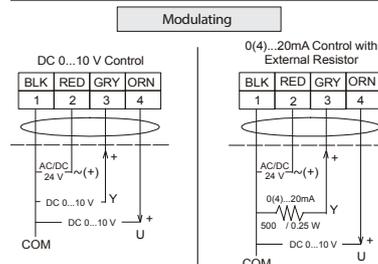
### DS24-180-T-(A) STANDARD CABLE



### DS120-180-(A) STANDARD CABLE



### DMS24-180-(A) STANDARD CABLE



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.