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DAFx.20(S) Series ON/OFF Spring Return Actuators

Application

The JOVENTA SPRING RETURN electric damper-actuator series has been specially developed for the motorized operation of safety air dampers, (anti-icing) in air conditioning systems, smoke evacuation dampers and sealing dampers.

When the control signal is applied, the actuator drives the damper to the operational position, while evenly tensioning the integrated spring. After a power failure the stored energy in the spring immediately brings the damper to the safety position.

Manual operation is automatically cancelled when the actuator is in electrical operation. The compact design and universal adapter fitted with limitation of rotation angle make this JOVENTA actuator highly versatile.

Features

- ON/OFF control
- Up to 5 actuators in parallel operation possible
- Electrical connection with halogen-free cable
- Simple direct mounting with universal adapter on Ø 12 mm to 19 mm shaft or 10-12-14 mm square shaft.
 An optional M9220-600 Jackshaft Coupler Kit is available for 19 to 27 mm round shafts, or 16, 18, and 19 mm square shafts
- 80 mm min shaft length
- Tandem Operation possible
- Limitation of rotation angle
- Manual positioning with crank handle
- 2 auxiliary switches, 1 adjustable (See back page for settings)
- Automatic shut-off at end position (overload switch)
- Energy saving at end positions
- Actuators available with 1 m halogen-free cable
- Devices meet CE requirements



Technical Specifications

Torque	Technical Specification		DAFO 00(0)
Damper area* 4.0 m² 4.0 m² 2457 s	Actuator	DAF1.20(S)	DAF2.20(S)
Running time Motor 2457 s			-
Running time Spring return			
Supply Voltage		2457 s	
Frequency		1115 s	
Power Consumption	Supply Voltage	AC/DC 24V	AC 230 V
- Running AC - Running DC - At end position AC - At end position DC - At end position D	Frequency	50-60 Hz	
- Running DC - At end position AC - At end position DC - 2.6 W Dimensioning Control signal - Ronne - Ronne - Ronne - Ronne - Ronne - Ronne - Limitation - Working range - Limitation - Stating range - Storage temperature - Humidity - Storage temperature - Humidity - Service - Ronne	Power Consumption		
- At end position AC - At end position DC Dimensioning Control signal Position signal Angle of rotation - Working range - Limitation Auxiliary Switches - S1 setting range - S2 setting range - Motor - Switches - Working range - Motor - Switches - Working range - Motor - Suitches - Working range - Motor - Suitches - Working range - Motor - Switches - Working range - Motor - Switches - Working range - Motor - Suitches - Working range - Motor - Suitches - Working range - Motor - Suitches - Motor - Switches - Working range - Motor - Suitches - Motor - Switches - Motor	- Running AC	26 VA	0.15 A
- At end position DC Dimensioning Control signal Position signal Angle of rotation - Working range - Limitation - St setting range - St setting range - St setting range - Switches - Motor - Switches Lifetime Noise level Protection class Noise level Protection class Degree of protection Ambient conditions - Operating temperature - Humidity Service Weight - Mechanics - Electronics - Electronics - Electronics - EMC Emissions O None ON/OFF (2-Point) ON/OF (2-Point	- Running DC	15.6 W	
Dimensioning Control signal ON/OFF (2-Point)	- At end position AC	9.3 VA	0.09 A
Control signal ON/OFF (2-Point) Position signal None Angle of rotation - Working range - Limitation 90°	- At end position DC	2.6 W	
Position signal	Dimensioning		
Angle of rotation - Working range - Limitation Auxiliary Switches - S1 setting range - S2 setting range - Motor - Switches - Motor - Switches Lifetime Noise level Protection class Degree of protection Ambient conditions - Operating temperature - Humidity Service Weight Service Weight Auxiliary Switches 90° 0°30° and 90°60° 3(1.5)A, AC 230 V 10° fix - 2.30 dijustable 25°90° adjustable 1.2 m halogen-free 2-wire 1-2 6-wire 21-22-23-24-25-26 60'000 Rotations 10 He 54 Mode of action Type1 Ambient conditions - Operating temperature - 40+55 °C / IEC 721-3-3 - 40+55 °C / IEC 721-3-3 - 595% r.F. no condensed Service Weight Service Weight Degree of protection Ambient conditions - Operating temperature - 65+85 °C / IEC 721-3-2 - Humidity - 595% r.F. no condensed CE, UL, CSA - Mechanics - Electronics - EN 60 730-2-14	Control signal	ON/OFF (2-Point)	
- Working range	Position signal	None	
- Limitation 0°30° and 90°60° Auxiliary Switches 3(1.5)A, AC 230 V - S1 setting range 25°90° adjustable Cable 1.2 m halogen-free - Motor 2-wire 1-2 - Switches 60'000 Rotations Noise level 66 dB (A) Protection class II Degree of protection IP 54 Mode of action Type1 Ambient conditions - Operating temperature -65+85 °C / IEC 721-3-3 - Humidity 595% r.F. no condensed Service Maintenance-free Weight 2.9 kg 3.5 Kg Standards CE, UL, CSA - Mechanics - Electronics - Electronics - Electronics - EMC Emissions - Storage tempsions EN 50 081-1:92 / IEC 61000-6-3:96	Angle of rotation		
Auxiliary Switches - \$1 setting range - \$2 setting range - \$2 setting range Cable - Motor - Switches - Witches - Switches - Switches - Witches - Switches	- Working range	90°	
- \$1 setting range - \$2 setting range - \$2 setting range - \$2 setting range - \$3 setting range - \$4 setting	- Limitation	0°30° and 90°60°	
- \$2 setting range Cable 1.2 m halogen-free 2-wire 1-2 - Switches 6-wire 21-22-23-24-25-26 Lifetime Noise level Protection class Degree of protection Mode of action Ambient conditions - Operating temperature - Storage temperature - Humidity Service Weight 2.9 kg 3.5 Kg Standards - Mechanics - Electronics - Electronics - EMC Emissions 1.2 m halogen-free 2-wire 1-2 - 2-wire 1-2 - 2- 2-2-23-24-25-26 60'000 Rotations 10 11 11 12 14 15 16 17 17 18 18 19 19 10 11 11 11 12 13 14 15 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	Auxiliary Switches	3(1.5)A, AC 230 V	
Cable	- S1 setting range	10° fix	
- Motor - Switches - S	- S2 setting range	25°90° adjustable	
- Switches 6-wire 21-22-23-24-25-26 Lifetime 60'000 Rotations Noise level 66 dB (A) Protection class II Degree of protection Type1 Ambient conditions - Operating temperature - Storage temperature - Humidity 595% r.F. no condensed Service Maintenance-free Weight 2.9 kg 3.5 Kg Standards CE, UL, CSA - Mechanics - Electronics - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96		· ·	
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Noise level 66 dB (A) Protection class II Degree of protection IP 54 Mode of action Type1 Ambient conditions -40+55 °C / IEC 721-3-3 - Operating temperature -65+85 °C / IEC 721-3-2 - Humidity 595% r.F. no condensed Service Maintenance-free Weight 2.9 kg 3.5 Kg Standards CE, UL, CSA - Mechanics EN 60 529 / EN 60 730-2-14 - Electronics EN 60 730-2-14 - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96			
Protection class II Degree of protection IP 54 Mode of action Type1 Ambient conditions - Operating temperature - Storage temperature - Humidity 595% r.F. no condensed Service Maintenance-free Weight 2.9 kg 3.5 Kg Standards CE, UL, CSA - Mechanics - Electronics - Electronics - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96			
Degree of protection IP 54 Mode of action Type1 Ambient conditions - Operating temperature -40+55 °C / IEC 721-3-3 - Storage temperature - Humidity -65+85 °C / IEC 721-3-2 Service Maintenance-free Weight 2.9 kg 3.5 Kg Standards CE, UL, CSA - Mechanics - Electronics - Electronics EN 60 529 / EN 60 730-2-14 - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96			
Mode of action Type1 Ambient conditions - Operating temperature -40+55 °C / IEC 721-3-3 - Storage temperature - Humidity -65+85 °C / IEC 721-3-2 Service Maintenance-free Weight 2.9 kg 3.5 Kg Standards CE, UL, CSA - Mechanics - Electronics EN 60 529 / EN 60 730-2-14 - Electronics - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96			
Ambient conditions - Operating temperature - Storage temperature - Humidity Service Weight 2.9 kg 3.5 Kg Standards - Mechanics - Electronics - EMC Emissions - Operating temperature - 40+55 °C / IEC 721-3-3 - 40+55 °C / IEC 721-3-3 - 65+85 °C / IEC 721-3-2 - 65+85 °C / IEC 80+85 °C / IEC 80.	•		
- Operating temperature - Storage temperature - Humidity Service Weight - Mechanics - Electronics - EMC Emissions - 40+55 °C / IEC 721-3-3 - 40+55 °C / IEC 721-3-3 - 40+55 °C / IEC 721-3-3 - 65+85 °C / IEC 721-3-3 - Mechanics - 65+85 °C / IEC 721-3-3 - Mechanics - Maintenance-free 2.9 kg 3.5 Kg CE, UL, CSA - Nechanics - EN 60 529 / EN 60 730-2-14 - EN 60 730-2-14 - EN 60 730-2-14 - EN 60 730-2-14		rype1	
temperature -40+55 °C / IEC 721-3-3 - Storage temperature -65+85 °C / IEC 721-3-2 - Humidity 595% r.F. no condensed Service Maintenance-free Weight 2.9 kg 3.5 Kg Standards CE, UL, CSA - Mechanics EN 60 529 / EN 60 730-2-14 - Electronics EN 60 730-2-14 - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96			
- Humidity 595% r.F. no condensed Service Maintenance-free Weight 2.9 kg 3.5 Kg Standards CE, UL, CSA - Mechanics EN 60 529 / EN 60 730-2-14 - Electronics EN 60 730-2-14 - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96		−40+55 °C / IEC 721-3-3	
Service Maintenance-free Weight 2.9 kg 3.5 Kg Standards CE, UL, CSA - Mechanics EN 60 529 / EN 60 730-2-14 - Electronics EN 60 730-2-14 - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96	- Storage temperature	−65+85 °C / IEC 721-3-2	
Weight 2.9 kg 3.5 Kg Standards CE, UL, CSA - Mechanics EN 60 529 / EN 60 730-2-14 - Electronics EN 60 730-2-14 - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96	- Humidity	595% r.F. no condensed	
Standards CE, UL, CSA - Mechanics EN 60 529 / EN 60 730-2-14 - Electronics EN 60 730-2-14 - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96		Maintenance-free	
- Mechanics EN 60 529 / EN 60 730-2-14 - Electronics EN 60 730-2-14 - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96			
- Electronics EN 60 730-2-14 - EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96			
- EMC Emissions EN 50 081-1:92 / IEC 61000-6-3:96			
- EMC Immunity EN 50 082-2:95 / IEC 61000-6-2:99			
	- EMC Immunity	EN 50 082-2:95 /	IEC 61000-6-2:99

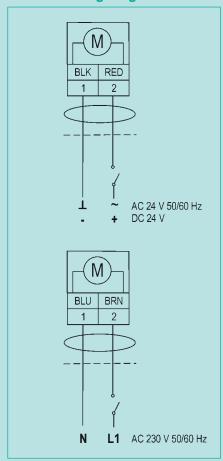
^{*}Caution: Please note damper manufacturer's information concerning the open/close torque.



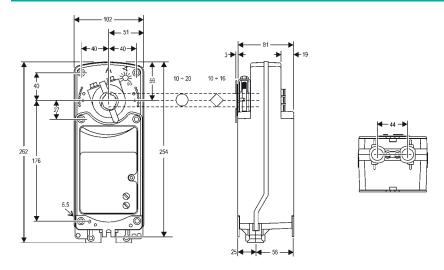
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DAFx.20(S) Series ON/OFF Spring Return Actuators

Wiring Diagrams



Dimensions in mm



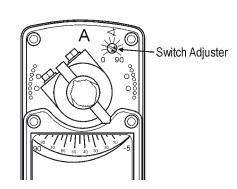
Setting the auxiliary switches

The 10S and 20S models include two integral auxiliary switches with a switch adjuster accessible on either face of the actuator.

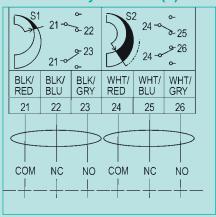
The nominal factory setting for auxiliary switch S1 is 11° closing, and the nominal factory setting for auxiliary switch S2 is 81° opening. The switch point of auxiliary switch S1 is fixed.

The switch point of auxiliary switch S2 is independently and continuously adjustable from 25° to 95°.

The switching position can be manually changed to any required position by turning the ratchet.



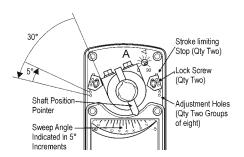
Auxiliary Switches (S)



Limitation of rotation angle

Determine the desired rotation range. If a 65° to 90° rotation range is desired, add one stroke limiting stop. If a 35° to 60° rotation range is desired, add two stroke limiting stops. Mount the stroke stop(s) in the desired position using the two M4 x10 mm selftapping screws provided. Tighten the screws to a torque of 4 Nm. Manually reposition the coupler so that the coupler set screw aligns with the nodule guide that corresponds to the

value determined in Step 2. For a rotation range of 65°, mount one stroke limiting stops in the minimum stroke position.





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DAFx.20(S) Series ON/OFF Spring Return Actuators

Ordering Codes

Codes	Descriptions
DAF1.20	20 Nm, AC/DC 24 V
DAF1.20S	20 Nm, AC/DC 24 V, with 2 auxiliary switches
DAF2.20	20 Nm, AC 230 V
DAF2.20S	20 Nm, AC 230 V, with 2 auxiliary switches

Accessories and Replacement Parts (Order Separately)

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Codes	Descriptions	
M9000-158	Tandem Mounting Kit used to Mount Two Like Models of DxF Series On/Off Electric Springback Actuators in Tandem to Deliver Twice the Torque	
M9000-200	Commissioning Tool that Provides a Control Signal to Drive 24 V On/Off, Floating, Proportional, and/or Resistive Electric Actuators	
M9000-604	Replacement Anti-Rotation Bracket Kit (with Screws) for DxF Series On/Off Electric Springback Actuators	
M9220-600	25 mm Jackshaft Coupler Kit (with Locking Clip) for Mounting DxF Series On/Off Electric Springback Actuators on Dampers with 19 to 27 mm Round Shafts, or 16, 18, and 19 mm Square Shafts	
M9220-601	Replacement Coupler Kit (with Locking Clip) for Mounting DxF Series On/Off Electric Springback Actuators on Dampers with 12 to 19 mm Round Shafts or 10, 12, and 14 mm Square Shafts	
M9220-602	Replacement Locking Clips for DxF Series On/Off Electric Springback Actuators (Five per Bag)	
M9220-603	Adjustable Stop Kit for DxF Series On/Off Electric Springback Actuators	
M9220-604	Replacement Manual Override Cranks for DxF Series On/Off Electric Springback Actuators (Five per Bag)	
M9220-610	Replacement Shaft Gripper, 10 mm Square Shaft with Locking Clip	
M9220-612	Replacement Shaft Gripper, 12 mm Square Shaft with Locking Clip	
M9220-614	Replacement Shaft Gripper, 14 mm Square Shaft with Locking Clip	