

**BELIMO CONTROLS**  
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**STANDARD SPRING RETURN DAMPER ACTUATOR PRODUCT RANGE**

		Power Supply		Power Consumption		Running Time(s)		Control Input		Control Input MFT		Position Feedback		Auxiliary Switches				
		24 VAC +/- 20%, 50/60 Hz, VDC +/- 10%	24 to 240 VAC +/- 10%/- 20%, 50/60 Hz 24 to 125 VDC +/- 10%	120 VAC +/- 10%	230 VAC +/- 10%	VA Rating, Actuator/Heater	Wattage Running/Heater (Holding)	Motor Drive (Default)	Spring Return	On/Off	2-10 VDC (Default) 4-20 mA (w/500 Ω Resistor)	0-10 V Phasecut	Honeywell Series 90, 0-135 Ω	On/Off	Floating Point Start and Span adj., Start 0.5 to 30 VDC, Span 2.5 to 32 VDC	PWM adj., 0.02 to 50.0 Seconds	2-10 VDC (Default)	VDC Variable, Start 0.5 to 8, Span 2-10 VDC
<b>EFB Series</b> 270 in-lbs [30 Nm] Approx. 66 sq. ft.	EFB24†	●			16	9.5 (4.5)	75	<20♦	●									
	EFB24-S†	●			16	9.5 (4.5)	75	<20♦	●									●
	EFB120†			● ●	21	9.5 (4.5)	75	<20♦	●									
	EFB120-S†			● ●	21	9.5 (4.5)	75	<20♦	●									●
	EFB24-SR	●			14	8 (4.5)	95	<20♦	●								●	
	EFB24-SR-S	●			14	8 (4.5)	95	<20♦	●								●	●
	EFB24-MFT†	●			16	9.5 (4.5)	60...150 (150)	<20♦	●				● ● ● ● ● ● ● ●					
	EFB24-MFT-S†	●			16	9.5 (4.5)	60...150 (150)	<20♦	●				● ● ● ● ● ● ● ●					●
<b>AFB Series</b> 180 in-lbs [20 Nm] Approx. 45 sq. ft.	AFB24†	●			7.5	5 (2.5)	<75	20♦	●									
	AFB24-S†	●			7.5	5 (2.5)	<75	20♦	●									●
	AFBUP†		●		8.5*	7 (3.5)	<75	20♦	●									
	AFBUP-S†		●		8.5*	7 (3.5)	<75	20♦	●									●
	AFB24-SR	●			8.5	5.5 (3)	95	<20♦	●								●	
	AFB24-SR-S	●			8.5	5.5 (3)	95	<20♦	●								●	●
	AFB24-PC	●			10	7.5 (3)	150	<20♦			●							
	AFB24-MFT†	●			10	7.5 (3)	70...220 (150)	<20♦	●				● ● ● ● ● ● ● ●					
	AFB24-MFT-S†	●			10	7.5 (3)	70...220 (150)	<20♦	●				● ● ● ● ● ● ● ●					●
	AFB24-MFT95†	●			10	7.5 (3)	70...220 (150)	<20♦				●						● ●
	AFB24 N4H†	●			7.5/25	5/25 (3)	<75	20♦	●									
	AFB24-S N4H†	●			7.5/25	5/25 (3)	<75	20♦	●									●
	AFBUP N4H†		●		8.5/25	7/25 (3)	<75	20♦	●									
	AFBUP-S N4H†		●		8.5/25	7/25 (3)	<75	20♦	●									●
	AFB24-SR N4H	●			8.5/25	5.5/25 (3)	95	<20♦	●								●	
	AFB24-SR-S N4H	●			8.5/25	5.5/25 (3)	95	<20♦	●								●	●
AFB24-MFT N4H†	●			10/25	7.5/25 (3)	150	<20♦	●				● ● ● ● ● ● ● ●						
AFB24-MFT-S N4H†	●			10/25	7.5/25 (3)	70...220 (150)	<20♦	●				● ● ● ● ● ● ● ●					●	
AFB24-MFT95 N4H†	●			10/25	7.5/25 (3)	70...220 (150)	<20♦				●						● ●	
<b>NFB Series</b> 90 in-lbs [10 Nm] Approx. 22 sq. ft.	NFB24	●			8.5	6 (2.5)	70...220 (150)	<20♦	●									
	NFB24-S	●			8.5	6 (2.5)	<75	20♦	●									●
	NFBUP		●		6.5**	6 (2.5)	<75	20♦	●									
	NFBUP-S		●		6.5**	6 (2.5)	<75	20♦	●									●
	NFB24-SR	●			6	3.5 (2.5)	95	<20♦	●								●	
	NFB24-SR-S	●			6	3.5 (2.5)	95	<20♦	●								●	●
	NFB24-MFT	●			9	6.5 (3)	40...220 (150)	<20♦	●				● ● ● ● ● ● ● ●					
	NFB24-MFT-S	●			9	6.5 (3)	40...220 (150)	<20♦	●				● ● ● ● ● ● ● ●					●
	NFB24 N4H	●			8.5/25	6/25 (2.5)	70...220 (150)	<20♦	●									
	NFB24-S N4H	●			8.5/25	6/25 (2.5)	<75	20♦	●									●
	NFBUP N4H		●		6.5**/25	6/25 (2.5)	<75	20♦	●									
	NFBUP-S N4H		●		6.5**/25	6/25 (2.5)	<75	20♦	●									●
	NFB24-SR N4H	●			6/25	3.5/25 (2.5)	95	<20♦	●								●	
	NFB24-SR-S N4H	●			6/25	3.5/25 (2.5)	95	<20♦	●								●	●
NFB24-MFT N4H	●			9/25	6.5/25 (3)	40...220 (150)	<20♦	●				● ● ● ● ● ● ● ●					●	
NFB24-MFT-S N4H	●			9/25	6.5/25 (3)	40...220 (150)	<20♦	●				● ● ● ● ● ● ● ●					●	

♦ <60 seconds @ -22°F [-30°C].  
 † Piggy back mounting on a single shaft: On/Off wired in parallel and -MFT (EFB and AFB only) wired Master-Slave. Please call your ECCO Supply™ Sales Representative for details.  
 \* 8.5 VA for 120 VAC; 7 VA for 24 VAC, 18 VA for 240 VAC.  
 \*\* 6.5 VA for 120 VAC; 6 VA for 24 VAC; 9.5 VA for 240 VAC  
**NEMA 4 Heater: add "H" to the end of select "N4", for example NFB24-MFT N4H. All AF/NF NEMA 4 models are configured for a CCW spring return rotation.**  
 For CW spring return rotation, field reconfiguration is needed.

(cont'd on next page)

- E.&O.E. - All Prices F.O.B. Our Warehouse - Subject to Change Without Notice - All Taxes Extra - May not be Available at All Branches -

**STANDARD SPRING RETURN DAMPER ACTUATOR PRODUCT RANGE (cont'd)**

		Power Supply			Power Consumption		Running Time(s)		Control Input				Control Input MFT			Position Feedback		Auxiliary Switches			
		24 VAC +/- 20%, 50/60 Hz, VDC +/- 10%	120 VAC +/- 10%	230 VAC +/- 10%	VA Rating, Transformer Sizing	Wattage Running (Holding)	Motor Drive (Default)	Spring Return	On/Off	Floating Point	2-10 VDC (Default) 4-20 mA (w/500 Ω Resistor)	3 kΩ NTC Type 10 Thermistor	6 - 9 VDC, 20 VDC Output Voltage	On/Off	Floating Point	Start and Span adj. Start 0.5 to 30 VDC, Span 2.5 to 32 VDC	PWM adj., 0.02 to 50.0 Seconds	2-10 VDC (Default)	VDC Variable, Start 0.5 to 8, Span 2-10 VDC	1 SPDT, 3 A (0.5 A inductive) @ 250V	
<b>LF Series</b> 35 in-lbs [4 Nm] Approx. 8.5 sq. ft.	LF24 US	●			7	5 (2.5)	<40 to 75	<25♦	●												
	LF24-S US	●			7	5 (2.5)	<40 to 75	<25♦	●												●
	LF120 US		●		7.5	5.5 (3.5)	<40 to 75	<25♦	●												
	LF120-S US		●		7.5	5.5 (3.5)	<40 to 75	<25♦	●												
	LF230 US			●	7	5 (3)	<40 to 75	<25♦	●												
	LF230-S US			●	7	5 (3)	<40 to 75	<25♦	●												
	LF24-SR US	●			5	2.5 (1)	150	<25♦			●							●			
	LF24-SR-S US	●			5	2.5 (1)	150	<25♦			●							●			
	LF24-SR-E US	●			5	2.5 (1)	150	<25♦			●							●			
	LF24-3 US	●			5	2.5 (1)	150	<25♦		●											
	LF24-3-S US	●			5	2.5 (1)	150	<25♦		●											
	LF24-ECON-R03 US	●			5	2.5 (1)	95	<25♦				●						●			
	LF24-MFT US	●			5	2.5 (1)	75...300 (150)	<25♦			●			●	●	●	●	●	●	●	●
	LF24-MFT-S US	●			5	2.5 (1)	75...300 (150)	<25♦			●			●	●	●	●	●	●	●	●
	LF24-MFT-20 US	●			6	3.5 (1.5)	150	<25♦					●	●	●	●	●	●	●	●	●
	LF24-MFT-S-20 US	●			6	3.5 (1.5)	150	<25♦					●	●	●	●	●	●	●	●	●
LFC24-3-R US	●			5	2.5 (1)	90	<25♦		●												
LFC24-3-S US	●			5	2.5 (1)	90	<25♦		●												
<b>TFB Series</b> 22 in-lbs [2.5 Nm] Approx. 5.5 sq. ft.	TFB24	●			5	2 (1.3)	<75	<25♦	●												
	TFB24-S	●			5	2 (1.3)	<75	<25♦	●												
	TFLB24	●			5	2 (1.3)	<75	<75	●												
	TFB120		●	●	5	2.5 (1.3)	<75	<25♦	●												
	TFB120-S		●	●	5	2.5 (1.3)	<75	<25♦	●												
	TFLB120		●	●	5	2.5 (1.3)	<75	<75	●												
	TFCB120-S		●	●	6	3 (1.5)	<30	<25♦	●												
	TFB24-SR	●			4	2 (1)	95	<25♦			●							●			
	TFB24-SR-S	●			4	2 (1)	95	<25♦			●							●			
	TFB120-SR		●	●	5.5	2.5 (2)	95	<25♦			●							●			
	TFB24-3	●			4	2.5 (1)	95	<25♦		●											
	TFB24-3-S	●			4	2.5 (1)	95	<25♦		●											
	TFB24-MFT	●			4	2.5 (1)	75...300 (150)	<25♦			●			●	●	●	●	●	●	●	●
TFB24-MFT-S	●			4	2.5 (1)	75...300 (150)	<25♦			●			●	●	●	●	●	●	●	●	

♦ &lt;60 seconds @ -22°F [-30°C].

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**STANDARD NON-SPRING RETURN DAMPER ACTUATOR PRODUCT RANGE**

		Power Supply		Power Consumption		Running Time	Control Input		Control Input MFT				Position Feedback		Add-On Accessory				
		24 VAC ± 20%, 50/60 Hz VDC ± 10%	100 VAC to 240 VAC	VA Rating	Wattage Running (Holding)	Motor Drive	On/Off	Floating Point	2-10 VDC or 4-20 mA (w/500 Ω Resistor)	On/Off	Floating Point	Start and Span adj., Start 0.5 to 30 VDC, Span 2.5 to 32 VDC	PWM adj., 0.02 to 50.0 Seconds	2-10 VDC (Default) Adjustable with MFT	5 kΩ Resistive Feedback	10 kΩ Resistive Feedback	1 SPDT, 3A (0.5A Inductive) @ 250V	S1A or S2A	Potentiometer
<b>GMB Series</b> 360 in-lbs [40 Nm] Approx. 90 sq.ft.	GMB24-3	●		6	4.0 (2.0)	150	●	●										●	●
	GMB24-SR	●		6.5	4.5 (2.0)	150			●					●				●	●
	GMB24-MFT† (A)	●		7	4.0 (1.5)	150			●	●	●	●	●	●				●	●
<b>AMB Series</b> 180 in-lbs [20 Nm] Approx. 45 sq.ft.	AMB24-3	●		5.5	2.5 (0.5)	95	●	●										●	●
	AMB24-3-S	●		5.5	2.5 (0.5)	95	●	●										●	●
	AMB24-SR	●		5	2.5 (0.4)	95			●					●				●	●
	AMB24-MFT (A)	●		6	3.5 (1.3)	150			●	●	●	●	●	●				●	●
<b>NMB Series</b> 90 in-lbs [10 Nm] Approx. 22 sq.ft.	NMB24-3	●		4	2.0 (0.2)	95	●	●										●	●
	NMCB24-3	●		4	2.5 (0.2)	45	●	●										●	●
	NMB24-SR	●		5	2.5 (0.4)	95			●					●				●	●
	NMCB24-SR	●		5	2.5 (0.4)	45			●					●				●	●
	NMB24-MFT (A)	●		6	3.5 (1.3)	150			●	●	●	●	●				●	●	
<b>LMB Series</b> 45 in-lbs [5 Nm] Approx. 11 sq.ft.	LMB24-3	●		2	1.5 (0.2)	95	●	●										●	●
	LMCB24-3	●		2.5	1.5 (0.2)	35	●	●										●	●
	LMB24-3.1	●		2	1.5 (0.2)	95	●	●										●	●
	LMB24-3-S	●		2	1.5 (0.2)	95	●	●										●	●
	LMB24-3-T	●		2	1.5 (0.2)	95	●	●										●	●
	LMCB24-3-T	●		2.5	1.5 (0.2)	35	●	●										●	●
	LMB24-3-T.1	●		2	1.5 (0.2)	95	●	●										●	●
	LMB24-3-P5-T	●		2	1.5 (0.2)	95	●	●							●			●	●
	LMB24-3-P5-T.1	●		2	1.5 (0.2)	95	●	●							●			●	●
	LMB24-3-P10-T	●		2	1.5 (0.2)	95	●	●								●		●	●
	LMB24-SR	●		3	1.5 (0.4)	95			●						●			●	●
	LMCB24-SR	●		3	1.5 (0.4)	35			●						●			●	●
	LMB24-SR.1	●		3	1.5 (0.4)	95			●						●			●	●
	LMB24-SR-T	●		3	1.5 (0.4)	95			●						●			●	●
	LMCB24-SR-T	●		3	1.5 (0.4)	35			●						●			●	●
	LMB24-SR-T.1	●		3	1.5 (0.4)	95			●						●			●	●
	LMB24-MFT (A)	●		5	2.5 (1.2)	150			●	●	●	●	●	●				●	●
LMB24-HM (B)	●		2	1.5 (0.2)	95												●	●	
LMB24-10P-HM (B)	●		2	1.5 (0.2)	95												●	●	
<b>CMB Series</b> 18 in-lbs [2 Nm] Approx. 4.5 sq.ft.	CMB24-3	●		1.5	1.0 (0.2)	35	●	●											
	CMB24-3.1	●		1.5	1.0 (0.2)	35	●	●											
	CMB120-3		●	3.5	1.5 (1.0)	35	●	●											
	CMB24-3-T	●		1.5	1.0 (0.2)	35	●	●											
	CMB24-3-T.1	●		1.5	1.0 (0.2)	35	●	●											
	CMB24-SR-R	●		2.5	1.5 (0.5)	35			●					●					
	CMB24-SR-L	●		2.5	1.5 (0.5)	35			●					●					

† Dual mounting on a single shaft is possible for higher torque (-MFT wired Master-Slave). Please call your ECCO Supply™ Sales Representative for details.

(A) Shipped default. 150 seconds running time, 2-10 VDC control input and feedback. Field programmable with MFT tools.

(B) Drop-in replacement of LM24-M VAV actuator.

†Heater option for NEMA 4/NEMA 4X – P.O.A.

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**STANDARD NON-SPRING RETURN DAMPER ACTUATOR PRODUCT RANGE (cont'd)**

		Power Supply		Power Consumption		Running Time	Control Input		Control Input <b>MFT</b>			Position Feedback		Add-On Accessory					
		24 VAC ± 20%, 50/60 Hz, VDC ± 10%	100 VAC to 240 VAC	VA Rating	Wattage Running (Holding)	Motor Drive	On/Off	Floating Point	2-10 VDC or 4-20 mA (w/500 Ω Resistor)	On/Off	Floating Point	Start and Span adj., Start 0.5 to 30 VDC, Span 2.5 to 32 VDC	PWM adj., 0.02 to 50.0 Seconds	2-10 VDC (Default) Adjustable with MFT	5 kΩ Resistive Feedback	10 kΩ Resistive Feedback	1 SPDT, 3A (0.5A Inductive) @ 250V	STA or SZA	Potentiometer
<b>AMQB Series</b> 140 in-lbs [16 Nm]	AMQB24-1	●		23	15 (1.5)	7	●											●	●
	AMQB24-MFT	●		23	15 (1.5)	7				●	●		●					●	●
<b>NMQB Series</b> 70 in-lbs [8 Nm]	NMQB24-1	●		20	13 (1.5)	4	●											●	●
	NMQB24-MFT	●		20	13 (1.5)	4				●	●		●					●	●
<b>LMQB Series</b> 35 in-lbs [4 Nm]	LMQB24-1	●		20	13 (1.5)	2.5	●											●	●
	LMQB24-MFT	●		20	13 (1.5)	2.5				●	●		●					●	●
<b>AHB Series</b> 01 lbf [450 N Force] 4" or 8" stroke	AHB24-3-100	●		4.5	2.0 (0.5)	150*	●	●											
	AHB24-3-200	●		4.5	2.0 (0.5)	150*	●	●											
	AHB24-SR-100	●		4.5	2.5 (0.5)	150*			●					●					
	AHB24-SR-200	●		4.5	2.5 (0.5)	150*			●					●					
<b>AHQB Series</b> 14 lbf [200 N Force] 4" stroke	AHQB24-1-100	●		23	13 (1.5)	7*	●												
	AHQB24-MFT-100	●		23	13 (1.5)	7*				●	●		●						
<b>LHB Series</b> 34 lbf [150 N Force] 4" or 8" stroke	LHB24-3-100	●		3	1.5 (0.5)	150*	●	●											
	LHB24-3-200	●		3	1.5 (0.5)	150*	●	●											
	LHB24-SR-100	●		3	1.5 (0.5)	150*			●					●					
	LHB24-SR-200	●		3	1.5 (0.5)	150*			●					●					
<b>LHQB Series</b> 22 lbf [100 N Force] 4" stroke	LHQB24-1-100	●		23	13 (1.5)	3.5*	●												
	LHQB24-MFT-100	●		23	13 (1.5)	3.5*				●	●		●						
<b>LUB Series</b> 27 in-lbs [3 Nm]	LUB24-3	●		2.5	1.0 (0.5)	150**	●	●											
	LUB24-SR	●		3	3.0 (0.5)	150**			●					●					

\*Running time is per 4 inches [100 mm] of travel.

\*\*Running time is 150 seconds per 90°.

**FIRE AND SMOKE SPRING RETURN DAMPER ACTUATOR PRODUCT RANGE**

		Power Supply			Power Consumption	Running Time(s)		Control Input	Auxiliary Switches	
		24 VAC (FSAF - 24 VAC/DC)	120 VAC	230 VAC	VA Rating	Motor Drive	Spring Return	On/Off	2 SPST	2 SPDT
<b>FSAF Series</b> 133 in-lbs [15 Nm] Approx. 16 sq. ft. @ 250°F	FSAF24 US	●			10	<75	<20	●		
	FSAF24-S US	●			10	<75	<20	●	●	
	FSAF120 US		●		11	<75	<20	●		
	FSAF120-S US		●		11	<75	<20	●	●	
	FSAF230 US			●	12	<75	<20	●		
	FSAF230-S US			●	12	<75	<20	●	●	
	FSAF24-SR US	●			11	<75	<20	2-10 VDC		
	FSAF24-SR-S US	●			11	<75	<20	2-10 VDC		●
	FSAF24-BAL US	●			10	<75	<20	3-Position		
	FSAF24-BAL-S US	●			10	<75	<20	3-Position		●
<b>FSAFB Series</b> 180 in-lbs [20 Nm] Approx. 18 sq. ft. @ 250°F	FSAFB24-SR	●			9	<75	<20	2-10 VDC		
	FSAFB24-SR-S	●			9	<75	<20	2-10 VDC		●
<b>FSNF Series</b> 70 in-lbs [8 Nm] Approx. 12 sq. ft. @ 350°F	FSNF24 US	●			24*	<15	<15	●		
	FSNF24-S US	●			24*	<15	<15	●		●
	FSNF120 US		●		23*	<15	<15	●		
	FSNF120-S US		●		23*	<15	<15	●		●
	FSNF230 US			●	23*	<15	<15	●		
	FSNF230-S US			●	23*	<15	<15	●		●
<b>FSLF Series</b> 30 in-lbs [3.5 Nm] Approx. 4 sq. ft. @ 350°F	FSLF24 US	●			15**	<15	<15	●		
	FSLF24-S US	●			15**	<15	<15	●	●	
	FSLF120 US		●		18**	<15	<15	●		
	FSLF120-S US		●		18**	<15	<15	●	●	
	FSLF230 US			●	17**	<15	<15	●		
	FSLF230-S US			●	17**	<15	<15	●	●	
<b>FSTF Series***</b> 18 in-lbs [2 Nm] Approx. 1.5 sq. ft. @ 250°F	FSTF120 US		●		3.5	<75	<25	●		
	FSTF120-S US		●		3.5	<75	<25	●	●	

**\*FSNF VA Rating Note:**

Individual Fusing or Breakers are not required by Belimo.

The FSNF draws higher peak current when driving against any type of stop. This requires the value of fuse or breaker to be increased to avoid nuisance opening or tripping. A 2.5 amp slow blow fuse should be used for 24 VAC. A 0.5 amp slow blow fuse should be used for 120 VAC. A 0.25 amp slow blow fuse should be used for 230 VAC.

**\*\*FSLF VA Rating Note:**

Individual Fusing or Breakers are not required by Belimo.

The FSLF draws higher peak current when driving against any type of stop. This requires the value of fuse or breaker to be increased to avoid nuisance opening or tripping. A 1 amp slow blow fuse should be used for 24 VAC. A 0.25 amp slow blow fuse should be used for 120 VAC. A 0.125 amp slow blow fuse should be used for 230 VAC.

\*\*\*Not for retrofit or replacement.

**SPRING RETURN DAMPER ACTUATOR NOMENCLATURE**

EF		X	24	-MFT	-S	N4
<b>Torque Rating</b>	<b>Speed †</b>	<b>Options</b>	<b>Power Supply</b>	<b>Control</b>	-S = Built-in Auxiliary Switch	US N4 ♦ = NEMA 4 N4H = NEMA 4 with Heater
EF = 270 in-lbs AF = 180 in-lbs NF = 90 in-lbs LF = 35 in-lbs TF = 22 in-lbs	C = Fast Running L = Slow Running Blank = Normal Speed	B = Basic X = Customized Blank = None	24 = 24 VAC/DC 120 = 120 VAC* 230 = 230 VAC UP = 24 to 240 VAC**	Blank = On/Off -3 = Floating Point -SR = 2-10 VDC -PC = 0 to 10 Volt (Phasecut) -ECON-RO3 = 3 kΩ NTC Type 10 Thermistor -MFT = Multi-Function Technology -MFT95 = 0 to 135 Ω -MFT-20 = 6 to 9 VDC, 20 VDC Power Supply		

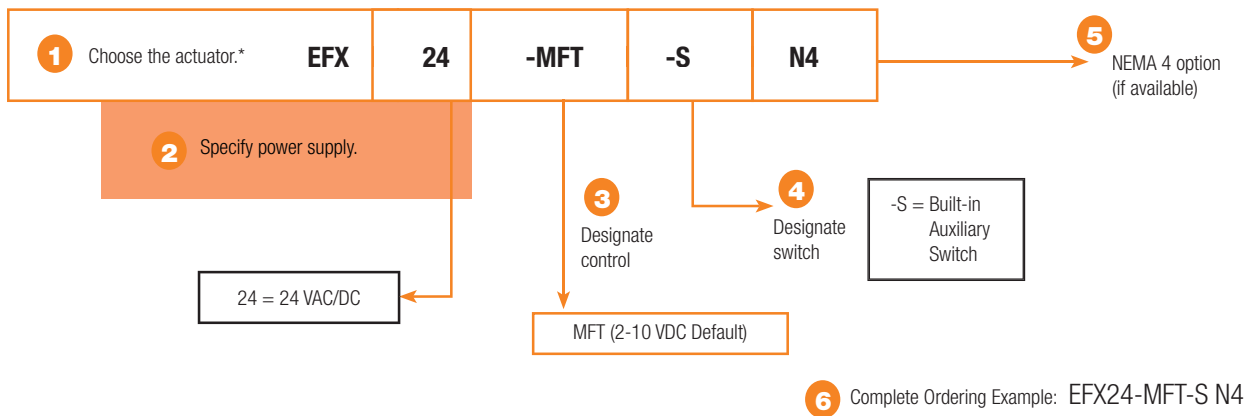
♦ NEMA 4 option on select models

† Only available on certain LF and TF models.

\*EF and TF series have 100 to 240 VAC nominal power supply.

\*\*24 to 125 VDC

**Ordering Example**



\*All functions and options are not available with all versions

## AF SERIES

### DIRECT COUPLED, SPRING RETURN DAMPER ACTUATOR

ITEM #	MODEL	DESCRIPTION
761002	AFB24	Spring Return Actuator
761004	AFB24-S	Spring Return Actuator
761011	AFBUP	Spring Return Actuator
761012	AFBUP-S	Spring Return Actuator
761008	AFB24-SR*	Spring Return Actuator

\*AFB24-SR is **NOT** piggy back capable. If piggy back capability is needed, use MFT models or new EFB24-SR (270 in-lbs) spring return actuator. AFBUP is universal power supply, 24 VAC to 240 VAC.



AFB24-S

#### Actuator Specifications

Torque	180 in-lbs [20 Nm] Approximately 45 sq. ft.
Angle of Rotation◆	95°, adjustable with mechanical end stops MFT electronically variable 0-100%
Fits Shaft Diameter	1/2" to 1.05" (clamp centers on 1/2", 3/4", and 1.05")
Position Indication	Visual indicator
Manual Override	5mm hex crank (3/16" allen), supplied
Direction of Rotation◆	External switch with -SR and MFT
Spring Return	CW/CCW mounting (reversible)
Dimensions	9.69" × 3.86" × 3.42" [246.1 × 98 × 86.9 mm]
Electrical Connection	3 ft., 18 GA plenum cable, 1/2" conduit fitting (default)
Overload Protection	Electronic throughout rotation
Ambient Temperature	-22°F to +122°F [-30°C to +50°C]
Auxiliary Switch(es)	(-S) models: 2 SPDT, 3A (0.5A inductive) @ 250V, one switch fixed at 10°, one adjustable 10° to 90°
Housing	NEMA 2/IP54, UL enclosure Type 2
Agency Listings	cULus according to UL 60730-1A/-2-14, UL 2043*, CAN/CSA E60730-1:02, CE according to 2004/108/EC and 2006/95/EC

◆Variable with MFT

\*Only with plenum rated cable or when electrical conduit is used.

**NOTE:** For Technical Data see [www.belimo.us](http://www.belimo.us)



**LF SERIES**
**DIRECT COUPLED, SPRING RETURN DAMPER ACTUATOR**

ITEM #	MODEL	DESCRIPTION
761014	LF24 US	Spring Return Actuator
761015	LF24-S US	Spring Return Actuator
761016	LF120 US	Spring Return Actuator
761017	LF120-S US	Spring Return Actuator
761018	LF24-SR US	Spring Return Actuator
761019	LF24-SR-S US	Spring Return Actuator



LF24-SR US

**Actuator Specifications**

Torque	35 in-lbs [4 Nm] Approximately 8.5 sq. ft.
Angle of Rotation◆	95°, adjustable with mechanical end stops MFT electronically variable 0-100%
Fits Shaft Diameter	3/8"-1/2" standard (centers on 1/2"); 1/2"-3/4" with K6-1 clamp accessory
Position Indication	Visual indicator
Direction of Rotation◆	CW/CCW external switch (proportional models)
Spring Return	CW/CCW mounting (reversible)
Dimensions	7.67" × 3.86" × 3.23" [195 × 98 × 82mm]
Electrical Connection	3 ft., 18 GA plenum cable (modulating), 3 ft., 18 GA appliance cable (on/off, MFT, -S types), 1/2" conduit fitting
Overload Protection	Electronic throughout rotation
Ambient Temperature	-22°F to +122°F [-30°C to +50°C]
Auxiliary Switch	(-S) Models: 1 SPDT, 3A (0.5A inductive) @ 250V Adjustable 0° to 95°
Housing	NEMA 2 (IP54) any orientation
Agency Listings	cULus according to UL 873, UL 2043* and CAN/CSA C22.2 No. 24-93

◆Variable with MFT

\*Only with plenum rated cable or when electrical conduit is used.

**NOTE:** For Technical Data see [www.belimo.us](http://www.belimo.us)

**EF SERIES**
**DIRECT COUPLED, SPRING RETURN DAMPER ACTUATOR**

ITEM #	MODEL	DESCRIPTION
761170	EFB120-S	Spring Return Actuator

**Actuator Specifications**

Torque	270 in-lbs [30 Nm] Approximately 66 sq. ft.
Angle of Rotation♦	95°, adjustable with mechanical end stops MFT electronically variable 0-100%
Fits Shaft Diameter	1/2" to 1.05" (clamp centers on 3/4", and 1.05")
Position Indication	Visual indicator
Manual Override	5mm hex crank (3/16" allen), supplied
Direction of Rotation♦	External switch with -SR and MFT
Spring Return	CW/CCW mounting (reversible)
Dimensions	11.32" × 5.43" × 4.74" [287.5 × 138 × 120.5 mm] N4, N4H models: 13.54" × 5.43" × 4.74" [344 × 138 × 120.5 mm]
Electrical Connection	3 ft., 18 GA plenum cable, 1/2" conduit fitting (default)
Overload Protection	Electronic throughout rotation
Ambient Temperature	-22°F to +122°F [-30°C to +50°C] N4H models: -40°F to +122°F [-40°C to +50°C]
Auxiliary Switch(es)	(-S) NEMA 2 models: 2 SPDT, 3A (0.5A inductive) @ 250V, one switch fixed at 10°, one adjustable 10° to 85°
Housing	NEMA 2/IP54, UL enclosure Type 2 N4, N4H models: NEMA 4/IP66, Enclosure Type 4
Agency Listings	cULus according to UL 60730-1A/-2-14, UL 2043*, CAN/CSA E60730-1:02, CE according to 2004/108/EC and 2006/95/EC



EFB120-S

♦Variable with MFT

\*Only with plenum rated cable or when electrical conduit is used.

**NOTE:** For Technical Data see [www.belimo.us](http://www.belimo.us)

## NF SERIES

### DIRECT COUPLED, SPRING RETURN DAMPER ACTUATOR

ITEM #	MODEL	DESCRIPTION
761033	NFB24	Spring Return Actuator
761034	NFB24-S	Spring Return Actuator
761037	NFBUP	Spring Return Actuator
761031	NFBUP-S	Spring Return Actuator
761036	NFB24-SR	Spring Return Actuator



NFB24

#### Actuator Specifications

Torque	90 in-lbs [10 Nm] Approximately 22 sq. ft.
Angle of Rotation◆	95°, adjustable with mechanical end stops, MFT (electronically variable 0-100%)
Fits Shaft Diameter	1/2" to 1.05" (clamp centers on 1/2", 3/4", and 1.05")
Position Indication	Visual indicator
Manual Override	5mm hex crank (3/16" allen), supplied
Direction of Rotation◆	External switch with -SR and MFT
Spring Return	CW/CCW mounting (reversible)
Dimensions	9.69" × 3.86" × 3.42" [246.1 × 98 × 86.9 mm]
Electrical Connection	3 ft., 18 GA plenum cable, 1/2" conduit fitting (default)
Overload Protection	Electronic throughout rotation
Ambient Temperature	-22°F to +122°F [-30°C to +50°C]
Auxiliary Switch(es)	(-S) Models: 2 SPDT, 3A (0.5A inductive) @ 250V, one switch fixed at 10°, one adjustable 10° to 90°
Housing	NEMA 2/IP54, UL Enclosure Type 2
Agency Listings	cULus according to UL 60730-1A/-2-14, UL 2043*, CAN/CSA E60730-1:02, CE according to 2004/108/EC and 2006/95/EC

◆Variable with MFT

\*Only with plenum rated cable or when electrical conduit is used.

**NOTE:** For Technical Data see [www.belimo.us](http://www.belimo.us)

**TF SERIES**
**DIRECT COUPLED, SPRING RETURN DAMPER ACTUATOR**

ITEM #	MODEL	DESCRIPTION
761118	TFB120-S	Spring Return Actuator
761114	TFB24-SR	Spring Return Actuator

**Actuator Specifications**

Torque	22 in-lbs [2.5 Nm] Approximately 5.5 sq. ft.
Angle of Rotation♦	95°, adjustable with mechanical end stops MFT electronically variable 0-100%
Overload Protection	Electronic throughout rotation
Fits Shaft Diameter	1/4" to 1/2" (centers on 1/2")
Position Indication	Visual indicator
Direction of Rotation♦	CW/CCW external switch (proportional models)
Spring Return	CW/CCW mounting (Reversible)
Dimensions	6.28" × 3.0" × 3.30" [159.5 × 76.2 × 83.72 mm]
Electrical Connection	3 ft., 18 GA plenum cable (modulating), 3 ft., 18 GA appliance cable (on/off, -S types), 1/2" conduit fitting
Ambient Temperature	-22°F to +122°F [-30°C to +50°C]
Auxiliary Switch	(-S) Models: 1 SPDT, 3A (0.5A inductive) @ 250V, adjustable 0° to 95°
Housing	NEMA 2 (IP42), UL enclosure Type 2, any orientation
Agency Listings	cULus according to UL60730-1A/-2-14, UL 2043*, CAN/ CSA E60730-1:02, CE according to 2004/108/EC and 2006/95/EC



TFB24

♦Variable with MFT

\*Only with plenum rated cable or when electrical conduit is used.

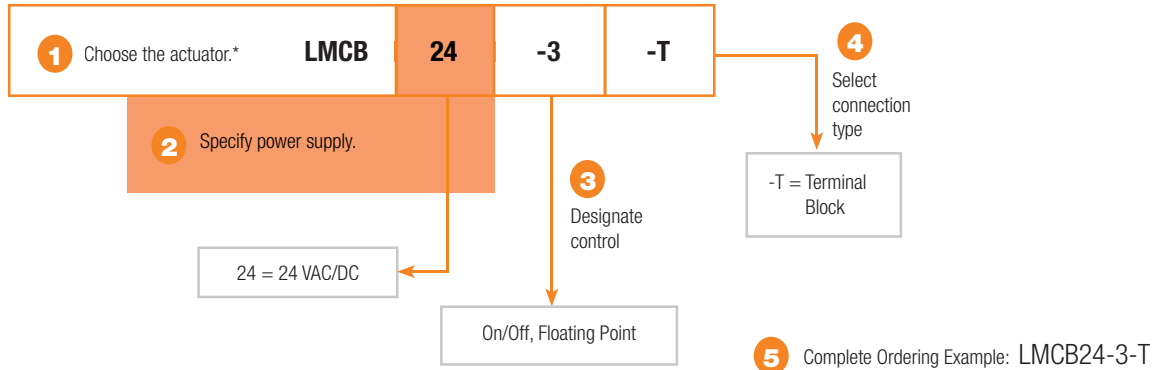
**NOTE:** For Technical Data see [www.belimo.us](http://www.belimo.us)

**NON-SPRING RETURN DAMPER ACTUATOR NOMENCLATURE**

LM	C	B	24	-3	-T	
<b>Torque Rating</b> GM = 360 in-lbs AM = 180 in-lbs NM = 90 in-lbs LM = 45 in-lbs CM = 18 in-lbs AH = 101 lbf LH = 34 lbf LU = 27 in-lbs	<b>Speed</b> Q = Quick Running C = Fast Running No Designation = Normal Speed (LMB24-3)	<b>Version</b> B = Basic X = Customized	<b>Power Required</b> 24 = 24 VAC/DC, 50/60 Hz 120 = 100 to 240 VAC, 50/60 Hz	<b>Control</b> -1 = On/Off -3 = On/Off, Floating Point -3-P5 = On/Off, Floating Point w/5 kΩ Feedback -3-P10 = On/Off, Floating Point w/10 kΩ Feedback -SR = 2-10 VDC -PC = 0 to 20 Volt (Phasecut) -MFT = Multi-Function Technology -MFT95 = 0 to 135 Ω	<b>Options</b> -T = Terminal Block Blank = Cable Version -S = Switch	.1 = Bulk Pack N4 = NEMA 4 N4H = NEMA 4 with Heater

**Note:** Q versions have a slightly lower torque rating.

**Ordering Example**



\*All functions and packaging are not available with all versions.

**AMB SERIES**
**DIRECT COUPLED, NON-SPRING RETURN DAMPER ACTUATOR**

ITEM #	MODEL	DESCRIPTION
761152	AMB24-SR	Non-Spring Return Actuator

**Actuator Specifications**

Torque	180 in-lbs [20 Nm] Approximately 45 sq. ft.
Angle of Rotation◆	95°, adjustable with mechanical end stops MFT electronically variable 0-100%
Fits Shaft Diameter	1/2" to 1.05" (centers on 1/2" and 3/4" shafts with insert and 1.05" without insert)
Position Indication	Reflective visual indicator (snap-on)
Manual Override	External push-button
Direction of Rotation◆	External switch
Dimensions	7.47" × 3.46" × 2.49" [189.8 × 88 × 64 mm]
Electrical Connection	3 ft., 18 GA plenum cable, 1/2" conduit fitting
Overload Protection	Electronic throughout rotation
Auxiliary Switch(es)	(-S) Models: 1 SPDT, 3A (0.5A inductive) @ 250V adjustable 5° to 85°; add-on: 1 or 2 SPDT, 3A (0.5A inductive) @ 250V one switch adjustable 5° to 85°
Housing	NEMA 2/IP54 (NEMA 1/IP20 for -T models), Enclosure Type 2
Agency Listings	cULus according to UL 60730-1A/-2-14, UL 2043, CAN/CSA E60730-1:02, CE according to 2004/108/EC and 2006/95/EC



◆Variable with MFT

**NOTE:** For Technical Data see [www.belimo.us](http://www.belimo.us)
**LMB SERIES**
**DIRECT COUPLED, NON-SPRING RETURN DAMPER ACTUATOR**

ITEM #	MODEL	DESCRIPTION
761020	LMB24-3	Non-Spring Return Actuator

**Actuator Specifications**

Torque	45 in-lbs [5 Nm] Approximately 11 sq. ft.
Angle of Rotation◆	95°, adjustable with mechanical end stops MFT electronically variable 0-100%
Fits Shaft Diameter	1/4" to 5/8" (self-centers on 5/8" shaft)
Position Indication	Reflective visual indicator (snap-on)
Manual Override	External push-button
Direction of Rotation◆	External switch
Dimensions	6.57" × 2.6" × 2.34" [167 × 66 × 59.4 mm]
Electrical Connection	3 ft., 18 GA plenum rated cable, 1/2" conduit fitting terminal strip (-T) models
Overload Protection	Electronic throughout rotation
Auxiliary Switch(es)	(-S) Models: 1 SPDT, 3A (0.5A inductive) @ 250V adjustable 5° to 85° add-on: 1 or 2 SPDT, 3A (0.5A inductive) @ 250V one switch adjustable 5° to 85°
Housing	NEMA 2/IP54 (NEMA 1/IP20 for -T models), Enclosure Type 2
Agency Listings	cULus according to UL 60730-1A/-2-14, UL 2043, CAN/CSA E60730-1:02, CE according to 2004/108/EC and 2006/95/EC



◆Variable with MFT

**NOTE:** For Technical Data see [www.belimo.us](http://www.belimo.us)

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**GMB SERIES**
**DIRECT COUPLED, NON-SPRING RETURN DAMPER ACTUATOR**

ITEM #	MODEL	DESCRIPTION
761150	GMB24-SR	Non-Spring Return Actuator

**Actuator Specifications**

Torque	360 in-lbs [40 Nm] Approximately 90 sq. ft.
Angle of Rotation♦	95°, adjustable with mechanical end stops MFT electronically variable 0-100%
Fits Shaft Diameter	1/2" to 1.05" (centers on 3/4" shaft with insert and on 1" without insert)
Position Indication	Reflective visual indicator (snap-on)
Manual Override	External push-button
Direction of Rotation♦	External switch
Dimensions	9.02" x 4.55" x 2.87" [229.2 x 115.6 x 72.9 mm]
Electrical Connection	3 ft., 18 GA plenum cable, 1/2" conduit fitting
Overload Protection	Electronic throughout rotation
Auxiliary Switch(es)	Add-on: 1 or 2 SPDT, 3A (0.5A inductive) @ 250V adjustable 5° to 85°
Housing	NEMA 2/IP54, Enclosure Type 2
Agency Listings	cULus according to UL 60730-1A/-2-14, UL 2043, CAN/CSA E60730-1:02, CE according to 2004/108/EC and 2006/95/EC



♦Variable with MFT

**NOTE:** For Technical Data see [www.belimo.us](http://www.belimo.us)
**CMB SERIES**
**DIRECT COUPLED, NON-SPRING RETURN DAMPER ACTUATOR**

ITEM #	MODEL	DESCRIPTION
761038	CMB24-3	Non-Spring Return Actuator
761040	CMB120-3	Non-Spring Return Actuator

**Actuator Specifications**

Torque	18 in-lbs [2 Nm] Approximately 4.5 sq. ft.
Angle of Rotation	Limitless without end stops, 315° with one end stop, 287.5° with two stops L = counter clockwise rotation, R = clockwise rotation
Fits Shaft Diameter	1/4" to 1/2" (self-centers on 3/8" shaft)
Position Indication	Reflective visual indicator (snap-on) with magnet
Manual Override	Engages with magnet. Magnet built-in to position indicator
Dimensions	6.22" x 2.2" x 1.10" [158 x 56 x 28 mm]
Electrical Connection	3 ft., 18 GA plenum rated cable terminal strip (-T) models
Overload Protection	Electronic throughout rotation
Auxiliary Switch	N/A
Housing	NEMA 2/IP54 (NEMA 1/IP20 for -T models), Enclosure Type 2
Agency Listings	cULus according to UL 60730-1A/-2-14, UL 2043, CAN/CSA E60730-1:02, CE according to 2004/108/EC and 2006/95/EC

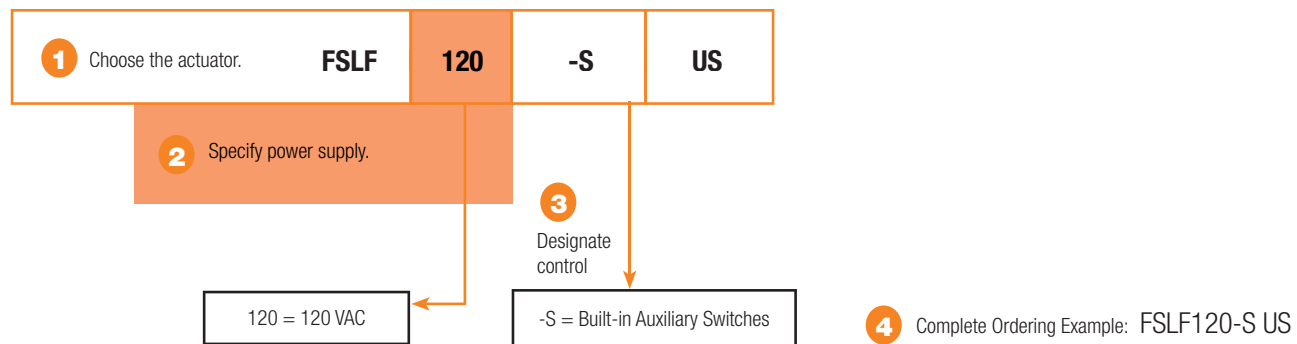


CMB24-3

**NOTE:** For Technical Data see [www.belimo.us](http://www.belimo.us)

**FIRE AND SMOKE DAMPER ACTUATOR NOMENCLATURE**

FS	L	F	120		-S	US
<b>Fire and Smoke</b>	<b>Torque Rating</b> A = 133/180 in-lbs N = 70 in-lbs L = 30 in-lbs T = 18 in-lbs	<b>Actuator Type</b> F = Spring Return	<b>Power Supply</b> 24 = 24 VAC 120 = 120 VAC 230 = 230 VAC	<b>Control</b> Blank = On/Off -SR = 2-10 VDC -BAL = 3-position	-S = Built-in Auxiliary Switches	

**Ordering Example**

**FSNF SERIES**
**DIRECT COUPLED, FIRE AND SMOKE SPRING RETURN DAMPER ACTUATORS**

ITEM #	MODEL	DESCRIPTION
761028	FSNF120-S US	Spring Return Actuator

**Actuator Specifications**

Torque	70 in-lbs [8 Nm]** Approx. 12 sq. ft. @ 350°F♦
Angle of Rotation	95°
Fits Shaft Diameter	1/2" to 1.05" (clamp self-centers on 1/2", 3/4" and 1.05")
Position Indication	Visual indicator, 0 to 95°
Manual Override	None
Direction of Rotation	CW/CCW mounting
Dimensions	10.2" x 3.86" x 3.23" [259 x 98 x 78 mm]
Electrical Connection	3 ft., 18 GA, 1/2" conduit fitting
Overload Protection	Electronic throughout rotation
Auxiliary Switch(es)	2 SPDT, 7A (2.5A inductive) @ 125/250V
Housing	NEMA 1
Agency Listings	cULus listed according to UL873 and CAN/CSA 22.2 No. 24-93. Listed to UL2043.



♦Specific models and sizes vary with each damper manufacturer. Visit [www.belimo.us/firesmoke](http://www.belimo.us/firesmoke) for latest listings.

\*\*FOR UL555S torque is the same for 1/2 hour at 350°F.

**NOTE:** For Technical Data see [www.belimo.us](http://www.belimo.us)

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**MECHANICAL DAMPER ACTUATOR ACCESSORIES**

**CRANK ARM ADAPTOR KITS**

ITEM #	MODEL	DESCRIPTION
761027	KH-LF	Crank arm for Shafts to 1/2"
761080	ZG-AF US	Crank arm Adaptor Kit (includes mounting hardware)
761081	ZG-AF108	Crank arm Adaptor Kit (includes ZG-108 & KH-AF US)
761086	ZG-LF112	Crank arm Adaptor Kit (includes ZG-112 & KH-LF)



KH-LF



ZG-AF US



ZG-AF108



ZG-LF112

**JACKSHAFT LINKAGE FOR SPRING RETURN DAMPER ACTUATORS**

ITEM #	MODEL	DESCRIPTION
761070	ZG-JSL	Jackshaft linkage for 1/2" to 1.05" shafts. Notes: EF requires ZG-121; LF requires K6-1 clamp.



ZG-JSL

**MOUNTING BRACKETS**

ITEM #	MODEL	DESCRIPTION
761051	ZG-100	Right angle 17"H x 11-1/8"W x 6" Base
761053	ZG-102	Multiple Actuator Mounting Bracket



ZG-100



ZG-102

**MISCELLANEOUS**

ITEM #	MODEL	DESCRIPTION
761050	LF-P	Anti-Rotation Bracket
761101	ZG-R01	4 to 20 mA adaptor, 500 Ω, 1/4" resistor w/6" pigtail wires
761160	B313B	Three Way Valve 1/2"
761162	B317B	Three Way Valve 3/4"



LF-P



3 Way Valve