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		Nominal torque ¹⁾	Actuating force	Stroke range	Spindle diameter	Form fit	For damper size up to approximately ¹⁾
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Rotary actuators with connecting cable

Page 11

UM..		1 Nm			6–12.7 mm		■ 0.2 m ²
CM..		2 Nm			6–12.7 mm		■ 0.4 m ²
LM..A..		5 Nm			6–20 mm		■ 1 m ²
NM..A..		10 Nm			8–26.7 mm		■ 2 m ²
SM..A..		20 Nm			10–20 mm		■ 4 m ²
GM..A..		40 Nm			12–26.7 mm		■ 8 m ²

Rotary actuators with connecting terminals

Page 13

UM..		1 Nm			6–12.7 mm		■ 0.2 m ²
CM..		2 Nm			6–12.7 mm		■ 0.4 m ²
LM..A..		5 Nm			6–20 mm		■ 1 m ²
NM..A..		10 Nm			8–26.7 mm		■ 2 m ²
SM..A..		20 Nm			10–20 mm		■ 4 m ²
GM..A..		40 Nm			12–26.7 mm		■ 8 m ²







Linear actuators with connecting cable

Page 15

UH..			50 N	0–60 mm			■ 0.4 m ²
CH..			125 N	0–100 mm			■ 0.8 m ²
LH..A..			150 N	0–300 mm			■ 1 m ²
SH..A..			450 N	0–300 mm			■ 3 m ²

Use of damper actuators from BELIMO: the actuators listed in this documentation are designed for adjusting dampers in technical building installations.

¹⁾ When calculating the torque or actuating force required to operate air dampers, it is essential to take into account all the data supplied by the damper manufacturer concerning cross sectional area, design, place of installation and air flow conditions. The recommended damper sizes are approximate.

		Nominal torque ¹⁾	Actuating force	Stroke range	Spindle diameter	For damper size up to approximately ¹⁾
Rotary actuators with fail-safe function						
TF..		2.5 Nm			6–12 mm	■ 0.5 m ²
LF..		4 Nm			8–16 mm	■ 0.8 m ²
NF..A..		10 Nm			10–25.4 mm	■ 2 m ²
SF..A..		20 Nm			10–25.4 mm	■ 4 m ²
EF..A..		30 Nm			12–26.7 mm	■ 6 m ²
SKM230.. + CM24K..		2 Nm			6–12.7 mm	■ 0.4 m ²
NKQ..A..		6 Nm			8–26.7 mm	■ 1.2 m ²
GK..A..		40 Nm			12–26.7 mm	■ 8 m ²

Use of damper actuators from BELIMO: the actuators listed in this documentation are designed for adjusting dampers in technical building installations.









¹⁾ When calculating the torque or actuating force required to operate air dampers, it is essential to take into account all the data supplied by the damper manufacturer concerning cross sectional area, design, place of installation and air flow conditions. The recommended damper sizes are approximate.







		Fail-safe function	Nominal torque ¹⁾	Actuating force	Stroke range	Spindle diameter	For damper size up to approximately ¹⁾
Fast running rotary actuators without fail-safe function							
Page 19							
TMC..A..			2 Nm			6–20 mm	0.4 m ²
LMC..A..			5 Nm			6–20 mm	1 m ²
NMC..A..			10 Nm			8–26.7 mm	2 m ²
SMC..A..			20 Nm			10–20 mm	4 m ²
Very fast running rotary actuators without fail-safe function							
Page 20							
LMQ..A..			4 Nm			8–26.7 mm	0.8 m ²
NMQ..A..			8 Nm			8–26.7 mm	1.5 m ²
NMD..A..			8 Nm			10–20 mm	1.5 m ²
SMQ..A..			16 Nm			12–26.7 mm	3.2 m ²
SMD..A..			16 Nm			10–20 mm	3.2 m ²
Very fast running linear actuators without fail-safe function							
Page 21							
LHQ..A..				100 N	0–100 mm		0.7 m ²
SHQ..A..				200 N	0–100 mm		1.3 m ²
RobustLine rotary actuators for extreme conditions, without / with fail-safe function							
Page 22							
NM..P..			10 Nm			10–20 mm	2 m ²
SM..P..			20 Nm			14–20 mm	4 m ²
NKQ..P..		•	6 Nm			10–20 mm	1.2 m ²
IP 66/67, NEMA 4X rotary actuators for outdoor applications, without / with fail-safe function							
Page 23							
SMQ..G..			16 Nm			12–26.7 mm	3.2 m ²
GM..G..			40 Nm			14–26.7 mm	8 m ²
NF..G..		•	10 Nm			12–26.7 mm	2 m ²
SF..G..		•	20 Nm			12–26.7 mm	4 m ²
GK..G..		•	40 Nm			14–26.7 mm	8 m ²

Use of damper actuators from BELIMO: the actuators listed in this documentation are designed for adjusting dampers in technical building installations.

¹⁾ When calculating the torque or actuating force required to operate air dampers, it is essential to take into account all the data supplied by the damper manufacturer concerning cross sectional area, design, place of installation and air flow conditions. The recommended damper sizes are approximate.

		Fail-safe function	Nominal torque ¹⁾	Form fit	Damper size
Rotary actuators with high torque Page 24					
PMCA..			160 Nm	17x17 mm	Special
PKCA..		•	160 Nm	17x17 mm	Special

		Nominal torque ¹⁾	Actuating force	Stroke range	Spindle diameter	Control	For damper size up to approximately ¹⁾
Parameterisable rotary actuators with connecting terminals Page 25							
LM..A..		5 Nm			6–20 mm	modulating 2–10 V ²⁾	 1 m ²
NM..A..		10 Nm			8–26.7 mm	modulating 2–10 V ²⁾	 2 m ²
SM..A..		20 Nm			10–20 mm	modulating 2–10 V ²⁾	 4 m ²
GM..A..		40 Nm			12–26.7 mm	modulating 2–10 V ²⁾	 8 m ²

Parameterisable rotary actuators with special control and connecting cable Page 26							
SM24A-MA		20 Nm			10–20 mm	modulating 4–20 mA ³⁾	 4 m ²
SM24A-PC		20 Nm			10–20 mm	modulating 0–20 V Phs ³⁾	 4 m ²
SM24A-R9		20 Nm			10–20 mm	modulating 0–135 Ω ³⁾	 4 m ²

Parameterisable linear actuators with connecting terminals Page 27							
LH..A..			150 N	0–300 mm		modulating 2–10 V ²⁾	 1 m ²

Use of damper actuators from BELIMO: the actuators listed in this documentation are designed for adjusting dampers in technical building installations.

¹⁾ When calculating the torque or actuating force required to operate air dampers, it is essential to take into account all the data supplied by the damper manufacturer concerning cross sectional area, design, place of installation and air flow conditions. The recommended damper sizes are approximate.

²⁾ Control, operating range, position feedback, running time and further functions on MP types can be set with PC-Tool or the parameterising device ZTH AP/ ZTH EU.

³⁾ Running time and further functions can be set with PC-Tool or the parameterising device ZTH AP/ ZTH EU.

		Motor torque	Fail-safe torque	Spindle diameter	Control	Running time motor	Running time Fail-safe
Fire and smoke damper actuators (with/ without fail-safe)							
BEN..		15 Nm		12 mm formfit	open / close 2 - 10 VDC	<30s	
BEE..		25 Nm		12 mm formfit	open / close 2 - 10 VDC	<30s	
BE..		40 Nm		14 mm formfit	open / close	<60s	
BFL..		4 Nm	3 Nm	12 mm formfit	open / close	<60s	20s
BFN..		9 Nm	7 Nm	12 mm formfit	open / close	<60s	20s
BFG..		11 Nm	8.5 Nm	10 mm formfit	open / close	<120s	20s
BF..		18 Nm	12 Nm	12 mm formfit (10 mm with adapter)	open / close 2 - 10 VDC	<120s	16s
FSTF..US		2 Nm	2 Nm	6.3–12.7 mm	open / close	<75s	<25s
FSLF..US		3.5 Nm	3.5 Nm	9.5–12.7 mm	open / close	<15s	<15s
FSNF..US		8 Nm	8 Nm	12.7–26.6 mm	open / close	<15s	<15s
FSAF..A		20 Nm	20 Nm	12.7–26.6 mm	open / close	<25s	<15s
FSAFB24-SR		20 Nm	20 Nm	12.7–26.6 mm	open / close 2 - 10 VDC	<75s	<20s

Use of damper actuators from BELIMO: the actuators listed in this documentation are designed for adjusting dampers in technical building installations.

		Rotary actuators						Linear actuators			
		UM..	CM..	LM..A..	NM..A..	SM..A..	GM..A..	UH..	CH..	LH..A..	SH..A..
Mechanical accessories											
Shaft extension			AV6-20	AV6-20	AV8-25	AV8-25 AV12-25-I					
End stop kit, rotary support, coupling piece								Z-AS2 Z-DS1 Z-KS2	Z-AS2 Z-DS1 Z-KS2	Z-AS1 Z-DS1 Z-KS1	
Baseplate extension					Z-NMA	Z-SMA	Z-GMA				
Angle of rotation limiter											
End stop clips		Z-ESCM	Z-ESCM						Z-ESCM		
Form fit inserts ¹⁾				ZF..-LMA ZFRL..-LMA	ZF..-NSA ZF8-NMA	ZF..-NSA					
Gear disengagement magnet			Z-MA						Z-MA		
Crank arm for actuator spindles					AH-20 ²⁾ AH-25	AH-20 AH-25 ³⁾	AH-GMA				
Crank arm for damper spindles					KH8	KH8	KH10				
Spindle clamp one-side				K-ELA..	K-ENMA K-ENSA	K-ENSA K-ENSA-I					
Spindle clamp reversible					K-NA	K-SA					
Ball joints					KG8 KG10A	KG8 KG10A	KG10A				
Installation kits for linkage operation					ZG-NMA	ZG-SMA	ZG-GMA				
Position indicator			Z-PICM	Z-PI	Z-PI	Z-PI	Z-PI				
Anti-rotation clip		Z-ARCM	Z-ARCM								
Protective cover		Z-PCUM						Z-PCUM			
End stop								Z-ESUH			
Electrical accessories											
Auxiliary switch				S1A S2A	S1A S2A	S1A S2A	S1A S2A				
Room temperature controller for modulating actuators			EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T
Feedback potentiometer				P..A ⁴⁾	P..A ⁴⁾	P..A ⁴⁾	P..A ⁴⁾				
Signal converter voltage/current for modulating actuators			Z-UIC	Z-UIC	Z-UIC	Z-UIC	Z-UIC	Z-UIC	Z-UIC	Z-UIC	Z-UIC
Digital position indication for modulating actuators			ZAD24	ZAD24	ZAD24	ZAD24	ZAD24			ZAD24	ZAD24
Positioner / range controller for modulating actuators			EXT-SA24	EXT-SA24	EXT-SA24	EXT-SA24	EXT-SA24		EXT-SA24	EXT-SA24	EXT-SA24
3-pole cable 24V, 1 m FRNC with Molex Mini-Fit Jr.® connector		Z-C24UM						Z-C24UM			
4-pole cable 24V, 1 m FRNC with Molex Mini-Fit Jr.® connector		Z-C24UM-SR						Z-C24UM-SR			
3-pole cable 230V, 1 m FRNC with Molex Mini-Fit Jr.® connector		Z-C230UM						Z-C230UM			
Parameterising devices											
Adjustment and diagnostic device				ZTH AP ⁵⁾ ZTH EU ⁵⁾	ZTH AP ⁵⁾ ZTH EU ⁵⁾	ZTH AP ⁵⁾ ZTH EU ⁵⁾	ZTH AP ⁵⁾ ZTH EU ⁵⁾			ZTH AP ⁵⁾ ZTH EU ⁵⁾	ZTH AP ⁵⁾ ZTH EU ⁵⁾

¹⁾ Form fit inserts: LM..A.: 8x8 mm, 10x10 mm, 12x12 mm; NM..A.: 8x8 mm (ZF8-NMA); NM..A./SM..A.: 10x10 mm, 12x12 mm, 15x15 mm, 16x16 mm.

²⁾ Only in combination with reversible spindle clamp K-NA.

³⁾ Only in combination with one-sided spindle clamp K-ENSA.

⁴⁾ Resistance values 140 Ω, 200 Ω, 500 Ω, 1 kΩ, 2.8 kΩ, 5 kΩ, 10 kΩ available.

⁵⁾ For all ..MP../..MA../..PC../..R9 actuators in the contracting and retrofit business.

Rotary actuators with fail-safe function

TF..	LF..	NF..A..	SF..A..	EF..A..	SKM230.. + CM24K..	NKQ..A..	GK..A..

Mechanical accessories

Shaft extension		AV6-20	AV6-20	AV8-25	AV8-25		AV6-20	AV8-25	
Adapter for auxiliary switch and feedback potentiometer								Z-SPA	Z-SPA
End stop kit, rotary support, coupling piece									
Baseplate extension				Z-SF	Z-SF				Z-GMA
Angle of rotation limiter		ZDB-TF	ZDB-LF						
End stop clips							Z-ESCM		
Form fit inserts ¹⁾		ZF8-TF	ZF8-LF	ZF..-NSA-F	ZF..-NSA-F				
Gear disengagement magnet							Z-MA		
Crank arm for actuator spindles		AH-TF	KH-LF	KH-AFB	KH-AFB			AH-25	AH-GMA
Crank arm for damper spindles		KH8	KH8	KH8	KH8	KH10 KH-EFB		KH8	KH10
Spindle clamp reversible			K6-1	K7-2 K7-3	K7-2 K7-3	K9-2		K-SA	
Ball joints		KG8 KG10A	KG8 KG10A	KG8 KG10A	KG8 KG10A			KG8 KG10A	KG10A
Installation kits for linkage operation		ZG-TF1	ZG-LF1 ZG-LF3	ZG-AFB	ZG-AFB	ZG-EFB		ZG-SMA	ZG-GMA
Screw fastening kit		SB-TF							
Position indicator				IND-AFB	IND-AFB	IND-EFB	Z-PICM	Z-PI	Z-PI
Anti-rotation clip							Z-ARCM		

Electrical accessories

Auxiliary switch			S2A-F ²⁾	S2A-F ²⁾	S2A-F ²⁾			S1A ³⁾ S2A ³⁾	S1A ⁴⁾ S2A ⁴⁾
Room temperature controller for modulating actuators		EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T		EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T
Feedback potentiometer			P200A-F ²⁾ P1000A-F	P200A-F ²⁾ P1000A-F	P200A-F ²⁾ P1000A-F			P..A ^{3) 5)}	P..A ^{4) 5)}
Signal converter voltage/current for modulating actuators		Z-UIC	Z-UIC	Z-UIC	Z-UIC	Z-UIC		Z-UIC	Z-UIC
Digital position indication for modulating actuators		ZAD24	ZAD24	ZAD24	ZAD24	ZAD24		ZAD24	ZAD24
Positioner / range controller for modulating actuators		EXT-SA24	EXT-SA24	EXT-SA24	EXT-SA24	EXT-SA24		EXT-SA24	EXT-SA24

Parameterising devices

Adjustment and diagnostic device				ZTH AP ⁶⁾ ZTH EU ⁶⁾	ZTH AP ⁶⁾ ZTH EU ⁶⁾	ZTH AP ⁶⁾ ZTH EU ⁶⁾			ZTH AP ⁶⁾ ZTH EU ⁶⁾
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¹⁾ Form fit inserts: TF../LF..: 8x8 mm; NF../SF..: 10x10 mm, 12x12 mm, 15x15 mm, 16x16 mm.

²⁾ For more versions for LF..-, NF..A and SF..A actuators please get in touch with your local BELIMO contact person.

³⁾ Auxiliary switch and feedback potentiometer on NKQ..A actuators can only ever be used together with adapter Z-SPA.

⁴⁾ Auxiliary switch and feedback potentiometer on GK..A actuators in combination with a reversible spindle clamp (mounted below for short-axis installation) can only ever be used together with adapter Z-SPA.

⁵⁾ Resistance values 140 Ω, 200 Ω, 500 Ω, 1 kΩ, 2.8 kΩ, 5 kΩ, 10 kΩ available.

⁶⁾ For all ...MP.. actuators in the contracting and retrofit business.

		Fast running rotary actuators				Very fast running rotary actuators					Very fast running linear actuators	
		TMC..A..	LMC..A..	NMC..A..	SMC..A..	LMQ..A..	NMQ..A..	NMD..A..	SMQ..A..	SMD..A..	LHQ..A..	SHQ..A..
Mechanical accessories												
Shaft extension		AV6-20	AV6-20	AV8-25	AV8-25 AV12-25-I	AV8-25	AV8-25	AV8-25 AV12-25-I		AV8-25 AV12-25-I		
Adapter for auxiliary switch and feedback potentiometer						Z-SPA	Z-SPA		Z-SPA			
End stop kit, rotary support, coupling piece											Z-AS2 Z-DS1 Z-KS2	Z-AS1 Z-DS1 Z-KS1
Baseplate extension				Z-NMA	Z-SMA	Z-NMA				Z-SMA		
Form fit inserts ¹⁾		ZF..LMA ZFRL..LMA	ZF..LMA ZFRL..LMA	ZF..NSA ZF8-NMA	ZF..NSA	ZF..NSA ZF8-NMA	ZF..NSA	ZF..NSA		ZF..NSA		
Crank arm for actuator spindles				AH-20 ²⁾ AH-25	AH-20 AH-25 ⁴⁾	AH-20 ²⁾ AH-25	AH-20 ³⁾ AH-25	AH-20	AH-GMA	AH-20 AH-25 ⁴⁾		
Crank arm for damper spindles				KH8	KH8	KH8	KH8	KH8	KH10	KH8		
Spindle clamp one-side		K-ELA..	K-ELA..	K-ENMA K-ENSA	K-ENSA K-ENSA-I	K-ENMA K-ENSA	K-ENSA	K-ENSA K-ENSA-I		K-ENSA K-ENSA-I		
Spindle clamp reversible				K-NA	K-SA	K-NA	K-SA			K-SA		
Ball joints				KG8 KG10A	KG8 KG10A	KG8 KG10A	KG8 KG10A	KG8 KG10A	KG10A	KG8 KG10A		
Installation kits for linkage operation				ZG-NMA	ZG-SMA	ZG-NMA	ZG-NMA		ZG-GMA	ZG-SMA		
Position indicator		Z-PI	Z-PI	Z-PI	Z-PI	Z-PI	Z-PI	Z-PI	Z-PI	Z-PI		
Electrical accessories												
Auxiliary switch		S1A S2A	S1A S2A	S1A S2A	S1A S2A	S1A ⁵⁾ S2A ⁵⁾	S1A ⁵⁾ S2A ⁵⁾	S1A S2A	S1A ⁵⁾ S2A ⁵⁾	S1A S2A		
Room temperature controller for modulating actuators		EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T		EXT-T24... CR24... T24A1T		EXT-T24... CR24... T24A1T	EXT-T24... CR24... T24A1T
Feedback potentiometer		P..A ⁶⁾	P..A ⁶⁾	P..A ⁶⁾	P..A ⁶⁾	P..A ^{5) 6)}	P..A ^{5) 6)}	P..A ^{5) 6)}	P..A ^{5) 6)}	P..A ⁶⁾		
Signal converter voltage/current for modulating actuators		Z-UIC	Z-UIC	Z-UIC	Z-UIC	Z-UIC	Z-UIC		Z-UIC		Z-UIC	Z-UIC
Digital position indication for modulating actuators		ZAD24	ZAD24	ZAD24	ZAD24	ZAD24	ZAD24		ZAD24		ZAD24	ZAD24
Positioner / range controller for modulating actuators		EXT-SA24	EXT-SA24	EXT-SA24	EXT-SA24	EXT-SA24	EXT-SA24		EXT-SA24		EXT-SA24	EXT-SA24
Parameterising devices												
Adjustment and diagnostic device				ZTH AP ⁷⁾ ZTH EU ⁷⁾	ZTH AP ⁷⁾ ZTH EU ⁷⁾							

¹⁾ Form fit inserts: TMC..A../LMC..A..: 8x8 mm, 10x10 mm, 12x12 mm; NMC..A..: 8x8 mm, 10x10 mm, 12x12 mm, 16x16 mm; SMC..A../SMD..A../NMD..A..: 10x10 mm, 12x12 mm, 15x15 mm, 16x16 mm; LMQ..A..: 8x8 mm, 10x10 mm, 12x12 mm, 15x15 mm, 16x16 mm, 16x16 mm, NMQ..A..: 10x10 mm, 12x12 mm, 15x15 mm, 16x16 mm.

²⁾ Only in combination with reversible spindle clamp K-NA.

³⁾ Only in combination with reversible spindle clamp K-SA.

⁴⁾ Only in combination with one-sided spindle clamp K-ENSA.

⁵⁾ Auxiliary switch and feedback potentiometer on LMQ..A., NMQ..A and SMQ..A actuators in combination with a reversible spindle clamp (mounted below for short-axis installation) can only ever be used together with adapter Z-SPA.

⁶⁾ Resistance values 140 Ω, 200 Ω, 500 Ω, 1 kΩ, 2.8 kΩ, 5 kΩ, 10 kΩ available.

⁷⁾ For all ..MP../..MA../..PC../..R9 actuators in the contracting and retrofit business.


	RobustLine rotary actuators for extreme conditions			IP 66 / NEMA4 – Rotary actuators for outdoor applications					Actuators with high torque
	without fail-safe function		with fail-safe function	without fail-safe function		with fail-safe function			
	NM..P..	SM..P..	NKQ..P..	SMQ..G..	GM..G..	NF..G..	SF..G..	GK..G..	
Mechanical accessories									
Crank arm for actuator spindles				AH-GMA	AH-GMA	AH-GMA	AH-GMA	AH-GMA	
Crank arm for damper spindles				KH10	KH10	KH10	KH10	KH10	
Ball joints				KG10A	KG10A	KG10A	KG10A	KG10A	
Installation kits for linkage operation				ZG-GMA	ZG-GMA	ZG-GMA	ZG-GMA	ZG-GMA	
Adapter kit									ZPR..
Electrical accessories									
Heating with hygrostat AC 230 V (only available fitted ex factory)		HH230	HH230	HH230-MG	HH230-MG	HH230-FG	HH230-FG	HH230-MG	
Heating with hygrostat AC/DC 24 V (only available fitted ex factory)				HH24-MG	HH24-MG	HH24-FG	HH24-FG	HH24-MG	
Heating with thermostat AC 230 V (only available fitted ex factory)		HT230	HT230	HT230-MG	HT230-MG	HT230-FG	HT230-FG	HT230-MG	
Heating with thermostat AC/DC 24V (only available fitted ex factory)				HT24-MG	HT24-MG	HT24-FG	HT24-FG	HT24-MG	
Auxiliary switch		S2A GR	S2A GR	S2A	S2A	(S2A-F GR) ¹⁾	(S2A-F GR) ¹⁾	(S2A) ¹⁾	
Room temperature controller for modulating actuators		CR24..	CR24..	CR24..	CR24..	CR24..	CR24..	CR24..	
Feedback potentiometer		P..A GR ²⁾	P..A GR ²⁾	P..A ²⁾	P..A ²⁾	P..A ¹⁾²⁾	P..A ¹⁾²⁾	P..A ¹⁾²⁾	
Signal converter voltage/current for modulating actuators		Z-UIC	Z-UIC	Z-UIC	Z-UIC	Z-UIC	Z-UIC	Z-UIC	
Digital position indication for modulating actuators		ZAD24	ZAD24	ZAD24	ZAD24	ZAD24	ZAD24	ZAD24	
Positioner / range controller for modulating actuators		EXT-SA24	EXT-SA24	EXT-SA24	EXT-SA24	EXT-SA24	EXT-SA24	EXT-SA24	
Parameterising devices									
Adjustment and diagnostic device		ZTH AP ³⁾ ZTH EU ³⁾	ZTH AP ³⁾ ZTH EU ³⁾		ZTH AP ³⁾ ZTH EU ³⁾	ZTH AP ³⁾ ZTH EU ³⁾	ZTH AP ³⁾ ZTH EU ³⁾	ZTH AP ³⁾ ZTH EU ³⁾	ZTH AP ³⁾ ZTH EU ³⁾
Belimo Assistant App									•

¹⁾ Combination only on request. Please get in touch with your local BELIMO contact person.

²⁾ Resistance values 140 Ω, 200 Ω, 500 Ω, 1 kΩ, 2.8 kΩ, 5 kΩ, 10 kΩ available.

³⁾ For all ..24A-MP(..)-, ..24P-MP(..)- und ..24G-MP(..) actuators in the contracting and retrofit business.

For form fit inserts, please get in touch with your local Belimo contact person.

Nominal voltage 24 V AC/DC 100...240 V AC	Direction of rotation	Angle of rotation	Degree of protection	Nominal torque	1 Nm
				Damper size up to approx.	0.2 m ²
				 UM..	

Open-close, 3-point

24 V	↻ counter-clockwise rotation	max. 180°, can be limited at both ends with adjustable mechanical end stops	IP 20	UM24Y-L.1
	↻ clockwise rotation			UM24Y-R.1
230 V	↻ counter-clockwise rotation	max. 180°, can be limited at both ends with adjustable mechanical end stops	IP 20	UM230Y-L.1
	↻ clockwise rotation			UM230Y-R.1

Modulating (2–10 V)^{1), 2)}

24 V	↻ counter-clockwise rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	IP 20	UM24Y-SR-L.1
	↻ clockwise rotation			UM24Y-SR-R.1

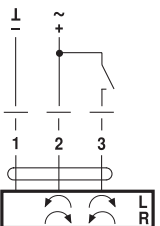
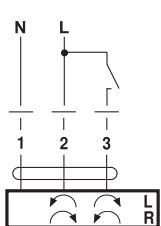
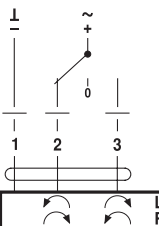
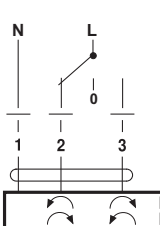
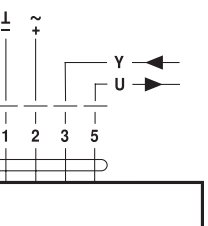
Technical data

Spindle diameter	6 – 12.7 mm / 8x8mm
Running time motor 90°	75 s
Connection	Molex Mini-Fit Jr. plug (purchase separately)
Sound power level	≤35 dB(A) @ 75 s
EMC	CE according to 2014/30/EU
Ambient temperature	-30...+50°C
Non-operating temperature	-40...+80°C
Ambient humidity	95% r.h., non-condensating

¹⁾ Modulating actuators: control signal Y = DC 0–10 V, 100 kΩ; operating range 2–10 V / position feedback U = DC 2–10 V, max. 1 mA.

²⁾ Direction of rotation: Type ..-L: Control signal Y = 0 V end stop left / Type ..-R: Control signal Y = 0 V end stop right
Other versions on request.

Electrical installation

Open-close		3-point		Modulating
UM24..	UM230..	UM24..	UM230..	UM24...SR..
				 Y = DC 0–10 V U = DC 2–10 V

Nominal voltage 24 V AC/DC 230 V AC	Direction of rotation	Angle of rotation	Degree of protection	Nominal torque	2 Nm
				Damper size up to approx.	0.4 m ²
				 CM..	

Open-close, 3-point

24 V	↶ counter-clockwise rotation	0–287.5° / without limits	IP 54	CM24-L
	↷ clockwise rotation			CM24-R
	↶ counter-clockwise rotation		IP 66	CM24G-L
	↷ clockwise rotation			CM24G-R
230 V	↶ counter-clockwise rotation	0–287.5° / without limits	IP 54	CM230-L
	↷ clockwise rotation			CM230-R
	↶ counter-clockwise rotation		IP 66	CM230G-L
	↷ clockwise rotation			CM230G-R

Modulating (2–10 V)^{1), 2)}

24 V	↶ counter-clockwise rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	IP 54	CM24-SR-L
	↷ clockwise rotation			CM24-SR-R
	↶ counter-clockwise rotation		IP 66	CM24G-SR-L
	↷ clockwise rotation			CM24G-SR-R

Modulating (2–10 V) with adaption^{1), 2)}

24 V	↶ counter-clockwise rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	IP 54	CM24-SX-L
	↷ clockwise rotation			CM24-SX-R

Technical data



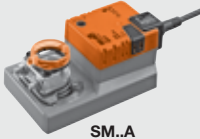

Spindle diameter	6–12.7 mm
Running time motor 90°	75 s
Manual override	Gear disengagement with magnet
Connection	Connecting cable 1 m
Position indication	Mechanical, add-on
Sound power level	≤35 dB(A) @ 75 s
EMC	CE according to 2014/30/EU
Ambient temperature	–30...+50°C
Non-operating temperature	–40...+80°C
Ambient humidity	95% r.h., non-condensating

¹⁾ Modulating actuators: control signal Y = DC 0–10 V, 100 kΩ; operating range 2–10 V / position feedback U = DC 2–10 V, max. 1 mA.

²⁾ Direction of rotation: Type ..-L: Control signal Y = 0 V end stop left / Type ..-R: Control signal Y = 0 V end stop right
Other versions on request.

Electrical installation

Open-close	3-point	Modulating
CM24..., CM230..	CM24..., CM230..	CM24...-SR..., CM24...-SX..
		<p>Y = DC 0–10 V U = DC 2–10 V</p>

Nominal torque	5 Nm	10 Nm	20 Nm	40 Nm
	1 m ²	2 m ²	4 m ²	8 m ²
Damper size up to approx.				
Nominal voltage 24 V AC/DC 230 V AC	 LM..A	 NM..A	 SM..A	 GM..A
Auxiliary switch SPDT				

Open-close, 3-point

		Open-close			
24 V	1	LM24A	NM24A	SM24A	GM24A
		LM24A-S	NM24A-S	SM24A-S	
230 V	1	LM230A	NM230A	SM230A	GM230A
		LM230A-S	NM230A-S	SM230A-S	

Modulating (2–10 V)¹⁾

24 V		LM24A-SR	NM24A-SR	SM24A-SR	GM24A-SR
230 V		LM230ASR	NM230ASR	SM230ASR	

Parameterisable²⁾

24 V		LM24A-MP	NM24A-MP	SM24A-MP	GM24A-MP
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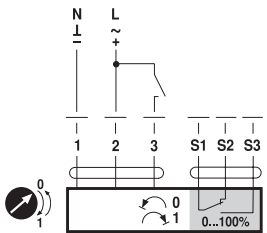
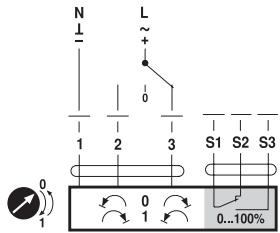
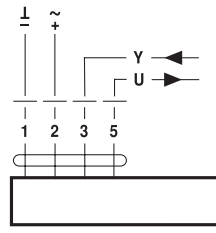
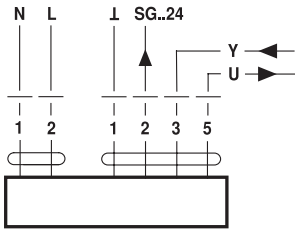
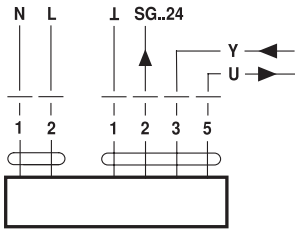
Technical data


Spindle diameter	6–20 mm	8–26.7 mm	10–20 mm	12–26.7 mm
Running time motor 90°	150 s	150 s	150 s	150 s
Manual override	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked
Connection	Connecting cable 1 m	Connecting cable 1 m	Connecting cable 1 m	Connecting cable 1 m
Direction of rotation	Can be selected with switch	Can be selected with switch	Can be selected with switch	Can be selected with switch
Angle of rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops
Position indication	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on
Sound power level	≤35 dB(A) @ 150 s	≤35 dB(A) @ 150 s	≤45 dB(A) @ 150 s	≤45 dB(A) @ 150 s
Degree of protection	IP 54	IP 54	IP 54	IP 54
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU
Ambient temperature	–30...+50 °C	–30...+50 °C	–30...+50 °C	–30...+50 °C
Non-operating temperature	–40...+80 °C	–40...+80 °C	–40...+80 °C	–40...+80 °C
Ambient humidity	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating

¹⁾ Modulating actuators: control signal Y = DC 0–10 V, 100 kΩ; operating range 2–10 V / position feedback U = DC 2–10 V, max. 1 mA.

²⁾ Control, operating range, position feedback, running time and further functions can be set on MP types with PC-Tool or the parameterising device ZTH AP/ ZTH EU. Other versions on request.

Electrical installation

Open-close	3-point	Modulating	Parameterisable	Modulating
..M24A, ..M24A-S, ..M230A, ..M230A-S	..M24A, ..M24A-S, ..M230A, ..M230A-S	..M24A-SR	..M24A-MP	..M230ASR
	(for GM..A not permitted) 	Y = DC 0–10 V U = DC 2–10 V 	Y = Control signal U = Position feedback 	Y = DC 0–10 V U = DC 2–10 V 

Nominal voltage 24 V AC/DC	Direction of rotation	Angle of rotation	Degree of protection	Nominal torque	2 Nm
				Damper size up to approx.	0.4 m ²
				 CM..-T.	
Open-close, 3-point					
24 V	↻ counter-clockwise rotation	0 – 287.5° / without limits	IP 20	CM24-T-L	
	↻ clockwise rotation			CM24-T-R	
Modulating (2 – 10 V) ^{1), 2)}					
24 V	↻ counter-clockwise rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	IP 20	CM24-SR-T-L	
	↻ clockwise rotation			CM24-SR-T-R	
Modulating (2 – 10 V) with adaption ^{1), 2)}					
24 V	↻ counter-clockwise rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	IP 20	CM24-SX-T-L	
	↻ clockwise rotation			CM24-SX-T-R	

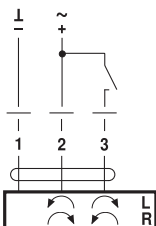
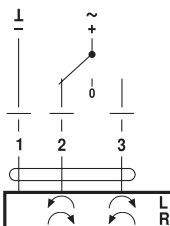
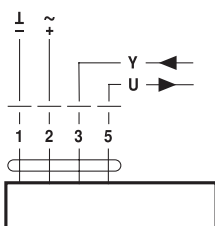
Technical data


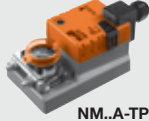

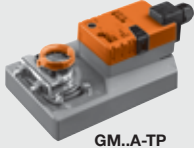
Spindle diameter	6 – 12.7 mm
Running time motor 90°	75 s
Manual override	Gear disengagement with magnet
Connection	Connecting terminals
Position indication	Mechanical, add-on
Sound power level	≤35 dB(A) @ 75 s
EMC	CE according to 2014/30/EU
Ambient temperature	–30...+50°C
Non-operating temperature	–40...+80°C
Ambient humidity	95% r.h., non-condensating

¹⁾ Modulating actuators: control signal Y = DC 0–10 V, 100 kΩ; operating range 2–10 V / position feedback U = DC 2–10 V, max. 1 mA.

²⁾ Direction of rotation: Type ..-L: Control signal Y = 0 V end stop left / Type ..-R: Control signal Y = 0 V end stop right
Other versions on request.

Electrical installation

Open-close CM24..	3-point CM24..	Modulating CM24..-SR.., CM24..-SX ..
		<p>Y = DC 0 – 10 V U = DC 2 – 10 V</p> 

Nominal torque	5 Nm	10 Nm	20 Nm	40 Nm
Damper size up to approx.	1 m ²	2 m ²	4 m ²	8 m ²
Nominal voltage 24 V AC/DC 230 V AC	 LM..A-TP	 NM..A-TP	 SM..A-TP	 GM..A-TP
Auxiliary switch SPDT				

Open-close, 3-point

					Open-close
24 V	1	LM24A-TP	NM24A-TP	SM24A-TP	GM24A-TP
		LM24A-S-TP	NM24A-S-TP	SM24A-S-TP	
230 V	1	LM230A-TP	NM230A-TP	SM230A-TP	GM230A-TP
		LM230A-S-TP	NM230A-S-TP	SM230A-S-TP	

Modulating (2 – 10 V) ¹⁾

24 V	LM24A-SR-TP	NM24A-SR-TP	SM24A-SR-TP	GM24A-SR-TP
230 V	LM230ASR-TP	NM230ASR-TP	SM230ASR-TP	

Parameterisable ²⁾

24 V	LM24A-MP-TP	NM24A-MP-TP	SM24A-MP-TP	GM24A-MP-TP
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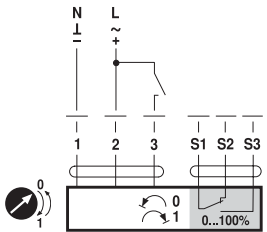
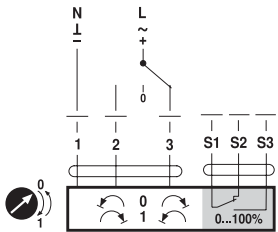
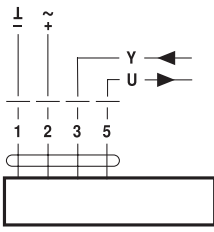
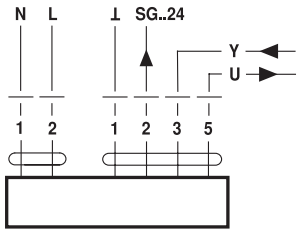
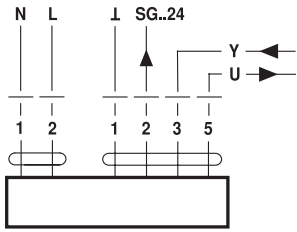
Technical data

Spindle diameter	6 – 20 mm	8 – 26.7 mm	10 – 20 mm	12 – 26.7 mm
Running time motor 90°	150 s	150 s	150 s	150 s
Manual override	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked
Connection	Connecting terminals	Connecting terminals	Connecting terminals	Connecting terminals
Direction of rotation	Can be selected with switch	Can be selected with switch	Can be selected with switch	Can be selected with switch
Angle of rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops
Position indication	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on
Sound power level	≤35 dB(A) @ 150 s	≤35 dB(A) @ 150 s	≤45 dB(A) @ 150 s	≤45 dB(A) @ 150 s
Degree of protection	IP 54	IP 54	IP 54	IP 54
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU
Ambient temperature	-30...+50 °C	-30...+50 °C	-30...+50 °C	-30...+50 °C
Non-operating temperature	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C
Ambient humidity	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating

¹⁾ Modulating actuators: control signal Y = DC 0 – 10 V, 100 kΩ; operating range 2 – 10 V / position feedback U = DC 2 – 10 V, max. 1 mA.

²⁾ Control, operating range, position feedback, running time and further functions can be set on MP types with PC-Tool or the parameterising device ZTH AP/ ZTH EU. Other versions on request.

Electrical installation

Open-close	3-point	Modulating	Parameterisable	Modulating
..M24A-TP, ..M24A-S-TP, ..M230A-TP, ..M230A-S-TP	..M24A-TP, ..M24A-S-TP, ..M230A-TP, ..M230A-S-TP	..M24A-SR-TP	..M24A-MP-TP	..M230ASR-TP
	(for GM..A.. not permitted) 	Y = DC 0 – 10 V U = DC 2 – 10 V 	Y = Control signal U = Position feedback 	Y = DC 0 – 10 V U = DC 2 – 10 V 

Actuating force		50 N	125 N	150 N	450 N
Damper size up to approx.		0.4 m ²	0.8 m ²	1 m ²	3 m ²
Stroke (gear rod)	Nominal voltage 24 V AC/DC 230 V AC				

Open/close, 3-point

Stroke	Nominal voltage	50 N	125 N	150 N	450 N
60 mm	24 V	UH24Y-L.1	CH24-L60.2	LH24A60	
100 mm			CH24-L100.2	LH24A100	SH24A100
200 mm				LH24A200	SH24A200
300 mm				LH24A300	SH24A300
60 mm	230 V	UH230Y-L.1	CH230-L60.2	LH230A60	
100 mm			CH230-L100.2	LH230A100	SH230A100
200 mm				LH230A200	SH230A200
300 mm				LH230A300	SH230A300

Modulating (2 – 10 V)

Stroke	Nominal voltage	Direction of stroke		150 N	450 N
		0 ²⁾	1 ²⁾		
60 mm	24 V	UH24Y-SR-L.1	CH24-SR-L60.2	CH24-SR-R60.2	
100 mm			CH24-SR-L100.2	CH24-SR-R100.2	LH24A-SR100
200 mm					LH24A-SR200
100 mm	230 V				LH230ASR100
200 mm					LH230ASR200

Modulating (2 – 10 V) with adaption¹⁾

Stroke	Nominal voltage	Direction of stroke		150 N	450 N
		0 ²⁾	1 ²⁾		
40 mm	24 V		CH24-SX-L40.2	CH24-SX-R40.2	
100 mm			CH24-SX-L100.2	CH24-SX-R100.2	

Parameterisable³⁾

Stroke	Nominal voltage	Connecting cable		Connecting terminals	
		150 N	450 N	150 N	450 N
60 mm	24 V			LH24A-MP60-TP	
100 mm			LH24A-MP100	LH24A-MP100-TP	SH24A-MP100
200 mm			LH24A-MP200	LH24A-MP200-TP	SH24A-MP200
300 mm			LH24A-MP300	LH24A-MP300-TP	SH24A-MP300

Technical data

	50 N	125 N	150 N	450 N
Running time motor 100 mm	122 s	380 s	150 s	150 s
Manual override	No manual override	Gear disengagement with magnet	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked
Connection	Molex Mini-Fit Jr. plug (purchase separately)	Connecting cable 1 m	Connecting cable 1 m / connecting terminals	Connecting cable 1 m
Direction of stroke	Can be selected via contact	Can be selected via contact	Can be selected with switch	Can be selected with switch
Stroke height	Adjustable in 1 mm increments	Adjustable in 20 mm increments	Adjustable in 20 mm increments	Adjustable in 20 mm increments
Sound power level	35 dB(A) @ 74 s	≤35 dB(A) @ 380 s	≤45 dB(A) @ 150 s	≤52 dB(A) @ 150 s
Degree of protection	IP 20	IP 54	IP 54	IP 54
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU
Ambient temperature	-30...+50 °C	-30...+50 °C	-30...+50 °C	-30...+50 °C
Non-operating temperature	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C
Ambient humidity	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating





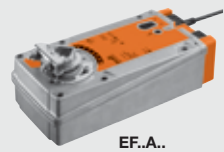
¹⁾ Modulating actuators: control signal Y = DC 0 – 10 V, 100 kΩ; operating range 2 – 10 V / position feedback U = DC 2 – 10 V, max. 1 mA.

²⁾ Direction of stroke 0: when Y = 0 V gear rod is drawn in / direction of stroke 1: when Y = 0 V gear rod is extended.

³⁾ Control, operating range, position feedback, running time and further functions on MP types can be set with PC-Tool or the parameterising device ZTH AP/ ZTH EU.

Electrical installation

Open-close	3-point	Modulating		Parameterisable	Modulating
..H24A.., ..H230A.., UH24Y.., UH230Y..	..H24A.., ..H230A.., UH24Y.., UH230Y..	CH24-S.., ..H24A-SR..	UH24Y-SR..	..H24A-MP..	..H230ASR..
<p>Priority on 3</p>		<p>Y = DC 0 – 10 V U = DC 2 – 10 V</p>	<p>Y = DC 2 – 10 V U = DC 2 – 10 V</p>	<p>Y = Control signal U = Position feedback</p>	<p>Y = DC 0 – 10 V U = DC 2 – 10 V</p>

Nominal torque		2.5 Nm	4 Nm	10 Nm	20 Nm	30 Nm					
Damper size up to approx.		0.5 m ²	0.8 m ²	2 m ²	4 m ²	6 m ²					
Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°										
		TF..	LF..	NF.A..	SF.A..	EF.A..					
Open-close		without auxiliary switch	with 1 auxiliary switch SPDT	without auxiliary switch	with 1 auxiliary switch SPDT	without auxiliary switch	with 2 auxiliary switches SPDT	without auxiliary switch	with 2 auxiliary switches SPDT	without auxiliary switch	with 2 auxiliary switches SPDT
24 V	40–75 s			LF24	LF24-S						
	75 s	TF24	TF24-S			NF24A	NF24A-S2	SF24A	SF24A-S2	EF24A	EF24A-S2
230 V	40–75 s			LF230	LF230-S						
	75 s	TF230	TF230-S							EF230A	EF230A-S2
AC 24–240 V DC 24–125 V	75 s					NFA	NFA-S2	SFA	SFA-S2		
Modulating (2–10 V)¹⁾		without auxiliary switch	without auxiliary switch	without auxiliary switch	with 2 auxiliary switches SPDT	without auxiliary switch	with 2 auxiliary switches SPDT	without auxiliary switch	with 2 auxiliary switches SPDT	without auxiliary switch	with 2 auxiliary switches SPDT
24 V	150 s	TF24-SR		LF24-SR		NF24A-SR	NF24A-SR-S2	SF24A-SR	SF24A-SR-S2	EF24A-SR	EF24A-SR-S2
230 V	150 s	TF230-SR									
Parameterisable²⁾		without auxiliary switch	without auxiliary switch	without auxiliary switch	without auxiliary switch	without auxiliary switch	without auxiliary switch	without auxiliary switch	without auxiliary switch	without auxiliary switch	without auxiliary switch
24 V	40–75 s			LF24-MFT2							
	75 s	TF24-MFT				NF24A-MP		SF24A-MP		EF24A-MP	

Technical data		2.5 Nm	4 Nm	10 Nm	20 Nm	30 Nm
Spindle diameter		6–12 mm	8–16 mm	10–25.4 mm	10–25.4 mm	12–26.7 mm
Running time emergency setting position 90°		<25 s	20 s	<20 s	<20 s	<20 s
Manual override		–	–	Hand crank	Hand crank	Hand crank
Connection		Connecting cable 1 m, PVC	Connecting cable 1 m, PVC	Connecting cable 1 m, PVC	Connecting cable 1 m, PVC	Connecting cable 1 m, FRNC
Direction of rotation		Can be selected by left-hand/right-hand installation	Can be selected by left-hand/right-hand installation	Can be selected by left-hand/right-hand installation	Can be selected by left-hand/right-hand installation	Can be selected by left-hand/right-hand installation
Angle of rotation		max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops
Position indication		Mechanical, add-on	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on
Motor sound power level		≤50 dB(A) @ 75 s	≤50 dB(A) @ 75 s	≤45 dB(A) @ 75 s	≤45 dB(A) @ 75 s	≤50 dB(A) @ 75 s
Fail-safe function sound power level		≤62 dB(A) @ 25 s	≤62 dB(A) @ 20 s	≤62 dB(A) @ 20 s	≤62 dB(A) @ 20 s	≤62 dB(A) @ 20 s
Degree of protection		IP 42	IP 54	IP 54	IP 54	IP 54 / IP 66 ³⁾
EMC		CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU
Ambient temperature		–30...+50 °C	–30...+50 °C	–30...+50 °C	–30...+50 °C	–30...+50 °C ⁴⁾
Non-operating temperature		–40...+80 °C	–40...+80 °C	–40...+80 °C	–40...+80 °C	–40...+80 °C
Ambient humidity		95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating

¹⁾ Modulating actuators: control signal Y = DC 0–10 V, 100 kΩ; operating range 2–10 V / position feedback U = DC 2–10 V, max. 1 mA.

²⁾ Control, operating range, position feedback, running time and further functions can be set on MP types with PC-Tool or the parameterising device ZTH AP/ ZTH EU.

³⁾ IP 66 versions on request.

⁴⁾ Heating for ambient temperatures to –40 °C on request.

Other versions on request.

Electrical installation

Open-close		3-point
<p>..F24, ..F24-S, ..F230, ..F230-S</p>		<p>TF24-3, ..F24A-3</p>
<p>..F24A, ..F24A-S2, ..F230A, ..F230A-S2, ..FA, ..FA-S2</p>		
Modulating		Parameterisable
<p>TF24-SR, TF230-SR, ..F24A-SR, ..F24A-SR-S2</p> <p>Y = DC 0-10 V U = DC 2-10 V</p>		<p>..F24-MFT.., ..F24A-MP</p> <p>Y = Control signal U = Position feedback</p>

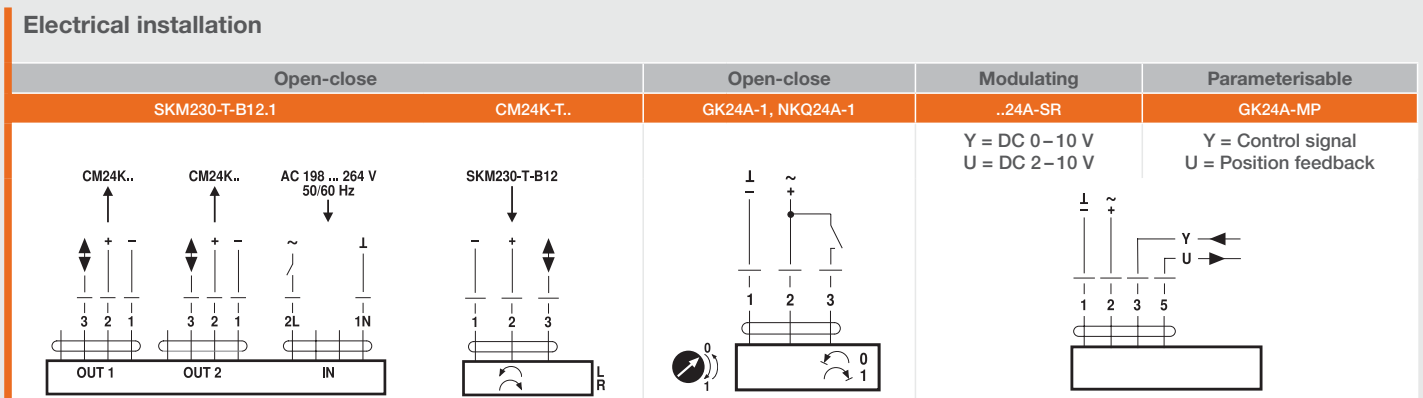
Direction of rotation

Modulating		
<p>TF24-SR, TF230-SR</p>	<p>LF24-SR</p>	<p>..F24A-SR, ..F24A-SR-S2</p>

Nominal torque	2 Nm	6 Nm	40 Nm
	0.4 m ²	1.2 m ²	8 m ²
Damper size up to approx.			
Nominal voltage 24 V AC/DC 230 V AC			
Open-close	counter-clockwise rotation clockwise rotation		
	24 V	CM24K-T-L.2 CM24K-T-R.2	NKQ24A-1 GK24A-1
External SuperCap module	230 V	SKM230-T-B12.1	
Modulating (2–10 V) ¹⁾	24 V		NKQ24A-SR GK24A-SR
Parameterisable ²⁾	24 V		GK24A-MP

Technical data			
Spindle diameter	6–12.7 mm	8–26.7 mm	12–26.7 mm
Running time motor 90°	75 s	4 s	150 s
Running time emergency setting position 90°	15 s	4 s	35 s
Manual override	Gear disengagement with magnet	Gear disengagement with push-button	Gear disengagement with push-button
Direction of rotation	Can be selected via actuator	Can be selected with switch	Can be selected with switch
Connection	Connecting terminals	Connecting cable 1 m	Connecting cable 1 m
Angle of rotation	max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops
Position indication	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on
Motor sound power level	≤35 dB(A) @ 75 s	≤60 dB(A) @ 4 s	≤52 dB(A) @ 150 s
Fail-safe function sound power level	≤55 dB(A) @ 15 s	≤60 dB(A) @ 4 s	≤61 dB(A) @ 35 s
Degree of protection	IP 20 (CM24..) / IP 40 (SKM..)	IP 54	IP 54
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU
Ambient temperature	–30...+50 °C	–30...+50 °C	–30...+50 °C
Non-operating temperature	–40...+80 °C	–40...+80 °C	–40...+80 °C
Ambient humidity	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating

¹⁾ Modulating actuators: control signal Y = DC 0–10 V, 100 kΩ; operating range 2–10 V / position feedback U = DC 2–10 V, max. 0.5 mA.
²⁾ Control, operating range, position feedback, running time and further functions can be set on MP types with PC-Tool or the parameterising device ZTH AP/ ZTH EU.
 Other versions on request.



Electrical and mechanical accessories on [page 8](#)

Nominal torque	2 Nm	5 Nm	10 Nm	20 Nm
	0.4 m ²	1 m ²	2 m ²	4 m ²
Damper size up to approx.				
Nominal voltage 24 V AC/DC 230 V AC	<p>TMC..A</p>	<p>LMC..A</p>	<p>NMC..A-MP</p>	<p>SMC..A-MP</p>
Auxiliary switch SPDT				

Open-close, 3-point

24 V	1	TMC24A	LMC24A		
		TMC24A-S			
230 V	1	TMC230A	LMC230A		
		TMC230A-S			

Modulating (2–10 V)¹⁾

24 V		TMC24A-SR	LMC24A-SR		
230 V		TMC230ASR			

Parameterisable²⁾

24 V				NMC24A-MP	SMC24A-MP
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Technical data


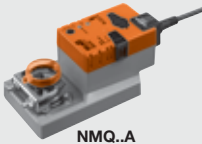
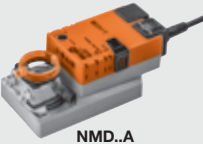
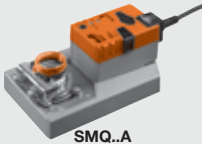

Spindle diameter	6–20 mm	6–20 mm	8–26.7 mm	10–20 mm
Running time motor 90°	35 s	35 s	35 s	35 s
Manual override	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked
Connection	Connecting cable 1 m	Connecting cable 1 m	Connecting cable 1 m	Connecting cable 1 m
Direction of rotation	Can be selected with switch	Can be selected with switch	Can be selected with switch	Can be selected with switch
Angle of rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops
Position indication	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on
Sound power level	≤40 dB(A) @ 35 s	≤45 dB(A) @ 35 s	≤45 dB(A) @ 35 s	≤55 dB(A) @ 35 s
Degree of protection	IP 54	IP 54	IP 54	IP 54
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU
Ambient temperature	–30...+50 °C	–30...+50 °C	–30...+50 °C	–30...+50 °C
Non-operating temperature	–40...+80 °C	–40...+80 °C	–40...+80 °C	–40...+80 °C
Ambient humidity	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating

¹⁾ Modulating actuators: control signal Y = DC 0–10 V, 100 kΩ; operating range 2–10 V / position feedback U = DC 2–10 V, max. 1 mA.

²⁾ Control, operating range, position feedback, running time and further functions can be set on MP types with PC-Tool or the parameterising device ZTH AP/ ZTH EU. Other versions on request.

Electrical installation

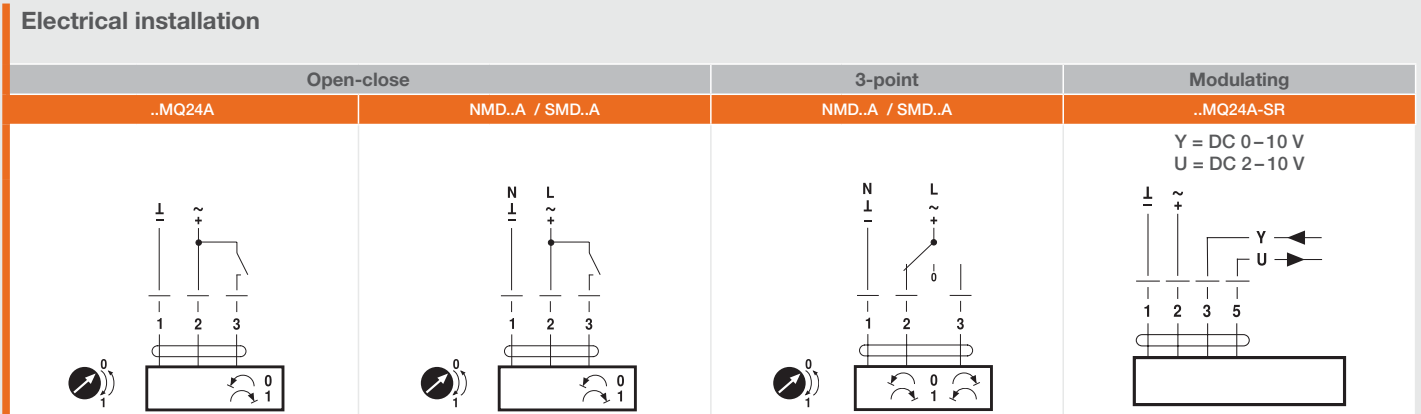
Open-close	3-point	Modulating	Parameterisable	Modulating
..MC24A, TMC24A-S, ..MC230A, TMC230A-S	..MC24A, TMC24A-S, ..MC230A, TMC230A-S	..MC24A-SR	..MC24A-MP	TMC230ASR
		<p>Y = DC 0–10 V U = DC 2–10 V</p>	<p>Y = Control signal U = Position feedback</p>	<p>Y = DC 0–10 V U = DC 2–10 V</p>

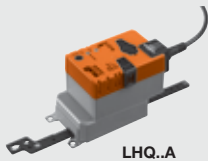
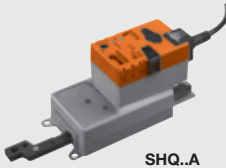
Nominal torque Damper size up to approx.	4 Nm	8 Nm	8 Nm	16 Nm	16 Nm
	0.8 m ²	1.5 m ²	1.5 m ²	3.2 m ²	3.2 m ²
Nominal voltage 24 V AC/DC 230 V AC					

Open-close					
24 V	LMQ24A	NMQ24A		SMQ24A	
Open-close, 3-point					
24 V					SMD24A
230 V			NMD230A		SMD230A
Modulating (2–10 V)¹⁾					
24 V	LMQ24A-SR	NMQ24A-SR		SMQ24A-SR	

Technical data					
Spindle diameter	8–26.7 mm	8–26.7 mm	10–20 mm	12–26.7 mm	10–20 mm
Running time motor 90°	2.5 s	4 s	20 s	7 s	20 s
Manual override	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked
Connection	Connecting cable 1 m	Connecting cable 1 m	Connecting cable 1 m	Connecting cable 1 m	Connecting cable 1 m
Direction of rotation	Can be selected with switch	Can be selected with switch	Can be selected with switch	Can be selected with switch	Can be selected with switch
Angle of rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops
Position indication	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on
Sound power level	≤54 dB(A) @ 2.5 s	≤56 dB(A) @ 4 s	≤55 dB(A) @ 20 s	≤63 dB(A) @ 7 s	≤55 dB(A) @ 20 s
Degree of protection	IP 54	IP 54	IP 54	IP 54	IP 54
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU
Ambient temperature	-30...+40 °C (+40...+50 °C limited) ²⁾	-30...+40 °C (+40...+50 °C limited) ²⁾	-30...+50 °C	-30...+40 °C (+40...+50 °C limited) ²⁾	-30...+50 °C
Non-operating temperature	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C
Ambient humidity	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating

¹⁾ Modulating actuators: control signal Y = DC 0–10 V, 100 kΩ; operating range 2–10 V / position feedback U = DC 2–10 V, max. 0.5 mA for LMQ..A, NMQ..A, SMQ..A
²⁾ Please get in touch with your local BELIMO contact person.
 Other versions on request.



Nominal voltage 24 V AC/DC	Actuating force	100 N	200 N
	Damper size up to approx.	0.7 m ²	1.3 m ²
			
		LHQ..A	SHQ..A

Open-close

24 V	LHQ24A100	SHQ24A100
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Modulating (2–10 V)¹⁾

24 V	LHQ24A-SR100	SHQ24A-SR100
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Technical data

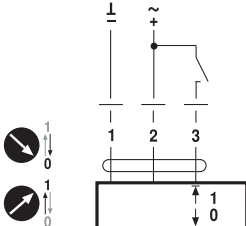
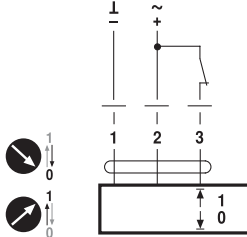
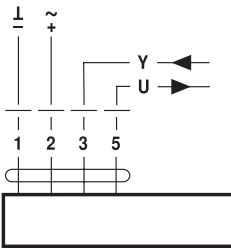
Stroke range	0–100 mm	0–100 mm
Running time motor 100 mm	3.5 s	7 s
Manual override	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked
Connection	Connecting cable 1 m	Connecting cable 1 m
Direction of stroke	Can be selected with switch	Can be selected with switch
Stroke height	20–100 mm, adjustable in 20 mm increments	20–100 mm, adjustable in 20 mm increments
Sound power level	≤56 dB(A) @ 3.5 s	≤56 dB(A) @ 7 s
Degree of protection	IP 54	IP 54
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU
Ambient temperature	–30...+40 °C (+40...+50 °C limited) ²⁾	–30...+40 °C (+40...+50 °C limited) ²⁾
Non-operating temperature	–40...+80 °C	–40...+80 °C
Ambient humidity	95% r.h., non-condensating	95% r.h., non-condensating

¹⁾ Modulating actuators: control signal Y = DC 0–10 V, 100 kΩ; operating range 2–10 V / position feedback U = DC 2–10 V, max. 0.5 mA.

²⁾ Please get in touch with your local BELIMO contact person.

Other versions on request.

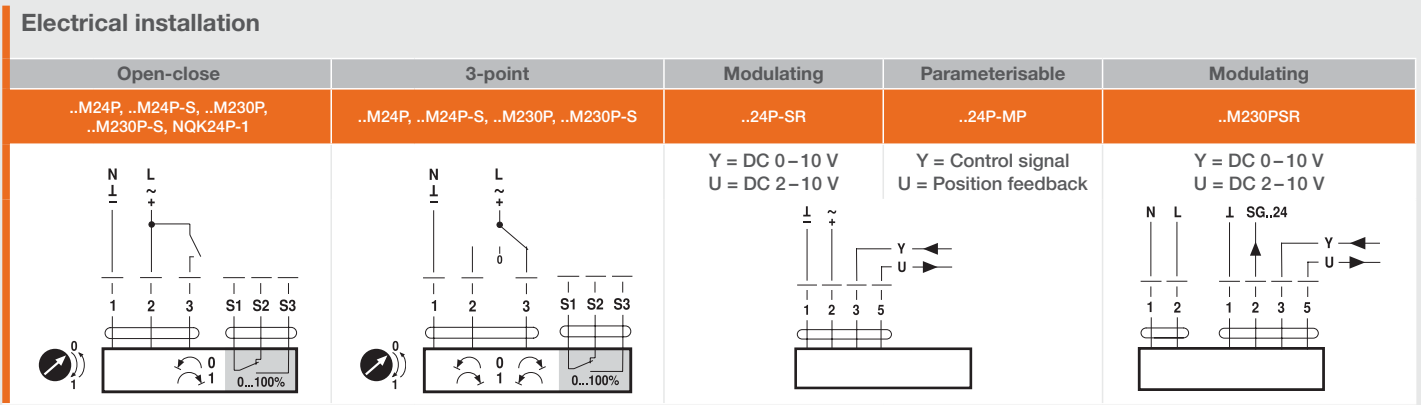
Electrical installation

Open-close	Modulating	
..HQ24A100	..HQ24A-SR	
	<p>Priority on 3</p> 	<p>Y = DC 0–10 V U = DC 2–10 V</p> 

Open/close 3-point (2–10 V) Parameterisable Nominal voltage 24 V AC/DC 230 V AC	Nominal torque	10 Nm	20 Nm	6 Nm		
	Damper size up to approx.		2 m ²	4 m ²	1.2 m ²	
Open/close, 3-point		without auxiliary switch	with 1 auxiliary switch SPDT	without auxiliary switch		
• • • • •	24 V	NM24P	NM24P-S	SM24P	SM24P-S	NKQ24P-1
• • • • •	24 V					
• • • • •	230 V	NM230P ³⁾	NM230P-S ³⁾	SM230P ³⁾	SM230P-S ³⁾	
Modulating (2–10 V)¹⁾		without auxiliary switch	without auxiliary switch	without auxiliary switch		
• • • • •	24 V	NM24P-SR	SM24P-SR	NKQ24P-SR		
• • • • •	230 V	NM230PSR ³⁾	SM230PSR ³⁾			
Parameterisable²⁾		without auxiliary switch	without auxiliary switch	without auxiliary switch		
• • • • •	24 V	NM24P-MP	SM24P-MP			

Technical data		10 Nm	20 Nm	6 Nm
Fail-safe function		–	–	–II–
Spindle diameter		10–20 mm	14–20 mm	10–20 mm
Running time motor 90°		150 s	150 s	4 s
Running time emergency setting position 90°		–	–	4 s
Manual override		Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button
Connection		Connecting cable 1 m, FRNC	Connecting cable 1 m, FRNC	Connecting cable 1 m, FRNC
Direction of rotation		Can be selected with switch	Can be selected with switch	Can be selected with switch
Angle of rotation		max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops
Position indication		Mechanical, add-on	Mechanical, add-on	Mechanical, add-on
Sound power level		≤35 dB(A) @ 150 s	≤45 dB(A) @ 150 s	≤60 dB(A) @ 4 s
Degree of protection		IP 66/67, NEMA 4X	IP 66/67, NEMA 4X	IP 66/67, NEMA 4X
EMC		CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU
Ambient temperature		–30...+50 °C (with heating to –40 °C) ³⁾	–30...+50 °C (with heating to –40 °C) ³⁾	–30...+50 °C
Non-operating temperature		–40...+80 °C	–40...+80 °C	–40...+80 °C
Ambient humidity		100% r.h.	100% r.h.	100% r.h.

–II– = Actuators with fail-safe function.
¹⁾ Modulating actuators: control signal Y = DC 0–10 V, 100 kΩ; operating range 2–10 V / position feedback U = DC 2–10 V, max. 1 mA for NM..P and SM..P, max. 0.5 mA for NKQ..P.
²⁾ Control, operating range, position feedback, running time and further functions can be set on MP types with PC-Tool or the parameterising device ZTH AP/ ZTH EU.
³⁾ Available with heating and thermostat AC 230 V or heating and hygrostat AC 230 V for ambient temperature to –40 °C (see overview of options on page 10).
 Other versions on request.



Electrical and mechanical accessories on page 10

Nominal torque		16 Nm	40 Nm	10 Nm	20 Nm	40 Nm		
Damper size up to approx.		3.2 m ²	8 m ²	2 m ²	4 m ²	8 m ²		
Nominal voltage 24 V AC/DC 230 V AC	Running time motor 90°							
		SMQ..G	GM..G..	NF..G	SF..G	GK..G..		
Open-close		without auxiliary switch	without auxiliary switch	without auxiliary switch	with 2 auxiliary switches SPDT	without auxiliary switch	with 2 auxiliary switches SPDT	without auxiliary switch
24 V	7 s	SMQ24G						GK24G-1
	150 s		GM24G-T					
230 V	150 s		GM230G-T					
	<75 s			NFG-L	NFG-S2-L	SFG-L	SFG-S2-L	
Modulating (2–10 V)¹⁾		without auxiliary switch	without auxiliary switch	without auxiliary switch	with 2 auxiliary switches SPDT	without auxiliary switch	with 2 auxiliary switches SPDT	without auxiliary switch
24 V	7 s	SMQ24G-SR						GK24G-SR
	150 s		GM24G-SR-T	NF24G-SR-L	NF24G-SR-S2-L	SF24G-SR-L	SF24G-SR-S2-L	
Parameterisable²⁾		without auxiliary switch	without auxiliary switch	without auxiliary switch	without auxiliary switch	without auxiliary switch	without auxiliary switch	without auxiliary switch
24 V	<75 s			NF24G-MP-L		SF24G-MP-L		GK24G-MP
	150 s		GM24G-MP-T					

Technical data

Fail-safe function	–	–	•	•	•
Spindle diameter	12–26.7 mm	14–26.7 mm	12–26.7 mm	12–26.7 mm	14–26.7 mm
Running time emergency setting position 90°	–	–	<20 s	<20 s	35 s
Manual override	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Hand crank	Hand crank	Gear disengagement with push-button
Connection	Connecting cable 1 m, FRNC	Connecting terminals	Connecting cable 1 m, FRNC	Connecting cable 1 m, FRNC	Connecting cable 1 m, FRNC
Direction of rotation	Can be selected with switch	Can be selected with switch	↻ counter-clockwise rotation	↻ counter-clockwise rotation	Can be selected with switch
Angle of rotation	max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops	max. 95°, can be limited on both sides with adjustable mechanical end stops
Position indication	Mechanical, pluggable	Mechanical, pluggable	Mechanical, pluggable	Mechanical, pluggable	Mechanical, pluggable
Motor sound power level	≤63 dB(A) @ 7 s	≤45 dB(A) @ 150 s	≤45 dB(A) @ 150 s	≤45 dB(A) @ 150 s	≤52 dB(A) @ 150 s
Fail-safe function sound power level	–	–	≤62 dB(A) @ 20 s	≤62 dB(A) @ 20 s	≤61 dB(A) @ 35 s
Degree of protection	IP 66/67, NEMA 4X	IP 66/67, NEMA 4X	IP 66/67, NEMA 4X	IP 66/67, NEMA 4X	IP 66/67, NEMA 4X
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU
Ambient temperature	–30...+40 °C ³⁾ (+40...+50 °C limited ⁴⁾)	–30...+50 °C ³⁾	–30...+50 °C ³⁾	–30...+50 °C ³⁾	–30...+50 °C ³⁾
Non-operating temperature	–40...+80 °C	–40...+80 °C	–40...+80 °C	–40...+80 °C	–40...+80 °C
Ambient humidity	100% r.h.	100% r.h.	100% r.h.	100% r.h.	100% r.h.

• = Actuators with fail-safe function.

¹⁾ Modulating actuators: control signal Y = DC 0–10 V, 100 kΩ; operating range 2–10 V / position feedback U = DC 2–10 V, max. 1 mA for GM..G, NF..G and SF..G, max. 0.5 mA for SMQ..G and GK..G.

²⁾ Control, operating range, position feedback, running time and further functions on MP types can be set with PC-Tool or the parameterising device ZTH AP/ ZTH EU.

³⁾ Available with heating and thermostat/hygrostat for ambient temperature to –40 °C (see overview of options on page 10).



⁴⁾ Please get in touch with your local BELIMO contact person.

Other versions on request.

Electrical installation

Open-close	Modulating	Parameterisable	
..FG..-L	GM..G, GK24G-1, SMQ24G	..24G-SR..	..24G-MP..
	Y = DC 0–10 V U = DC 2–10 V 	Y = Control signal U = Position feedback 	

Electrical and mechanical accessories on page 10

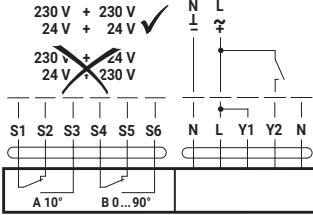
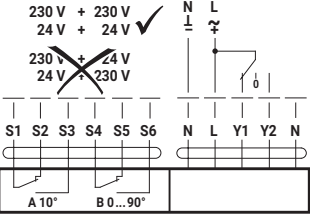
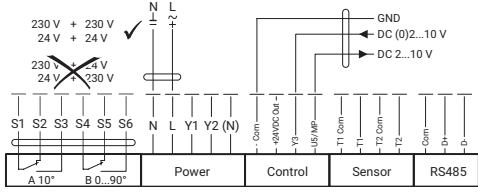
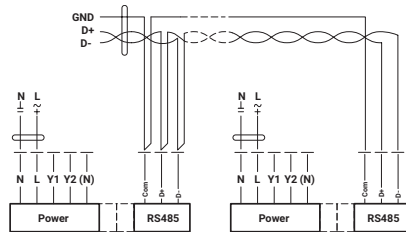
Nominal torque	160 Nm		
Damper size up to approx.	Special		
	 PMCA..		 PKCA..




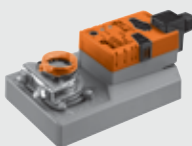
Parametrisable	AC 24...240 V DC 24...125 V	PMCA-S2-T	PMCA-BAC-S2-T	PKCA-BAC-S2-T
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Control		Open/close 3-point	Modulating (2...10 V) Modulating (4...20 mA) BACnet MS/TP Modbus RTU MP-Bus Open/close 3-point	Modulating (2...10 V) Modulating (4...20 mA) BACnet MS/TP Modbus RTU MP-Bus Open/close 3-point
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Technical data				
Fail-safe	–	–	●	
Form fit	17x17 mm	17x17 mm	17x17 mm	
Running time motor 90°	35 s (30..120 s variable)	35 s (30..120 s variable)	35 s (30..120 s variable)	
Running time fail-safe position 90°	–	–	30 s	
Manual override	Hand crank	Hand crank	Hand crank	
Connection	Connecting terminals	Connecting terminals	Connecting terminals	
Direction of rotation	Can be selected with Tool	Can be selected with Tool	Can be selected with Tool	
Position indication	Mechanically (integrated)	Mechanically (integrated)	Mechanically (integrated)	
Auxiliary switch	2x SPDT	2x SPDT	2x SPDT	
Motor sound power level	68 dB(A)	68 dB(A)	68 dB(A)	
Sound power level fail-safe position	–	–	61 dB(A)	
Degree of protection	IP66/67 NEMA 4X	IP66/67 NEMA 4X	IP66/67 NEMA 4X	
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	
Ambient temperature	–30...50°C	–30...50°C	–30...50°C	
Storage temperature	–40...80°C	–40...80°C	–40...80°C	
Ambient humidity	100% r.h.	100% r.h.	100% r.h.	
Parametrisation Commissioning, maintenance	Belimo Assistant App ZTH EU / ZTH AP	Belimo Assistant App ZTH EU / ZTH AP	Belimo Assistant App ZTH EU / ZTH AP	

Electrical installation

Open/close	3-point
PMCA-S2-T / PMCA-BAC-S2-T / PKCA-BAC-S2-T	
	
Modulating	Communicative (BACnet, Modbus)
PMCA-BAC-S2-T / PKCA-BAC-S2-T	
	

Nominal torque	5 Nm	10 Nm	20 Nm	40 Nm
	1 m ²	2 m ²	4 m ²	8 m ²
Damper size up to approx.				
Nominal voltage 24 V AC/DC				
	LM..A-TP	NM..A-TP	SM..A-TP	GM..A-TP
Parameterisable ¹⁾				
24 V	LM24A-MP-TP	NM24A-MP-TP	SM24A-MP-TP	GM24A-MP-TP

Technical data

Spindle diameter	6 – 20 mm	8 – 26.7 mm	10 – 20 mm	12 – 26.7 mm
Running time motor 90°	150 s	150 s	150 s	150 s
Manual override	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked
Connection	Connecting terminals	Connecting terminals	Connecting terminals	Connecting terminals
Direction of rotation	Can be selected with switch	Can be selected with switch	Can be selected with switch	Can be selected with switch
Angle of rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops	max. 95°, can be limited at both ends with adjustable mechanical end stops
Position indication	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on	Mechanical, add-on
Sound power level	≤35 dB(A) @ 150 s	≤35 dB(A) @ 150 s	≤45 dB(A) @ 150 s	≤45 dB(A) @ 150 s
Degree of protection	IP 54	IP 54	IP 54	IP 54
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU	CE according to 2014/30/EU
Ambient temperature	-30...+50 °C	-30...+50 °C	-30...+50 °C	-30...+50 °C
Non-operating temperature	-40...+80 °C	-40...+80 °C	-40...+80 °C	-40...+80 °C
Ambient humidity	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating	95% r.h., non-condensating

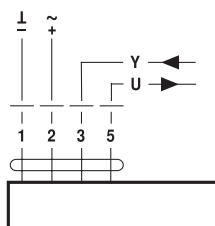
¹⁾ Control, operating range, position feedback, running time and further functions on MP types can be set with PC-Tool or the parameterising device ZTH AP/ ZTH EU. Other versions on request.


Electrical installation

Parameterisable

..M24A-MP-TP

Y = Control signal
U = Position feedback



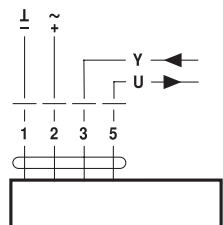
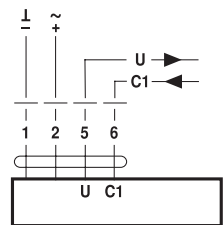
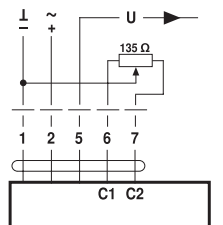
Nominal voltage 24 V AC/DC	Nominal torque	20 Nm
	Damper size up to approx.	4 m ²
Control	 SM..A.	


Parameterisable ¹⁾		
24 V	Modulating 4 – 20 mA	SM24A-MA
	Modulating 0 – 20 V Phs	SM24A-PC
	Modulating 0 – 135 Ω	SM24A-R9

Technical data	
Spindle diameter	10 – 20 mm
Running time motor 90°	150 s (86 – 346 s)
Manual override	Gear disengagement with push-button, can be locked
Connection	Connecting cable 1 m
Direction of rotation	Can be selected with switch
Angle of rotation	max. 95°, can be limited on both sides with adjustable mechanical end stops
Position indication	Mechanical, add-on
Sound power level	≤45 dB(A) @ 150 s
Degree of protection	IP 54
EMC	CE according to 2014/30/EU
Ambient temperature	–30...+50 °C
Non-operating temperature	–40...+80 °C
Ambient humidity	95% r.h., non-condensating

¹⁾ Running time and further functions can be set with PC-Tool or the parameterising device ZTH AP/ ZTH EU. Other versions on request.

Electrical installation

Modulating		
SM24A-MA	SM24A-PC	SM24A-R9
<p>Y = Control signal (4 – 20 mA) U = Position feedback (DC 2 – 10 V)</p> 	<p>U = Position feedback (DC 2 – 10 V) C1 = Control signal (0 – 20 V phase-cut signal)</p> 	<p>U = Position feedback (DC 2 – 10 V)</p> 

Stroke (gear rod)	Nominal voltage 24 V AC/DC	Actuating force	150 N
		Damper size up to approx.	1 m ²
		 LH..A60	
Parameterisable ¹⁾			
60 mm	24 V		LH24A-MP60-TP
100 mm			LH24A-MP100-TP
200 mm			LH24A-MP200-TP
300 mm			LH24A-MP300-TP

Technical data

Running time motor 100 mm	150 s
Manual override	Gear disengagement with push-button, can be locked
Connection	Connecting terminals
Direction of stroke	Can be selected with switch
Stroke height	Adjustable in 20 mm increments
Sound power level	≤45 dB(A) @ 150 s
Degree of protection	IP 54
EMC	CE according to 2014/30/EU
Ambient temperature	-30...+50 °C
Non-operating temperature	-40...+80 °C
Ambient humidity	95% r.h., non-condensating

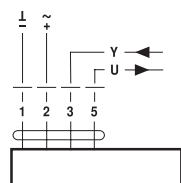
¹⁾ Control, operating range, position feedback, running time and further functions on MP types can be set with PC-Tool or the parameterising device ZTH AP/ ZTH EU.

Electrical installation

Parameterisable

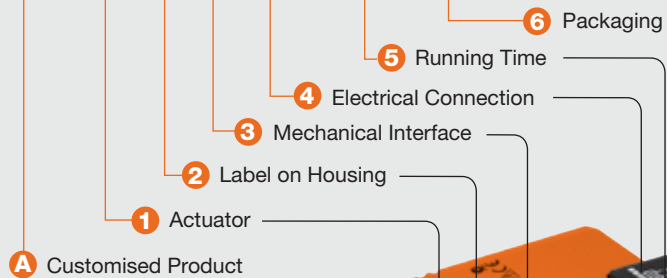
..H24A-MP..

Y = Control signal
U = Position feedback



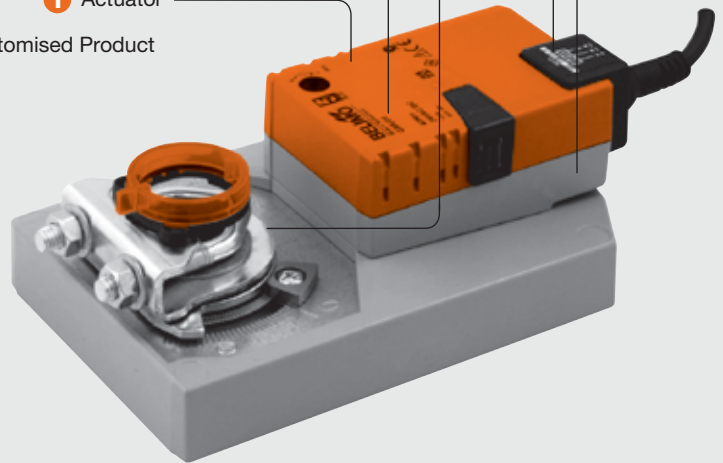
Market description: NM230AX-SR

Type code: NMA - 45 0 1 01 000 2



Types/Voltage/Function

- Standard Damper Actuator
- CM/LM/NM/SM/GM
- Actuator for valve LR/NR/SR/GR
- Linear Actuator LH/SH
- Open/Close, 3-point, modulating, MF, MP-Bus



Our flexibility is beyond your expectations

- Maximised flexibility
- All the features you want
- Immediate availability of samples
- Availability no longer related to quantity
- Any products with your own brand or identity at any time

Refer to technical datasheets for details.
New options for customisation are continuously added.
Please get updates from a Belimo sales representative.



5-year warranty

1 Actuator/Housing Color

- Orange: Belimo products for all customers
- Grey: Specific customer products with Belimo logo or customer logo and type code



2 Label on Housing

- Transparent label
- Blue label
- Black label

3 Mechanical Interface

- Single side clamp
- Reversible clamp
- 8x8/10x10/12x12/16x16mm
- Form-fit (with rotation limits)*



4 Electrical Connection

- Terminals IP 20/ IP 54
- 1/3/5m PVC cables
- 1/3/5m Halogen free cables
- J6 connector
- 4...20mA PVC cables



5 Running Time

- 150s/90° LM/NM/SM/GM
- 90s/90° LM/NM/SM
- 75s/90° CM
- 45s/90° CM/LM/NM
- 35s/90° CM/LM



6 Packaging

- Single packing
- Bulk packing

Please contact your nearest Belimo sales representative for detailed information.

Nominal torque	15 Nm	25 Nm	40 Nm
	Agency listing CE Certification		
Nominal voltage 24 V AC/DC 230 V AC	 BEN..	 BEE..	 BE..

Open-close

AC 24V 50/60Hz, DC 24V	BEN24	BEE24	BE24, BE24-12
AC/DC 24V with plug connect to BKN230-24			BE24-ST, BE24-12-ST
AC/DC 24V with plug connect to BKNE230-24	BEN24-ST	BEE24-ST	
AC 230V 50/60Hz	BEN230	BEE230	BE230, BE230-12

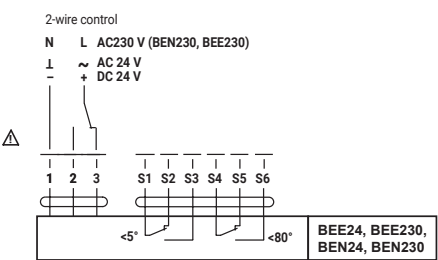
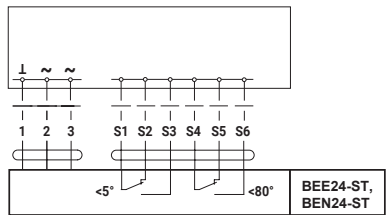
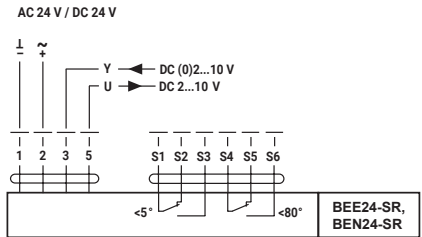
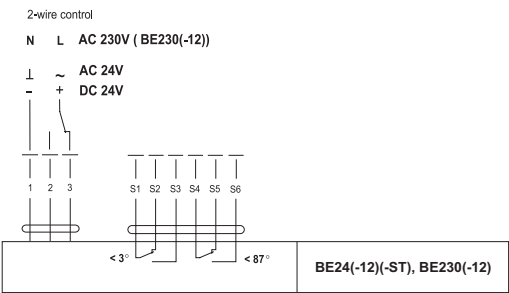
Modulating

AC 24V 50/60Hz, DC 24V	BEN24-SR	BEE24-SR	
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Technical data

Running time	Motor	30s	60s	60s
Built-in 2 SPDT auxiliary switch			Yes	
Form-fit 12 x12mm		Yes	Yes	Yes
Form-fit 14 x 14mm				Yes
Manual override function			Yes	
Angle of rotation			Max.95°	
Direction of rotation selectable by L/R mounting			Yes	

Electrical installation

Open-close		
BEE24, BEE230, BEN24, BEN230	BEE24-ST, BEN24-ST	BEE24-SR, BEN24-SR
<p>2-wire control</p> <p>N L AC230 V (BEN230, BEE230)</p> <p>⊥ ~ AC 24 V</p> <p>- + DC 24 V</p>  <p>BEE24, BEE230, BEN24, BEN230</p>	<p>Application with connector plug</p>  <p>BEE24-ST, BEN24-ST</p>	<p>AC 24 V / DC 24 V</p> <p>⊥ ~</p> <p>Y ← DC (0)2...10 V</p> <p>U → DC 2...10 V</p>  <p>BEE24-SR, BEN24-SR</p>
BE24(-12)(-ST), BE230(-12)		
<p>2-wire control</p> <p>N L AC 230V (BE230(-12))</p> <p>⊥ ~ AC 24V</p> <p>- + DC 24V</p>  <p>BE24(-12)(-ST), BE230(-12)</p>		

Nominal torque	Motor	4 Nm	9 Nm	11 Nm	18 Nm
	Fail-safe	3 Nm	7Nm	8.5 Nm	12 Nm
Nominal voltage 24 V AC/DC 230 V AC	Agency listing	CE Certification			
		BFL	BFN	BFG	BF

Open-close				
AC 24V 50/60Hz, DC 24V	BFL24	BFN24	BFG24	BF24
AC 24V 50/60Hz, DC 24V with thermal trip (72°C)	BFL24-T	BFN24-T		BF24-TN
AC/DC 24V with plug connect to BKN230-24	BFL24-ST	BFN24-ST	BFG24-ST	BF24-ST
AC 24V 50/60Hz, DC 24V with thermal trip and plug connect to BKN230-24	BFL24-T-ST	BFN24-T-ST	BFG24-TN-ST	BF24-TN-ST
AC 230V 50/60Hz	BFL230	BFN230	BFG230	BF230
AC 230V 50/60Hz with thermal trip	BFL230-T	BFN230-T	BFG230-TN	BF230-TN

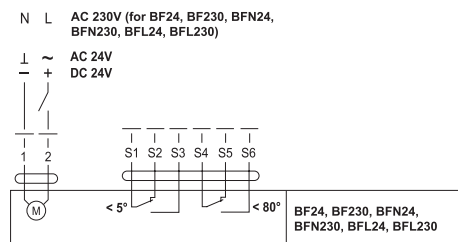
Modulating (AC 24V 50/60Hz, DC 24V)				
Control signal Y DC (0)2...10V	BFL24-SR(-T)			BF24-SR(-T)
Feedback signal U DC 2...10V				

Technical data					
Running time	Motor	<60s	<60s	120s	120s
	Fail-safe	20s	20s	20s	16s
Built-in 2 SPDT auxiliary switch		Built-in		Built-in	
Form-fit		12 x 12mm (with 10 x 10mm adaptor)		10 x 10mm	12 x 12mm (with 10 x 10mm adaptor)
Manual override function		Yes		Yes	
Angle of rotation		Max.95°		Max.180°	Max.180°
Direction of rotation selectable by L/R mounting		Yes			

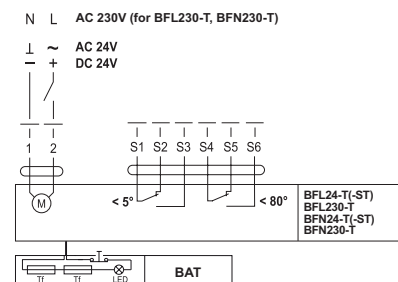
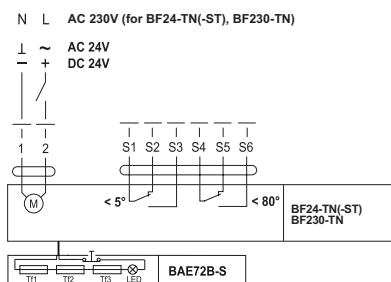
Electrical installation

Open-close

BF24, BF230, BFN24, BFN230, BFL24, BFL230



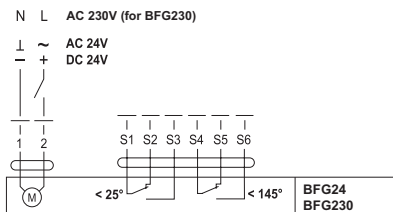
BFL24-T(-ST), BFL230-T, BF24-TN(-ST), BF230-TN



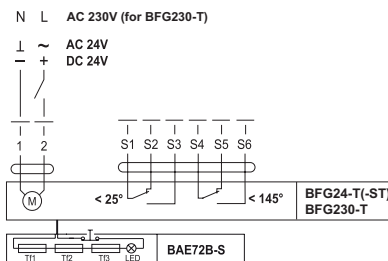
Electrical installation

Open-close

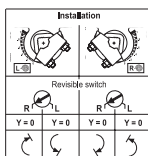
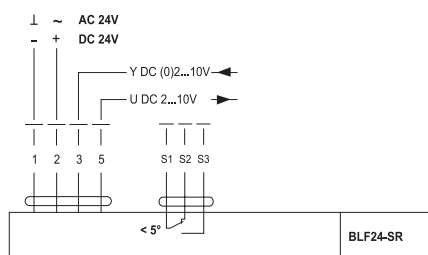
BFG24, BFG230



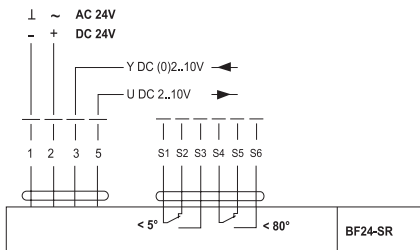
BFG24-T(-ST), BFG230-T



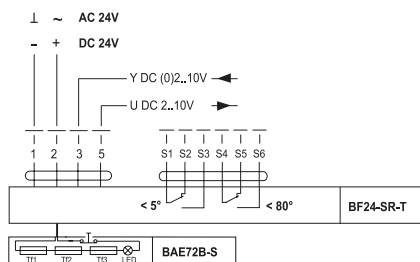
BLF24-SR



BF24-SR



BF24-SR-T

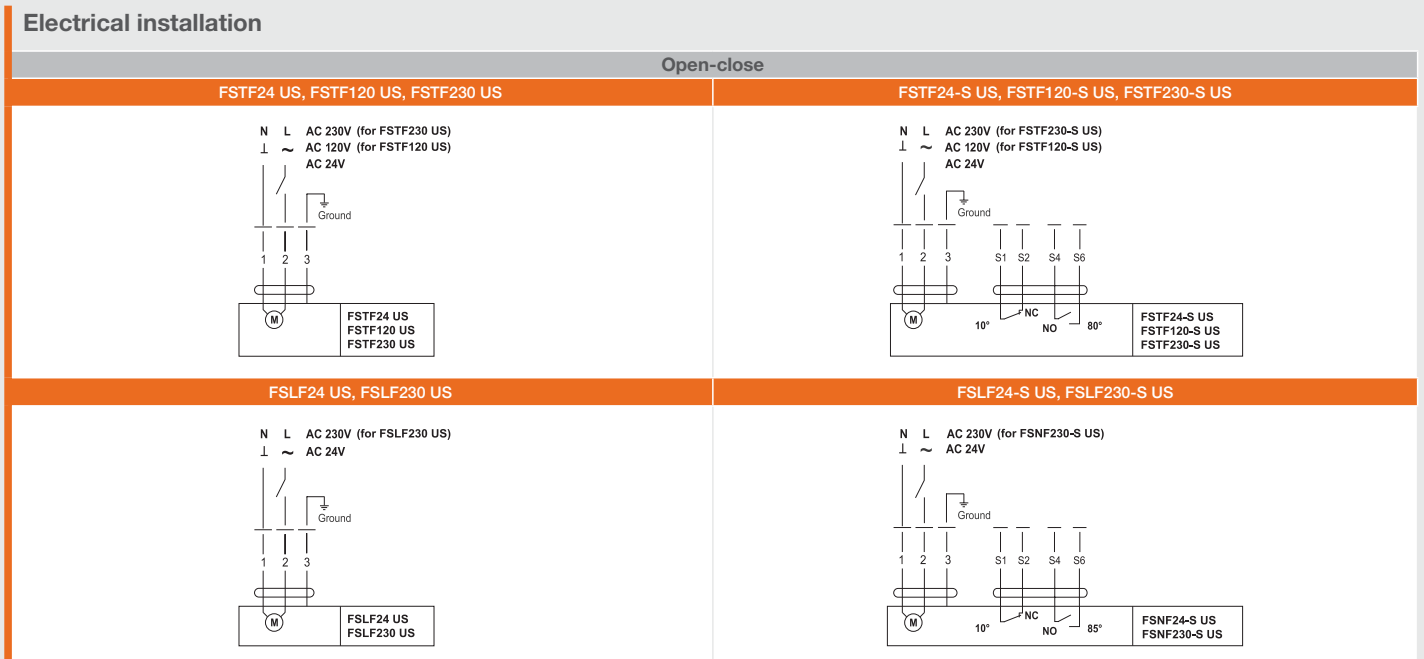


Torque	Motor	2 Nm	3.5 Nm	7.9 Nm	20 Nm	20 Nm
	Fail-safe	2 Nm	3.5 Nm	7.9 Nm	20 Nm	20 Nm
Agency listing		cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02 California State Fire Marshal Listing 3210-1593:104	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02 NYC Department of Buildings MEA 197-07-M California State Fire Marshal Listing 3210-1593:102	cULus listed to UL873 and CAN/CSA C22.2 No.24 NYC Department of Buildings MEA 197-07-M California State Fire Marshal Listing 3210-1593:101	cULus listed to UL60730-1A:02; UL 60730-2-14:02 and CAN/CSA-E60730-1:02	cULus listed to UL60730-1A:02; UL 60730-2-14:02 and CAN/CSA-E60730-1:02
	Nominal voltage	24 V AC/DC 230 V AC				
		FSTF..US	FSLF..US	FSNF..US	FSAF..A	FSAFB24-SR 1)
Open-close						
	AC 24V 50/60Hz, DC 24V	FSTF24 US	FSLF24 US	FSNF24 US 2)	FSAF24A	FSAFB24-SR
	AC120V 50/60Hz	FSTF120 US			FSAF120A	
	AC 230V 50/60Hz	FSTF230 US	FSLF230 US	FSNF230 US	FSAF230A	
Modulating (AC 24V 50/60Hz, DC 24V)						
	AC 24V 50/60Hz					FSAFB24-SR

Technical data						
Running time	Motor	75s	15s	15s	25s	75s
	Fail-safe	25s	15s	15s	15s	20s
Built-in 2 SPDT auxiliary switch				FSNF24-S US FSNF230-S US	FSAF24A-S FSAF120A-S FSAF230A-S	FSAFB24-SR
Built-in 2 SPST auxiliary switch		FSTF24-S US FSTF120-S US FSTF230-S US	FSLF24-S US FSLF230-S US			
Clamp		6...12mm	12.7...20mm	12.7...26mm	12.7...20mm (10...20mm optional)	12.7mm (19.05mm, 26.67mm field selectable)
Manual override function		No			No	Yes
Angle of rotation		Max.95°				
Direction of rotation selectable by L/R mounting		Yes				

Accessories		
BAE165 US Thermoelectrical RE tripping device		Optional / Order Separately

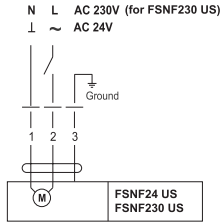
1) FSAFB24-SR could be control with open/close or modulating operations.
2) DC 24V is not UL listed for FSNF24(-S) US.



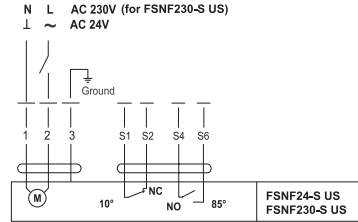
Electrical installation

Open-close

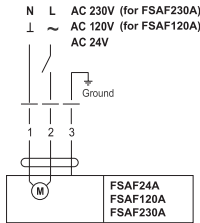
FSNF24 US, FSNF230 US



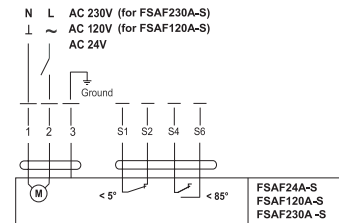
FSNF24-S US, FSNF230-S US



FSAF24A, FSAF120A, FSAF230A

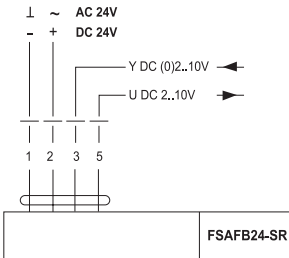


FSAF24A-S, FSAF120A-S, FSAF230A-S

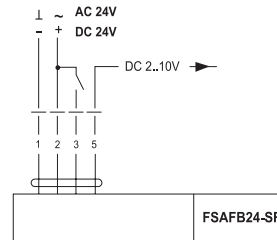


Modulating

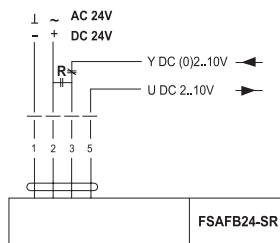
FSAFB24-SR (-S)



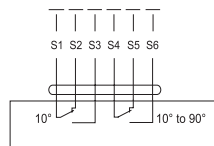
Modulating control



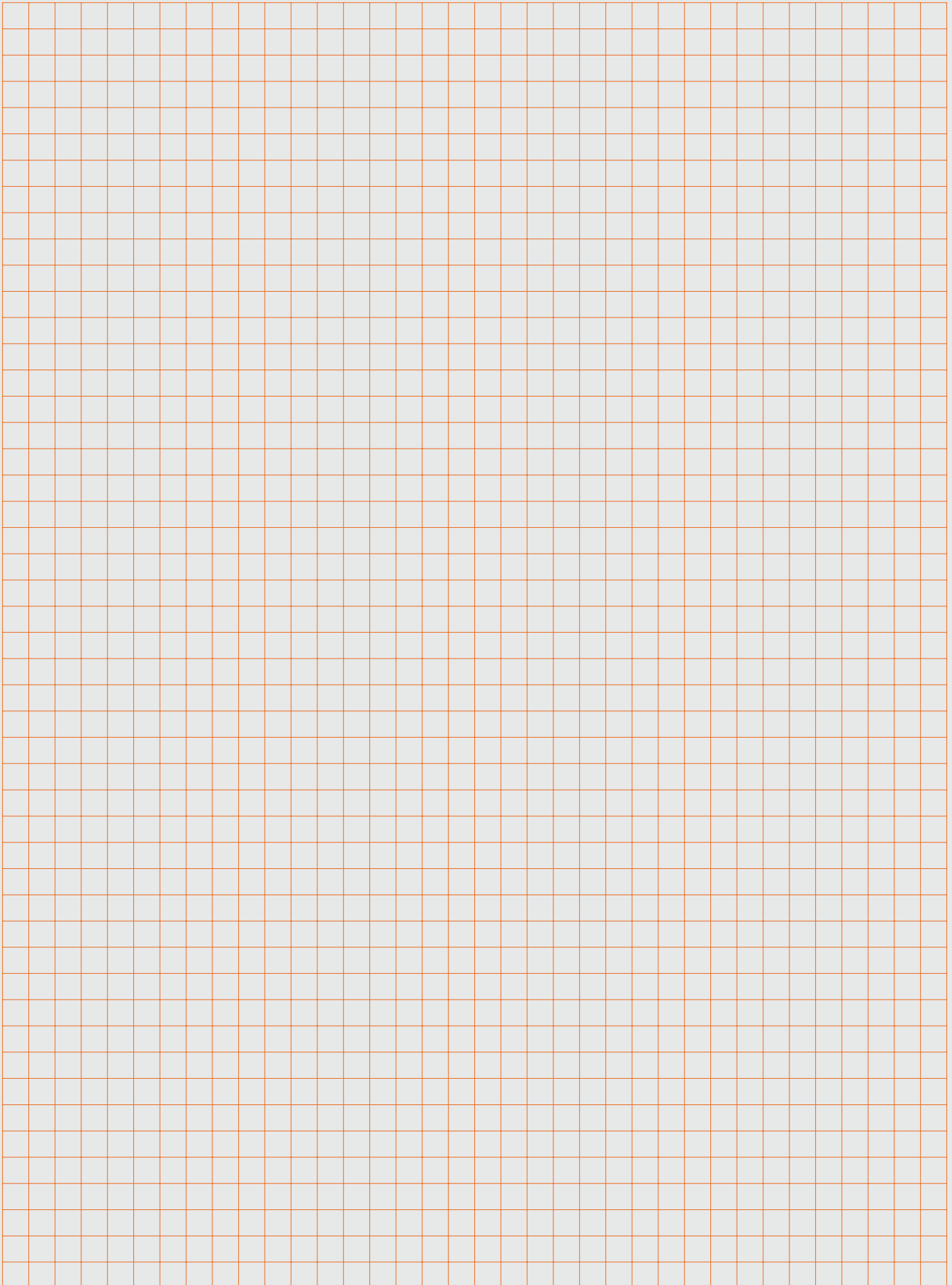
On/Off Control



Override Open



Auxiliary Switches for FSAFB24-SR-S



All inclusive.

Belimo as a global market leader develops innovative solutions for the controlling of heating, ventilation and air-conditioning systems. Damper actuators, control valves, sensors and meters represent our core business.

Always focusing on customer value, we deliver more than only products. We offer you the complete product range for the regulation and control of HVAC systems from a single source. At the same time, we rely on tested Swiss quality with a five-year warranty. Our worldwide representatives in over 80 countries guarantee short delivery times and comprehensive support through the entire product life. Belimo does indeed include everything.

The "small" Belimo devices have a big impact on comfort, energy efficiency, safety, installation and maintenance.

In short: Small devices, big impact.



5-year warranty



On site around the globe



Complete product range



Tested quality



Short delivery times



Comprehensive support

