



Maximum comfort
with minimum
consumption.

Non fail-safe actuators for ventilation applications

Edition 2022

Rotary actuators non fail-safe



Actuator type		Nominal torque ¹⁾	Shaft diameter	Damper size up to approx. ¹⁾	Page
Rotary actuators with connector plug					14
UM..		1 Nm	6...12.7 mm	■ 0.2 m ²	
Rotary actuators with connecting cable					15–16
CM..		2 Nm	6...12.7 mm	■ 0.4 m ²	
LM..A.. + VLM..A..		5 Nm	6...20 mm	■ 1 m ²	
NM..A..+ VNM..A..		10 Nm	8...26.7 mm	■ 2 m ²	
SM..A..+ VSM..A..		20 Nm	10...20 mm	■ 4 m ²	
GM..A..+ VGM..A..		40 Nm	12...26.7 mm	■ 8 m ²	
Rotary actuators with connecting terminals					17–18
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	

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 guidelines.

Linear actuators non fail-safe



Actuator type		Actuating force	Stroke range	Damper size up to approx. ¹⁾	Page
Linear actuators with connector plug					19
UH..		50 N	0...60 mm	■ 0.2 m ²	
Linear actuators with connecting cable/connecting terminals					19–20
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	

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Special actuators non fail-safe



Actuator type		Nominal torque ¹⁾	Actuating force	Stroke range	Shaft diameter	Damper size up to approx. ¹⁾	Page
Fast running rotary actuators							21
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							22
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							23
LHQ..A..			100 N	0...100 mm		■ 0.7 m ²	
SHQ..A..			200 N	0...100 mm		■ 1.3 m ²	

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

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Special actuators non fail-safe



Actuator type		Nominal torque ¹⁾	Shaft Diameter	Form fit	Damper blade diameter	Pipe diameter in accordance with DIN EN 1506	Damper size up to approx. ¹⁾	Page
RobustLine rotary actuators for extreme conditions								24
NM..P..		10 Nm	10...20 mm				2 m ²	
SM..P..		20 Nm	14...20 mm				4 m ²	
IP66/67 / NEMA 4X-Drehantriebe für Aussenanwendungen								25
SMQ..G..		16 Nm	12...26.7 mm				3.2 m ²	
GM..G..		40 Nm	14...26.7 mm				8 m ²	
Rotary actuators with high torque								26
PMCA..		160 Nm		17x17 mm			Special	
Actuators with damper blade								27
CM..D		2 Nm			100...160 mm	DN 100...160		

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 guidelines.

Retrofit actuators, configuration options



Actuator type		Nominal torque ¹⁾	Actuating force	Stroke range	Shaft diameter	Control	Damper size up to approx. ¹⁾	Page
Parametrisable rotary actuators with connecting terminals								28
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	
Parametrisable rotary actuators with special control and connecting cable								29
SM24A-MA		20 Nm			10...20 mm	modulating 4...20 mA ²⁾	 4 m ²	
SM24A-PC		20 Nm			10...20 mm	modulating 0...20 V PhC ³⁾	 4 m ²	
SM24A-R9		20 Nm			10...20 mm	modulating 0...135 Ω ³⁾	 4 m ²	
Parametrisable linear actuators with connecting terminals								30
LH..A..			150 N	0...300 mm		modulating 2...10 V ²⁾	 1 m ²	
Configuration options								32-33

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 guidelines.

²⁾ Control, operating range, feedback, running time and other functions with MP types adjustable with PC-Tool or Service Tool ZTH EU.

³⁾ Running time and other functions are adjustable with PC-Tool or Service Tool ZTH EU.

Bus solutions from Belimo, save costs and energy!



Bus systems can be used to exchange any volume of data from various bus participants over the same physical lines. The user has unrestricted access to control, feedback and parameters on the individual devices. Cabling expenditures are reduced by up to 90% compared with actuators with conventional wiring.

Thanks to time and material savings (cables, connecting terminals, connectors, etc.), installation work is simpler and cheaper. Further positive selling points for bus solutions include their lower fire load and the fact that they take up less space in cable trays and switch cabinets. Depending on the application and requirements, different bus systems are used.

One or two sensors can also be connected to most communicative actuators. This may be a passive resistance sensor (Pt1000, Ni1000, NTC etc.), an active sensor (e.g. with a 0...10 V output) or a switching contact. Its signals are digitised in the Belimo actuator and transferred to the higher-level bus system.



The Belimo MP-Bus was specially developed as a master-slave system for HVAC actuators and sensors. It allows up to eight different HVAC performance devices to be grouped together and connected to any higher-level system. It is very resistant to external interferences and does not need bus terminals.



Modbus is a communication protocol, which has become the de-facto standard. It is used commonly all around the globe and in a huge range of applications. Its simple implementation makes Modbus very popular with many manufacturers.



BACnet is a proven, widely used communication protocol for building automation. The standard is open, requires no licence and is used by a large number of international providers, universities and associations. Implementing the BACnet Standard Device Profiles and the associated BACnet Interoperability Building Blocks guarantees genuine compatibility between various BACnet devices.



KNX is a well-engineered building automation system used around the world to control systems spanning several maintenance groups, for example heaters, blinds and security technology in buildings. The KNX-certified actuators enable direct connection to the KNX network. Communication takes place via the integrated KNX interface (TP, S-Mode).



IoT actuators with Ethernet interface can exchange operating and setting data with Belimo Cloud. It is controlled locally via an analogue signal or BACnet/Modbus. Thanks to the open client API of the Belimo Cloud, a connection to a specific cloud solution can be implemented.

Non fail-safe actuators



	Rotary actuators						Linear actuators			
	UM..	CM..	LM..A.. + VLM..A..	NM..A.. + VNM..A..	SM..A.. + VSM..A..	GM..A.. + VGM..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			
End stop clips		Z-ESUM	Z-ESCM					Z-ESCM		
End stop							Z-ESUH			
Form fit inserts ¹⁾				ZF..-LMA ZFRL...-LMA	ZF..-NSA ZF8-NMA	ZF..-NSA				
Gear disengage- ment magnet		Z-MA						Z-MA		
Lever for actuator drive shafts				AH-20 ²⁾ AH-25	AH-20 AH-25 ³⁾	AH-GMA				
Lever for damper shafts				KH8	KH8	KH10				
Shaft clamp, one-side			K-ELA..	K-ENMA K-ENSA	K-ENSA K-ENSA-I					
Shaft clamp, reversible				K-NA	K-SA					
Ball joints				KG8 KG10A	KG8 KG10A	KG10A				
Mounting kit for linkage operation				ZG-NMA	ZG-SMA	ZG-GMA				
Position indicator		Z-PICM	Z-PI	Z-PI	Z-PI	Z-PI				
Anti-rotation clamp		Z-ARCM	Z-ARCM							
Protective covering		Z-PCUM					Z-PCUM			

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 shaft clamp K-NA.

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

Non fail-safe actuators



	Rotary actuators						Linear actuators			
	UM..	CM	LM..A.. + VLM..A..	NM..A.. + VNM..A.. +	SM..A.. + VSM..A..	GM..A.. + VGM..A..	UH..	CH..	LH..A..	SH..A..
Electrical accessories										
Auxiliary switches			S1A S2A	S1A S2A	S1A S2A	S1A S2A				
Room temperature controller for modulating actuators	CR24..	CR24..	CR24..	CR24..	CR24..	CR24..	CR24	CR24..	CR24..	CR24..
Feedback potentiometer			P..A ¹⁾	P..A ¹⁾	P..A ¹⁾	P..A ¹⁾				
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	Z-UIC
Positioner/ Range controller For modulating actuators	CRP24-B1	CRP24-B1	CRP24-B1	CRP24-B1	CRP24-B1	CRP24-B1	CRP24-B1	CRP24-B1	CRP24-B1	CRP24-B1
	SBG24	SBG24	SBG24	SBG24	SBG24	SBG24	SBG24	SBG24	SBG24	SBG24
	SGA24	SGA24	SGA24	SGA24	SGA24	SGA24	SGA24	SGA24	SGA24	SGA24
	SGE24	SGE24	SGE24	SGE24	SGE24	SGE24	SGE24	SGE24	SGE24	SGE24
	SGF24	SGF24	SGF24	SGF24	SGF24	SGF24	SGF24	SGF24	SGF24	SGF24
Tools										
Service Tool			ZTH EU ²⁾	ZTH EU ²⁾	ZTH EU ²⁾	ZTH EU ²⁾			ZTH EU ²⁾	ZTH EU ²⁾

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

²⁾ For all ..MP../..MA../..PC../..R9 actuators in the contracting and retrofit business.

Special actuators non fail-safe



		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 switches 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		
Levers for actuator axles				AH-20 ²⁾ AH-25	AH-20 AH-25 ³⁾	AH-20 ²⁾ AH-25	AH-20 ³⁾ AH-25	AH-20	AH-GMA	AH-20 AH-25 ⁴⁾		
Lever for damper shafts				KH8	KH8	KH8	KH8	KH8	KH10	KH8		
Shaft 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		
Shaft clamp, reversible				K-NA	K-NA	K-NA	K-NA			K-NA		
Ball joints				KG8 KG10A	KG8 KG10A	KG8 KG10A	KG8 KG10A	KG8 KG10A	KG10A	KG8 KG10A		
Mounting kit 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		

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, NMQ..A.: 10x10 mm, 12x12 mm, 15x15 mm, 16x16 mm.

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

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

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

Special actuators non fail-safe



Fast running rotary actuators

TMC..A..

LMC..A..

NMC..A..

SMC..A..

Very fast running rotary actuators

LMQ..A..

NMQ..A..

NMD..A..

SMQ..A..

SMD..A..

Very fast running linear actuators

LHQ..A..

SHQ..A..



Electrical accessories

Auxiliary switches		S1A S2A	S1A S2A	S1A S2A	S1A S2A	S1A ¹⁾ S2A ¹⁾	S1A ¹⁾ S2A ¹⁾	S1A S2A	S1A ¹⁾ S2A ¹⁾	S1A S2A		
Room temperature controller for modulating actuators		CR24..	CR24..	CR24..	CR24..	CR24..	CR24..		CR24..		CR24..	CR24..
Feedback potentiometer		P..A ²⁾	P..A ²⁾	P..A ²⁾	P..A ²⁾	P..A ^{1) 2)}	P..A ^{1) 2)}	P..A ^{1) 2)}	P..A ^{1) 2)}	P..A ²⁾		
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
Positioner/Range controller For modulating actuators		CRP24-B1 SBG24 SGA24 SGE24 SGF24	CRP24-B1 SBG24 SGA24 SGE24 SGF24	CRP24-B1 SBG24 SGA24 SGE24 SGF24	CRP24-B1 SBG24 SGA24 SGE24 SGF24	CRP24-B1 SBG24 SGA24 SGE24 SGF24	CRP24-B1 SBG24 SGA24 SGE24 SGF24		CRP24-B1 SBG24 SGA24 SGE24 SGF24		CRP24-B1 SBG24 SGA24 SGE24 SGF24	CRP24-B1 SBG24 SGA24 SGE24 SGF24

Tools

Service Tool						ZTH EU ³⁾	ZTH EU ³⁾					
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¹⁾ Auxiliary switch and feedback potentiometer on LMQ..A, NMQ..A and SMQ..A actuators in combination with a reversible shaft clamp (mounted underneath for short shaft installation) can only be used together with adapter Z-SPA.

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

³⁾ For all ..MP../..MA../..PC../..R9 actuators in the contracting and retrofit business.

Special actuators non fail-safe

	RobustLine rotary actuators for extreme conditions		IP66/67 NEMA 4X rotary actuators for outdoor applications		Actuators with high torque
	NM..P..	SM..P..	SMQ..G..	GM..G..	PMCA..
Mechanical accessories					
Lever for actuator drive shafts				AH-GMA	AH-GMA
Lever for damper shafts				KH10	KH10
Ball joints				KG10A	KG10A
Mounting kit for linkage operation				ZG-GMA	ZG-GMA
Adapter kit					ZPR..
Electrical accessories					
Heating with humidistat AC 230 V (only avail- able fitted ex factory)		HH230	HH230	HH230-MG	HH230-MG
Heating with humidistat AC/DC 24 V (only avail- able fitted ex factory)				HH24-MG	HH24-MG
Heating with thermostat AC 230 V (only avail- able fitted ex factory)		HT230	HT230	HT230-MG	HT230-MG
Heating with thermostat AC/DC 24 V (only available fitted ex factory)				HT24-MG	HT24-MG

Special actuators non fail-safe



RobustLine rotary actuators for extreme conditions

NM..P..



SM..P..



IP66/67 NEMA 4X rotary actuators for outdoor applications

SMQ..G..



GM..G..



Actuators with high torque

PMCA..



Actuators with damper blade

CM..D



Electrical accessories

Auxiliary switches		S2A GR	S2A GR	S2A	S2A		
Room temperature controller for modulating actuators		CR24..	CR24..	CR24..	CR24..		CR24..
Feedback potentiometers		P..A GR 1)	P..A GR 1)	P..A GR 1)	P..A GR 1)		
Signal converter Voltage/current For modulating actuators		Z-UIC	Z-UIC	Z-UIC	Z-UIC		Z-UIC
Positioner/ Range controller For modulating actuators		CRP24-B1 SBG24 SGA24 SGE24 SGF24	CRP24-B1 SBG24 SGA24 SGE24 SGF24	CRP24-B1 SBG24 SGA24 SGE24 SGF24	CRP24-B1 SBG24 SGA24 SGE24 SGF24		CRP24-B1 SBG24 SGA24 SGE24 SGF24

Tools

Service Tool		ZTH EU 2)	ZTH EU 2)	ZTH EU 2)	ZTH EU 2)	ZTH EU 2)	
Belimo Assistant App						■	

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

²⁾ For all ..24A-MP(..)-, ..24P-MP(..)- and ..24G-MP(..) actuators in the contracting and retrofit business.
For form fit inserts, please get in touch with your local Belimo contact person.

Rotary actuators with connector plug

Nominal torque

1 Nm

Damper size up to approx.

0.2 m²

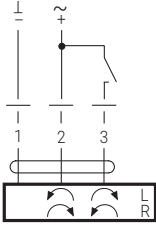
Nominal voltage	Direction of rotation	Angle of rotation	Degree of protection	 UM..
Open-close, 3-point				
AC/DC 24 V	 counterclockwise rotation	0...185°	IP20	UM24Y-L.1
	 clockwise rotation			UM24Y-R.1
AC 230 V	 counterclockwise rotation		IP20	UM230Y-L.1
	 clockwise rotation			UM230Y-R.1
Modulating (2...10 V) ^{1) 2)}				
AC/DC 24 V	 counterclockwise rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops	IP20	UM24Y-SR-L.1
	 clockwise rotation			UM24Y-SR-R.1
Technical data				
Shaft diameter			6...12.7 mm	
Sound power level			≤35 dB(A) @ 22 s	
Running time motor 90°			22 s	
Connection			Molex Mini-Fit Jr. connector plug	
Ambient temperature			-30...50°C	
Storage temperature			-40...80°C	
Ambient humidity			95% RH, non-condensing	
EMC			CE according to 2014/30/EU	

¹⁾ Modulating actuators: Positioning signal Y = 0...10 V, 100 kΩ; operating range 2...10 V / position feedback U = 2...10 V, max. 1 mA.
²⁾ Direction of rotation: Type ...L: Positioning signal Y = 0 V left end stop/Direction of rotation: Type ...R: Positioning signal Y = 0 V right end stop.
Other versions on request.

Electrical installation

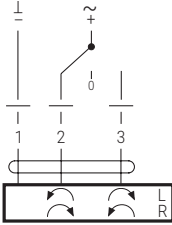
Open/close

UM24.., UM230..



3-point

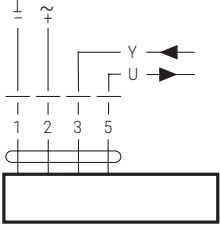
UM24.., UM230..



Modulating

UM24..-SR..

Y = 0...10 V / U = 2...10 V



Rotary actuators with connecting cable

Nominal torque

2 Nm

Damper size up to approx.

0.4 m²

Nominal voltage	Direction of rotation	Angle of rotation	Degree of protection	 CM..
Open-close, 3-point				
AC/DC 24 V	 counterclockwise rotation	0...287.5° / without limits	IP54	CM24-L
	 clockwise rotation			CM24-R
	 counterclockwise rotation		IP66	CM24G-L
	 clockwise rotation			CM24G-R
AC 230 V	 counterclockwise rotation	0...287.5° / without limits	IP54	CM230-L
	 clockwise rotation			CM230-R
	 counterclockwise rotation		IP66	CM230G-L
	 clockwise rotation			CM230G-R
Modulating (2...10 V) ^{1) 2)}				
AC/DC 24 V	 counterclockwise rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops	IP54	CM24-SR-L
	 clockwise rotation			CM24-SR-R
	 counterclockwise rotation		IP66	CM24G-SR-L
	 clockwise rotation			CM24G-SR-R
Modulating (2...10 V) with adaption ^{1) 2)}				
AC/DC 24 V	 counterclockwise rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops	IP54	CM24-SX-L
	 clockwise rotation			CM24-SX-R
Communicative ³⁾				
AC/DC 24 V	 counterclockwise rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops	IP54	CM24-MPL-L
	 clockwise rotation			CM24-MPL-R

Technical data

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

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

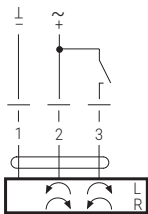
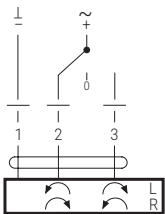
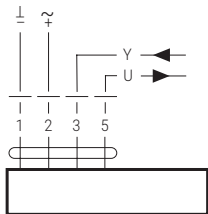
²⁾ Direction of rotation: Type ..-L: Positioning signal Y = 0 V left end stop/Direction of rotation: Type ..-R: Positioning signal Y = 0 V right end stop.

³⁾ You can find suitable system diagrams at www.belimo.com.

Other versions on request.

Electrical installation

Electrical and mechanical accessories **Page 8-9**

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

Rotary actuators with connecting cable

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				
SPDT auxiliary switch				
	 LM..A	 NM..A	 SM..A	 GM..A
Open/close, 3-point	Open/close			
AC/DC 24 V	LM24A	NM24A	SM24A	GM24A
1	LM24A-S	NM24A-S	SM24A-S	
AC 230 V	LM230A	NM230A	SM230A	GM230A
1	LM230A-S	NM230A-S	SM230A-S	
Modulating (2...10 V) ¹⁾				
AC/DC 24 V	LM24A-SR	NM24A-SR	SM24A-SR	GM24A-SR
AC 230 V	LM230ASR	NM230ASR	SM230ASR	
Communicative ²⁾ , parametrisable ³⁾				
AC/DC 24 V	LM24A-MP LM24A-MOD ⁴⁾ LM24A-KNX VLM24A-LP1 ⁵⁾	NM24A-MP NM24A-MOD ⁴⁾ NM24A-KNX VNM24A-LP1 ⁵⁾	SM24A-MP SM24A-MOD ⁴⁾ VSM24A-LP1 ⁵⁾	GM24A-MP GM24A-MOD ⁴⁾ VGM24A-LP1 ⁵⁾
Technical data				
Shaft diameter	6...20 mm	8...26.7 mm	10...20 mm	12...26.7 mm
Sound power level	≤35 dB(A) @ 150 s	≤35 dB(A) @ 150 s	≤45 dB(A) @ 150 s	≤45 dB(A) @ 150 s
Running time motor 90°	150 s			
Manual override	Gear disengagement with push button, can be locked			
Connection	Connecting cable 1 m			
Direction of rotation	Selectable with switch			
Angle of rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops			
Position indication	Mechanical, add-on			
Degree of protection	IP54			
Ambient temperature	-30...50°C			
Storage temperature	-40...80°C			
Ambient humidity	95% RH, non-condensing			
EMC	CE according to 2014/30/EU			

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

²⁾ You can find suitable system diagrams at www.belimo.com.

³⁾ Control, operating range, feedback, running time and other functions adjustable with PC-Tool or Service Tool ZTH EU.

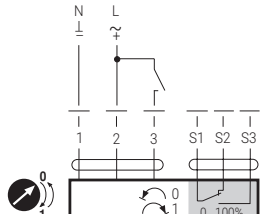
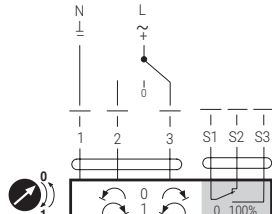
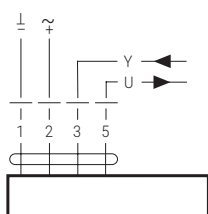
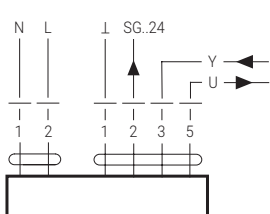
⁴⁾ All MOD versions work with Modbus and BACnet.

⁵⁾ All V.-LP1 versions are IoT-compatible and can exchange data with the Belimo Cloud.

Other versions on request.

Electrical installation

Electrical and mechanical accessories **Page 8-9**

Open/close	3-point	Modulating	Parametrisable	Modulating
..M24A, ..M24A-S, ..M230A, ..M230A-S.	..M24A, ..M24A-S, ..M230A, ..M230A-S	..M24A-SR	..M24A-MP	..M230ASR
			Y = positioning signal	
		Y = 0...10 V U = 2...10 V	U = feedback position	Y = 0...10 V U = 2...10 V
	(not permissible for GM..A.)			
				

Rotary actuators with connecting terminals

Nominal torque

2 Nm

Damper size up to approx.

0.4 m²

Nominal voltage	Direction of rotation	Angle of rotation	Degree of protection	 CM...T..
Open-close, 3-point				
AC/DC 24 V	counterclockwise rotation	0...287.5° / without limits	IP20	CM24-T-L
	clockwise rotation			CM24-T-R
Modulating (2...10 V) ^{1) 2)}				
AC/DC 24 V	counterclockwise rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops	IP20	CM24-SR-T-L
	clockwise rotation			CM24-SR-T-R
Modulating (2...10 V) with adaption ^{1) 2)}				
AC/DC 24 V	counterclockwise rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops	IP20	CM24-SX-T-L
	clockwise rotation			CM24-SX-T-R

Technical data

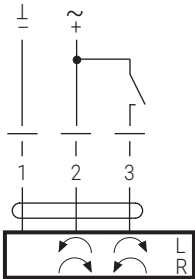
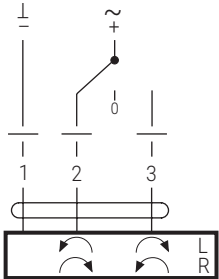
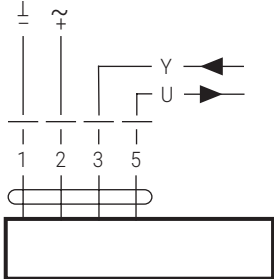
Shaft diameter	6...12.7 mm
Sound power level	≤35 dB(A) @ 75 s
Running time motor 90°	75 s
Manual override	Gear disengagement with defect
Connection	Connecting terminals
Position indication	Mechanical, add-on
Ambient temperature	-30...50°C
Storage temperature	-40...80°C
Ambient humidity	95% RH, non-condensing
EMC	CE according to 2014/30/EU

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

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

Electrical installation

Electrical and mechanical accessories **Page 8-9**

Open/close	3-point	Modulating
CM24..	CM24..	CM24..-SR.., CM24..-SX..
		Y = 0...10 V U = 2...10 V
  		

Rotary actuators with connecting terminals

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				
SPDT auxiliary switch				
				
	LM..A-TP	NM..A-TP	SM..A-TP	GM..A-TP
Open/close, 3-point				Open/close
AC/DC 24 V	1	1	1	1
	LM24A-TP	NM24A-TP	SM24A-TP	GM24A-TP
	LM24A-S-TP	NM24A-S-TP	SM24A-S-TP	
AC 230 V	1	1	1	1
	LM230A-TP	NM230A-TP	SM230A-TP	GM230A-TP
	LM230A-S-TP	NM230A-S-TP	SM230A-S-TP	
Modulating (2...10 V) ¹⁾				
AC/DC 24 V	1	1	1	1
	LM24A-SR-TP	NM24A-SR-TP	SM24A-SR	GM24A-SR-TP
AC 230 V	1	1	1	1
	LM230ASR-TP	NM230ASR-TP	SM230ASR-TP	
Communicative ²⁾ , parametrisable ³⁾				
AC/DC 24 V	1	1	1	1
	LM24A-MP-TP	NM24A-MP-TP	SM24A-MP-TP	GM24A-MP-TP
Technical data				
Shaft diameter	6...20 mm	8...26.7 mm	10...20 mm	12...26.7 mm
Sound power level	≤35 dB(A) @ 150 s	≤35 dB(A) @ 150 s	≤45 dB(A) @ 150 s	≤45 dB(A) @ 150 s
Running time motor 90°	150 s			
Manual override	Gear disengagement with push button, can be locked			
Connection	Connecting terminals			
Direction of rotation	Selectable with switch			
Angle of rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops			
Position indication	Mechanical, add-on			
Degree of protection	IP54			
Ambient temperature	-30...50°C			
Storage temperature	-40...80°C			
Ambient humidity	95% RH, non-condensing			
EMC	CE according to 2014/30/EU			

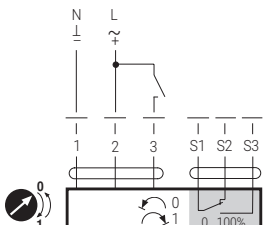
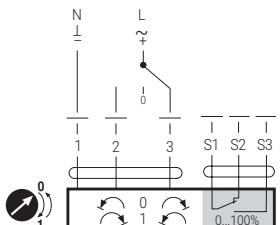
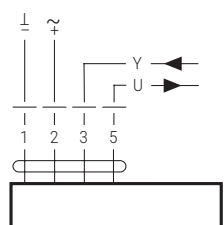
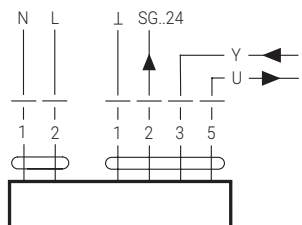
¹⁾ Modulating actuators: Positioning signal Y = 0...10 V, 100 kΩ; operating range 2...10 V / position feedback U = 2...10 V, max. 1 mA.

²⁾ You can find suitable system diagrams at www.belimo.com.

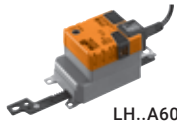
³⁾ Control, operating range, feedback, running time and other functions with MP types adjustable with PC-Tool or Service Tool ZTH EU. Other versions on request.

Electrical installation

Electrical and mechanical accessories **Page 8-9**

Open/close	3-point	Modulating	Parametrisable	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
	(not permissible for GM..A..)	Y = 0...10 V U = 2...10 V	Y = positioning signal U = feedback position	Y = 0...10 V U = 2...10 V
				

Linear actuators with connector plug, connecting cable, connecting terminals

Actuating force		50 N	125 N	150 N	
Damper size up to approx.		0.2 m²	0.8 m²	1 m²	
Stroke (gear rod)	Nominal voltage				
		UH..	CH..L100	LH..A60	
Open-close, 3-point					
60 mm	AC/DC 24 V	UH24Y-L.1	CH24-L60.2	LH24A60	
100 mm			CH24-L100.2	LH24A100	
200 mm				LH24A200	
300 mm				LH24A300	
60 mm	230 V	UH230Y-L.1	CH230-L60.2	LH230A60	
100 mm			CH230-L100.2	LH230A100	
200 mm				LH230A200	
300 mm				LH230A300	
Modulating (2...10 V) ¹⁾			Direction of stroke 0 ²⁾	Direction of stroke 1 ²⁾	
60 mm	AC/DC 24 V	UH24Y-SR-L.1	CH24-SR-L60.2	CH24-SR-R60.2	
100 mm			CH24-SR-L100.2	CH24-SR-R100.2	
200 mm				LH24A-SR100	
100 mm		230 V			LH230ASR100
200 mm				LH230ASR200	
Modulating (2...10 V) with adaption ¹⁾			Direction of stroke 0 ²⁾	Direction of stroke 1 ²⁾	
40 mm	AC/DC 24 V		CH24-SX-L40.2	CH24-SX-R40.2	
100 mm			CH24-SX-L100.2	CH24-SX-R100.2	
Communicative ³⁾ , parametrisable ⁴⁾					
60 mm	AC/DC 24 V			LH24A-MP60	LH24A-MP60-TP
100 mm				LH24A-MP100	LH24A-MP100-TP
200 mm				LH24A-MP200	LH24A-MP200-TP
300 mm				LH24A-MP300	
LH24A-MOD200 ⁵⁾					
Technical data					
Running time motor 100 mm	125 s	380 s	150 s		
Sound power level	≤35 dB(A) @ 125 s	≤35 dB(A) @ 380 s	≤45 dB(A) @ 150 s		
Manual override	Manual override by dismounting actuator	Gear disengagement with magnet	Gear disengagement with push button, can be locked		
Connection	Molex Mini-Fit Jr. connector plug	Connecting cable 1 m	Connecting cable 1 m / Connecting terminals		
Direction of stroke	Selectable via contacting	Selectable via contacting	Selectable with switch		
Height of stroke	Adjustable in 1 mm increments from 0...60 mm	Adjustable in 20 mm increments from 20...100 mm	Adjustable in 20 mm increments from 20...100 mm		
Degree of protection	IP20	IP54	IP54		
EMC	CE according to 2014/30/EU				
Ambient temperature	-30...50°C				
Storage temperature	-40...80°C				
Ambient humidity	95% RH, non-condensing				
EMC	CE according to 2014/30/EU				

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

²⁾ Direction of stroke 0: when Y = 0 V, gear rod is retracted / Direction of stroke 1: when Y = 0 V, gear rod is extended.

³⁾ You can find suitable system diagrams at www.belimo.com.

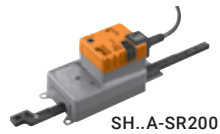
⁴⁾ Control, operating range, feedback, running time and other functions adjustable with PC-Tool or Service Tool ZTH EU.

⁵⁾ All MOD versions work with Modbus and BACnet.

Other versions on request.

Linear actuators with connecting cable

Actuating force **450 N**
 Damper size up to approx. **3 m²**



Stroke (gear rod)	Nominal voltage	
		 SH...A-SR200
Open-close, 3-point		
100 mm	AC/DC 24 V	SH24A100
200 mm		SH24A200
300 mm		SH24A300
100 mm	230 V	SH230A100
200 mm		SH230A200
300 mm		SH230A300
Modulating (2...10 V) ¹⁾		
100 mm	AC/DC 24 V	SH24A-SR100
200 mm		SH24A-SR200
100 mm	230 V	SH230ASR100
200 mm		SH230ASR200
Communicative ²⁾ , parametrisable ³⁾		
100 mm	AC/DC 24 V	SH24A-MP100
200 mm		SH24A-MP200 SH24A-MOD200 ⁴⁾
300 mm		SH24A-MP300

Technical data	
Running time motor 100 mm	150 s
Sound power level	≤52 dB(A) @ 150 s
Manual override	Gear disengagement with push button, can be locked
Connection	Connecting cable 1 m
Direction of stroke	Selectable with switch
Height of stroke	Adjustable in 20 mm increments from 20...100 mm
Degree of protection	IP54
Ambient temperature	-30...50°C
Storage temperature	-40...80°C
Ambient humidity	95% RH, non-condensing
EMC	CE according to 2014/30/EU

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

²⁾ You can find suitable system diagrams at www.belimo.com.

³⁾ Control, operating range, feedback, running time and other functions adjustable with PC-Tool or Service Tool ZTH EU.

⁴⁾ All MOD versions work with Modbus and BACnet.

Other versions on request.

Electrical installation

Electrical and mechanical accessories **Page 8-9**

Open/close	3-point	Modulating	Parametrisable	Modulating
..H24A.., ..H230A..	..H24A.., ..H230A..	CH24-S.., ..H24A-SR..	..H24A-MP..	..H230ASR..
Priority on 3		Y = 0...10 V U = 2...10 V	Y = positioning signal U = feedback-position	Y = 0...10 V U = 2...10 V

Fast running rotary actuators

Nominal torque	2 Nm	5 Nm	10 Nm	20 Nm
Damper size up to approx.	0.4 m ²	1 m ²	2 m ²	4 m ²
Nominal voltage				
SPDT auxiliary switch				
				
	TMC..A	LMC..A	NMC..A	SMC..A
Open-close, 3-point				
AC/DC 24 V	TMC24A	LMC24A		
1	TMC24A-S			
AC 230 V	TMC230A	LMC230A		
1	TMC230A-S	LMC230A-S		
Modulating (2...10 V) ¹⁾				
AC/DC 24 V	TMC24A-SR	LMC24A-SR		
AC 230 V	TMC230ASR			
Communicative ²⁾ , parametrisable ³⁾				
AC/DC 24 V			NMC24A-MP	SMC24A-MP SMC24A-MOD⁴⁾
Technical data				
Shaft diameter	6...20 mm	6...20 mm	8...26.7 mm	10...20 mm
Sound power level	≤40 dB(A) @ 35 s	≤45 dB(A) @ 35 s	≤45 dB(A) @ 35 s	≤55 dB(A) @ 35 s
Running time motor 90°	35 s			
Manual override	Gear disengagement with push button, can be locked			
Connection	Connecting cable 1 m			
Direction of rotation	Selectable with switch			
Angle of rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops			
Position indication	Mechanical, add-on			
Degree of protection	IP54			
Ambient temperature	-30...50°C			
Storage temperature	-40...80°C			
Ambient humidity	95% RH, non-condensing			
EMC	CE according to 2014/30/EU			

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

²⁾ You can find suitable system diagrams at www.belimo.com.

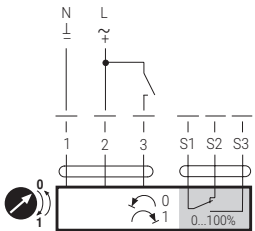
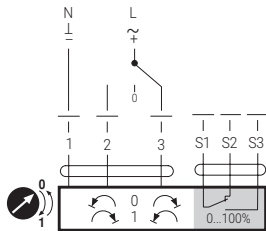
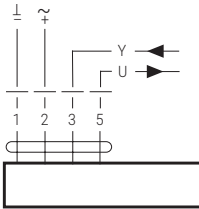
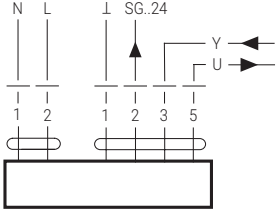
³⁾ Control, operating range, feedback, running time and other functions with MP types adjustable with PC-Tool or Service Tool ZTH EU.

⁴⁾ All MOD versions work with Modbus and BACnet.

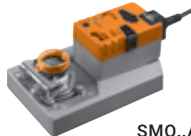
Other versions on request.

Electrical installation

Electrical and mechanical accessories **Page 10–11**

Open/close	3-point	Modulating	Parametrisable	Modulating
..MC24A, TMC24A-S, ..MC230A, TMC230A-S	..MC24A, TMC24A-S, ..MC230A, TMC230A-S	..MC24A-SR	..MC24A-MP	TMC230ASR
		Y = DC 0...10 V U = DC 2...10 V	Y = positioning signal U = position feedback	Y = DC 0...10 V U = DC 2...10 V
				

Very fast running rotary actuators

Nominal torque	4 Nm	8 Nm	8 Nm	16 Nm	16 Nm
Damper size up to approx.	0.8 m ²	1.5 m ²	1.5 m ²	3.2 m ²	3.2 m ²
Nominal voltage					
					
	LMQ..A	NMQ..A	NMD..A	SMQ..A	SMD..A

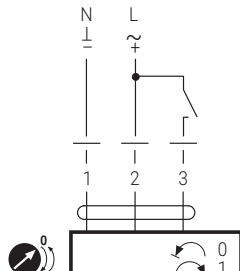
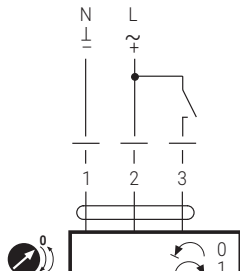
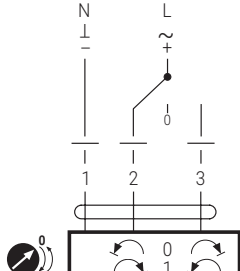
Open/close					
AC/DC 24 V	LMQ24A	NMQ24A		SMQ24A	
Open-close, 3-point					
AC/DC 24 V					SMD24A
AC 230 V			NMD230A		SMD230A
Modulating (2...10 V) ¹⁾					
AC/DC 24 V	LMQ24A-SR	NMQ24A-SR		SMQ24A-SR	
Technical data					
Shaft diameter	8...26.7 mm	8...26.7 mm	10...20 mm	12...26.7 mm	10...20 mm
Sound power 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
Running time motor 90°	2.5 s	4 s	20 s	7 s	20 s
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
Manual override	Gear disengagement with push button, can be locked				
Connection	Connecting cable 1 m				
Direction of rotation	Selectable with switch				
Angle of rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops				
Position indication	Mechanical, add-on				
Degree of protection	IP54				
Storage temperature	-40...80°C				
Ambient humidity	95% RH, non-condensing				
EMC	CE according to 2014/30/EU				

¹⁾ Modulating actuators: positioning signal Y = 0...10 V, 100 kΩ; operating range 2...10 V / position feedback U = 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.

Electrical installation

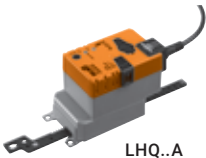
Electrical and mechanical accessories **Page 10-11**

Open/close		3-point	Modulating
..MQ24A		NMD..A / SMD..A	..MQ24A-SR
			Y = 0...10 V U = 2...10 V
			

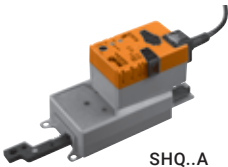
Very fast running linear actuators

Actuating force	100 N	200 N
Damper size up to approx.	0.7 m²	1.3 m²

Nominal voltage



LHQ..A



SHQ..A

Open/close		
AC/DC 24 V	LHQ24A100	SHQ24A100
Modulating (2...10 V) ¹⁾		
AC/DC 24 V	LHQ24A-SR100	SHQ24A-SR100
Technical data		
Stroke range	0...100 mm	0...100 mm
Sound power level	≤56 dB(A) @ 3.5 s	≤56 dB(A) @ 7 s
Running time motor 100 mm	3.5 s	7 s
Manual override	Gear disengagement with push button, can be locked	
Connection	Connecting cable 1 m	
Direction of stroke	Selectable with switch	
Height of stroke	Adjustable in 20 mm increments from 40...100 mm	
Degree of protection	IP54	
Ambient temperature	-30...40°C (40...50°C limited) ²⁾	
Storage temperature	-40...80°C	
Ambient humidity	95% RH, non-condensing	
EMC	CE according to 2014/30/EU	

¹⁾ Modulating actuators: Positioning signal Y = 0...10 V, 100 kΩ; operating range 2...10 V / position feedback U = 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

..HQ24A100

Priority on 3

Electrical and mechanical accessories **Page 10-11**

Modulating

..HQ24A-SR

Y = 0...10 V/U = 2...10 V

RobustLine rotary actuators for extreme conditions

Nominal torque

10 Nm

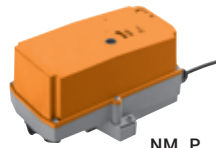
Damper size up to approx.

2 m²

20 Nm

4 m²

Nominal voltage



NM..P



SM..P

	Without auxiliary switch	With 1 SPDT auxiliary switch	Without auxiliary switch	With 1 SPDT auxiliary switch
Open/close, 3-point				
AC/DC 24 V	NM24P	NM24P-S	SM24P	SM24P-S
AC 230 V	NM230P ⁴⁾	NM230P-S ⁴⁾	SM230P ⁴⁾	SM230P-S ⁴⁾
Modulating (2...10 V) ¹⁾				
AC/DC 24 V	NM24P-SR		SM24P-SR	
AC 230 V	NM230PSR		SM230PSR	
Communicative ²⁾ , parametrisable ³⁾				
AC/DC 24 V	NM24P-MP		SM24P-MP	
Technical data				
Shaft diameter	10...20 mm		14...20 mm	
Running time motor 90°	150 s		150 s	
Manual override	Gear disengagement with push button, can be locked		Gear disengagement with push button, can be locked	
Motor sound power level	≤35 dB(A) @ 150 s		≤45 dB(A) @ 150 s	
Ambient temperature	-30...50°C (with heating to -40°C) ⁴⁾		-30...50°C (with heating to -40°C) ⁴⁾	
Connection	Connecting cable 1 m, FRNC			
Direction of rotation	Selectable with switch			
Angle of rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops			
Position indication	Mechanical, add-on			
Degree of protection	IP66/67 / NEMA 4X			
Storage temperature	-40...80°C			
Ambient humidity	100% RH			
EMC	CE according to 2014/30/EU			

¹⁾ Modulating actuators: Positioning signal Y = 0...10 V, 100 kΩ; operating range 2...10 V / position feedback U = 2...10 V, max. 1 mA for NM..P und SM..P, max. 0.5 mA for NKQ..P.

²⁾ You can find suitable system diagrams at www.belimo.com.

³⁾ Control, operating range, feedback, running time and other functions with MP types adjustable with PC-Tool or Service Tool ZTH EU.

⁴⁾ Available with heating and thermostat AC 230 V or with heating and humidistat AC 230 V for ambient temperatures down to -40°C (see overview of accessories **Page 12-13**). Other versions on request.

Electrical installation

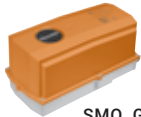
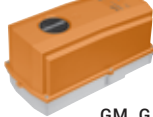
Electrical and mechanical accessories **Page 12-13**

Open/close	3-point	Modulating	Parametrisable	Modulating
..M24P, ..M24P-S, ..M230P, ..M230P-S	..M24P, ..M24P-S, ..M230P, ..M230P-S	..24P-SR	..24P-MP	..M230PSR
		Y = 0...10 V U = 2...10 V	Y = positioning signal U = position feedback	Y = 0...10 V U = 2...10 V

IP66/67 / NEMA 4X rotary actuators for outdoor applications

Nominal torque 16 Nm
Damper size up to approx. 3.2 m²

40 Nm
8 m²

Nominal voltage	Running time motor 90°		
		SMQ..G	GM..G..
		Without auxiliary switch	Without auxiliary switch
Open/close			
AC/DC 24 V	7 s	SMQ24G	
	150 s		GM24G-T
AC 230 V	150 s		GM230G-T
Modulating (2...10 V) ¹⁾			
AC/DC 24 V	7 s	SMQ24G-SR	
	150 s		GM24G-SR-T
Communicative ²⁾ , parametrisable ³⁾			
AC/DC 24 V	150 s		GM24G-MP-T
Technical data			
Shaft diameter	12...26.7 mm		14...26.7 mm
Manual override	Gear disengagement with push button, can be locked		Gear disengagement with push button, can be locked
Motor sound power level	≤63 dB(A) @ 7 s		≤45 dB(A) @ 150 s
Ambient temperature	-30...40°C ⁴⁾ (40...50°C limited) ⁵⁾		-30...50°C (with heating to -40°C) ⁴⁾
Connection	Connecting cable 1 m, FRNC		Connecting terminals
Direction of rotation	Selectable with switch		
Angle of rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops		
Position indication	Mechanical, add-on		
Degree of protection	IP66/67 / NEMA 4X		
Storage temperature	-40...80°C		
Ambient humidity	100% RH		
EMC	CE according to 2014/30/EU		

¹⁾ Modulating actuators: Positioning signal Y = 0...10 V, 100 kΩ; operating range 2...10 V / position feedback U = 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⁾ You can find suitable system diagrams at www.belimo.com.

³⁾ Control, operating range, feedback, running time and other functions with MP types adjustable with PC-Tool or Service Tool ZTH EU.

⁴⁾ Available with heating and thermostat/humidistat for ambient temperatures down to -40°C (see overview of accessories **Page 12-13**).

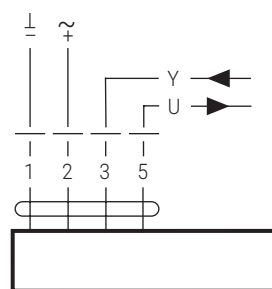
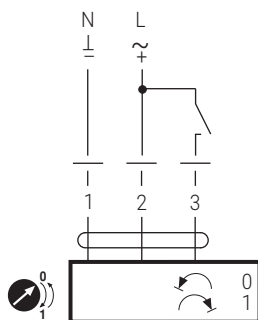
⁵⁾ Please contact your local Belimo representative.

Other versions on request.

Electrical installation

Electrical and mechanical accessories **Page 12-13**

Open/close	Modulating	Parametrisable
GM..G, SMQ24G	..24G-SR..	..24G-MP..
	Y = 0...10 V U = 2...10 V	Y = positioning signal U = position feedback



Actuators with high torque

Nominal torque

160 Nm

Damper size up to approx.

Special

Nominal voltage



PMCA..

Communicative, parametrisable

AC 24...240 V

DC 24...125 V

PMCA-S2-T

PMCA-BAC-S2-T

Control

Open/close

Modulating (2...10 V)

3-point

Modulating (4...20 mA)

BACnet MS/TP

Modbus RTU

MP-Bus

Open/close

3-point

Technical data

Form fit

17x17 mm

17x17 mm

Running time motor 90°

35 s (30...120 s variable)

35 s (30...120 s variable)

Motor sound power level

68 dB(A)

68 dB(A)

Parametrisation, commissioning, maintenance

Belimo Assistant App, ZTH EU

Manual override

Hand crank

Auxiliary switches

2 x SPDT

Connection

Connecting terminals

Direction of rotation

Selectable with Tool

Position indication

Mechanical (integrated)

Degree of protection

IP66/67 / NEMA 4X

EMC

CE according to 2014/30/EU

Ambient temperature

-30...40°C

Storage temperature

-40...80°C

Ambient humidity

100% RH

EMC

CE according to 2014/30/EU

Electrical installation

Electrical and mechanical accessories **Page 12–13**

Open/close

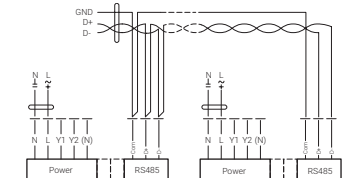
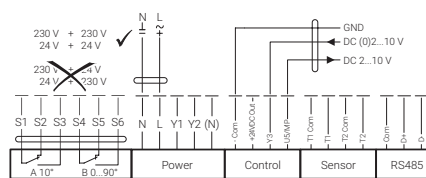
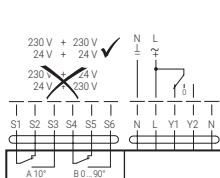
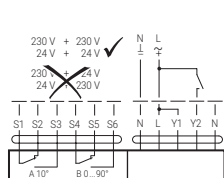
3-point

Modulating

Communicative (BACnet, Modbus)

PMCA-S2-T / PMCA-BAC-S2-T

PMCA-BAC-S2-T



Actuators with damper blade

Nominal torque	2 Nm	2 Nm	2 Nm	2 Nm
Pipe diameter in accordance with DIN EN 1506	DN 100	DN 125	DN 150	DN 160
Nominal voltage				
	CM...-100D	CM...-125D	CM...-150D	CM...-160D

Open-close, 3-point

AC/DC 24 V	CM24-L-100D.2	CM24-L-125D.2	CM24-L-150D.2	CM24-L-160D.2
AC 230 V	CM230-L-100D.2	CM230-L-125D.2	CM230-L-150D.2	CM230-L-160D.2

Modulating (2...10 V)¹⁾

AC/DC 24 V	CM24-SR-L-100D.2	CM24-SR-L-125D.2	CM24-SR-L-150D.2	CM24-SR-L-160D.2
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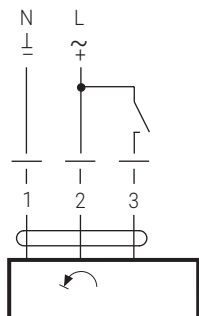
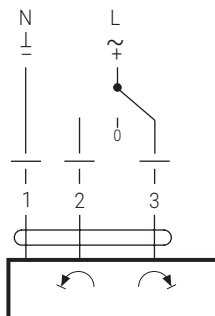
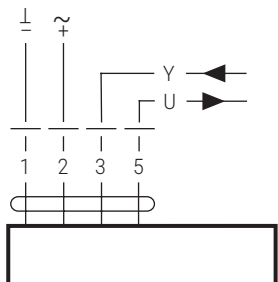
Technical data

Pipe diameter	100 mm	125 mm	150 mm	160 mm
Running time motor 90°	58 s	58 s	58 s	58 s
Air tight in accordance with DIN EN 1751	Class 3	Class 2	Class 2	Class 2
Resistance coefficient ζ in open position	0.48	0.3	0.3	0.3
Static differential pressure Δp above the damper	≤ 1000 Pa	≤ 1000 Pa	≤ 1000 Pa	≤ 1000 Pa
Manual override	Gear disengagement with magnet			
Connection	Connecting cable 1 m			
Direction of rotation	 Counterclockwise rotation (Closed position)			
Angle range damper blade	70° (Open-close)			
Motor sound power level	≤ 35 dB(A) @ 58 s			
Degree of protection	IP54			
Ambient temperature	-30...50°C			
Storage temperature	-40...80°C			
Ambient humidity	95% RH, non-condensing			
EMC	CE according to 2014/30/EU			

¹⁾ Modulating actuators: Positioning signal Y = 0...10 V, 100 k Ω ; operating range 2...10 V / position feedback U = 2...10 V, max. 1 mA.

Electrical installation

Electrical and mechanical accessories **Page 12–13**

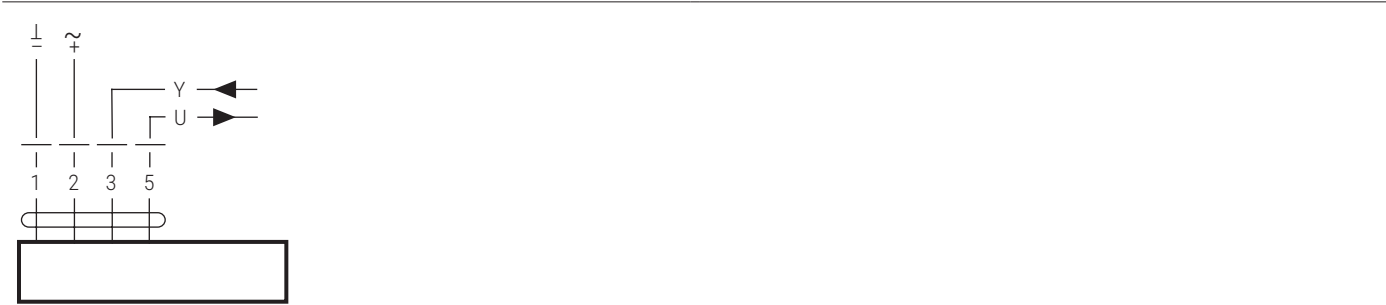
Open/close	3-point	Modulating
CM24-L-..., CM230-L-...	CM24-L-..., CM230-L-...	CM24-SR-L-...
		

Parametrisable rotary actuators with connecting terminals

Nominal torque	5 Nm	10 Nm	20 Nm	40 Nm
Damper size up to approx.	1 m²	2 m²	4 m²	8 m²
Nominal voltage				
	LM..A-TP	NM..A-TP	SM..A-TP	GM..A-TP
Communicative ¹⁾ , parametrisable ²⁾				
AC/DC 24 V	LM24A-MP-TP	NM24A-MP-TP	SM24A-MP-TP	GM24A-MP-TP
Technical data				
Shaft diameter	6...20 mm	8...26.7 mm	10...20 mm	12...26.7 mm
Sound power level	≤35 dB(A) @ 150 s	≤35 dB(A) @ 150 s	≤45 dB(A) @ 150 s	≤45 dB(A) @ 150 s
Running time motor 90°	150 s			
Manual override	Gear disengagement with push button, can be locked			
Connection	Connecting terminals			
Direction of rotation	Selectable with switch			
Angle of rotation	Max. 95°, can be limited on both sides by adjustable mechanical end stops			
Position indication	Mechanical, add-on			
Degree of protection	IP54			
Ambient temperature	-30...50°C			
Storage temperature	-40...80°C			
Ambient humidity	95% RH, non-condensing			
EMC	CE according to 2014/30/EU			

¹⁾ You can find suitable system diagrams at www.belimo.com.
²⁾ Control, operating range, feedback, running time and other functions with MP types adjustable with PC-Tool or Service Tool ZTH EU. Other versions on request.

Electrical installation	Electrical and mechanical accessories Page 8–9
Parametrisable	
..M24A-MP-TP	
Y = positioning signal	
U = position feedback	



Parametrisable rotary actuators with special control and connecting cable

Nominal torque

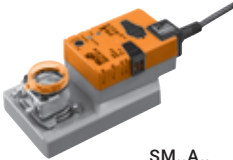
20 Nm

Damper size up to approx.

4 m²

Nominal voltage

Control



SM..A..

Parametrisable¹⁾

AC/DC 24 V	Modulating 4...20 mA	SM24A-MA
	Modulating 0...20 V PhC	SM24A-PC
	Modulating 0...135 Ω	SM24A-R9
Technical data		
Shaft 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		Selectable with switch
Angle of rotation		Max. 95°, can be limited on both sides by adjustable mechanical end stops
Position indication		Mechanical, add-on
Sound power level		≤45 dB(A) @ 150 s
Degree of protection		IP54
Ambient temperature		-30...50°C
Storage temperature		-40...80°C
Ambient humidity		95% RH, non-condensing
EMC		CE according to 2014/30/EU

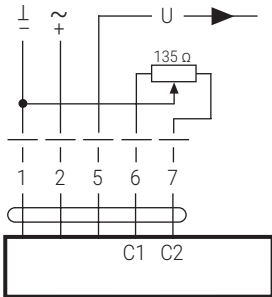
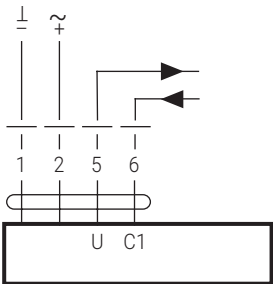
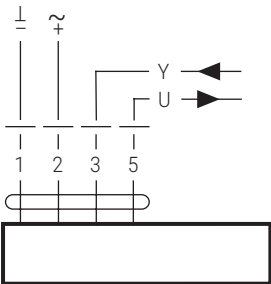
¹⁾ Running time and other functions are adjustable with PC-Tool or Service Tool ZTH EU.
Other versions on request.

Electrical installation

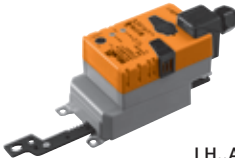
Electrical and mechanical accessories **Page 8–9**

Modulating

SM24A-MA	SM24A-PC	SM24A-R9
Y = positioning signal (4...20 mA) U = Position feedback (2...10 V)	U = Position feedback (2...10 V) C1 = positioning signal (0...20 V phase-cut signal)	U = Position feedback (2...10 V)

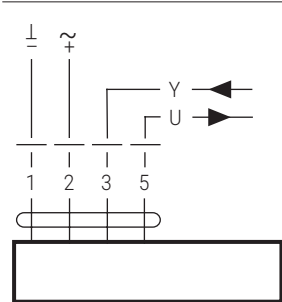


Parametrisable linear actuators with connecting terminals

Actuating force	150 N	
Damper size up to approx.	1 m ²	
Stroke (gear rod)	Nominal voltage	 LH..A60
Communicative ¹⁾ , parametrisable ²⁾		
60 mm	AC/DC 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	Selectable with switch	
Height of stroke	Adjustable in 20 mm increments from 20...100 mm	
Motor sound power level	≤45 dB(A) @ 150 s	
Degree of protection	IP54	
Ambient temperature	-30...50°C	
Storage temperature	-40...80°C	
Ambient humidity	95% RH, non-condensing	
EMC	CE according to 2014/30/EU	

¹⁾ You can find suitable system diagrams at www.belimo.com.
²⁾ Control, operating range, feedback, running time and other functions with MP types adjustable with PC-Tool or Service Tool ZTH EU.

Electrical installation	Electrical and mechanical accessories Page 8–9
Parametrisable	
..H24A-MP..	
Y = positioning signal	
U = position feedback	



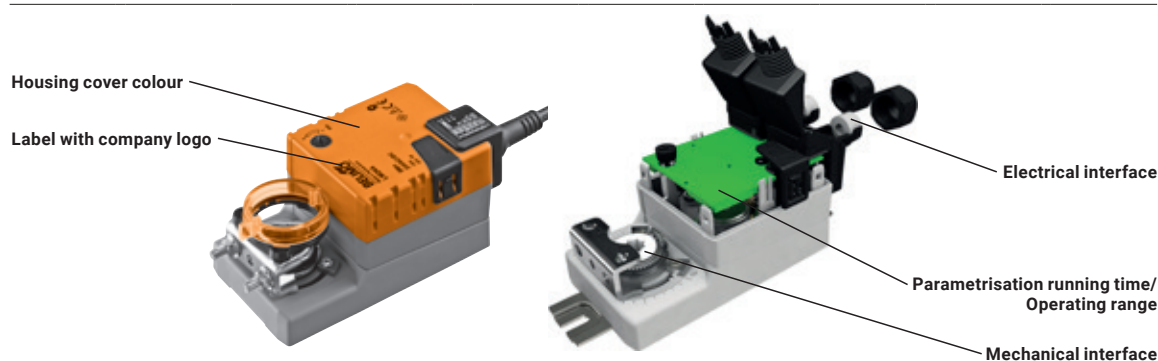


Configuration options

Some actuator product ranges permit adaptation to special customer preferences. These allow - on the basis of existing components - a selection of different cable lengths, mechanical interfaces, running times and operating ranges. Please get in touch with your local Belimo contact person.

Example

LM..A..



Numeration is not exhaustive.

Rotary actuators

	CM..	LM..A..	NM..A..	SM..A..	GM..A..
Configuration					
Housing cover colour	orange grey	orange grey	orange grey	orange grey	orange grey
Label with company logo, colour	Label: transparent Font: black	Label: transparent Font: black white	Label: transparent Font: black white	Label: transparent Font: black white	Label: transparent Font: black white
Mechanical interface	Shaft clamp, one-sided 6...12.7 mm Form fit 6x6 mm Form fit 8x8 mm Form fit 10x10 mm	Shaft clamp, one-sided 6...20 mm Form fit 8x8 mm Form fit 10x10 mm Form fit 12x12 mm	Shaft clamp, one-sided 8...26.7 mm Shaft clamp, reversible 8...20 mm Form fit 8x8 mm Form fit 10x10 mm Form fit 12x12 mm Form fit 16x16 mm	Shaft clamp, one-sided 8...26.7 mm Shaft clamp, reversible 10...20 mm Form fit 10x10 mm Form fit 12x12 mm Form fit 16x16 mm	Shaft clamp, reversible 12...26.7 mm
Electrical interface	Terminal connection IP20 Cable 1 m, PVC Cable 1 m, FRNC Cable 3 m, FRNC Cable 5 m, FRNC	Terminal connection IP20 Terminal connection IP54 Cable 1 m, PVC Cable 1 m, FRNC Cable 3 m, FRNC Cable 5 m, FRNC	Terminal connection IP20 Terminal connection IP54 Cable 1 m, PVC Cable 1 m, FRNC Cable 3 m, FRNC Cable 5 m, FRNC	Terminal connection IP20 Terminal connection IP54 Cable 1 m, PVC Cable 1 m, FRNC Cable 3 m, FRNC Cable 5 m, FRNC	Terminal connection IP20 Terminal connection IP54 Cable 1 m, PVC Cable 1 m, FRNC Cable 3 m, FRNC Cable 5 m, FRNC
Parametrisation running time	35 s 45 s 75 s	35 s 45 s 90 s 150 s	45 s 90 s 150 s	90 s 150 s	90 s 150 s
Parametrisation operating range	2...10 V 0.5...10 V Adaption option	2...10 V 0.5...10 V Adaption option	2...10 V 0.5...10 V Adaption option	2...10 V 0.5...10 V Adaption option	2...10 V 0.5...10 V Adaption option
Packaging	Single pack Multipack 20 pieces	Single pack Multipack 20 pieces	Single pack Multipack 20 pieces	Single pack Multipack 20 pieces	Single pack Multipack 20 pieces
General	Feasibility of the combinations on request Minimum order quantity with coloured label or customer logo: 20 pieces.				

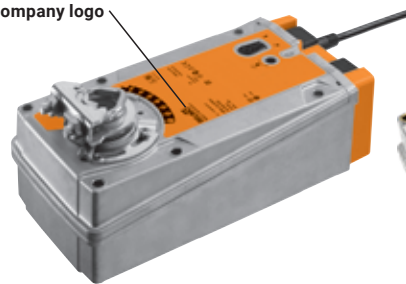
Configuration options

Some actuator product ranges permit adaptation to special customer preferences. These allow - on the basis of existing components - a selection of different cable lengths, mechanical interfaces, running times and operating ranges. Please get in touch with your local Belimo contact person.

Example

EF..A

Label with company logo



Parametrisation running time/
Operating range

Electrical interface

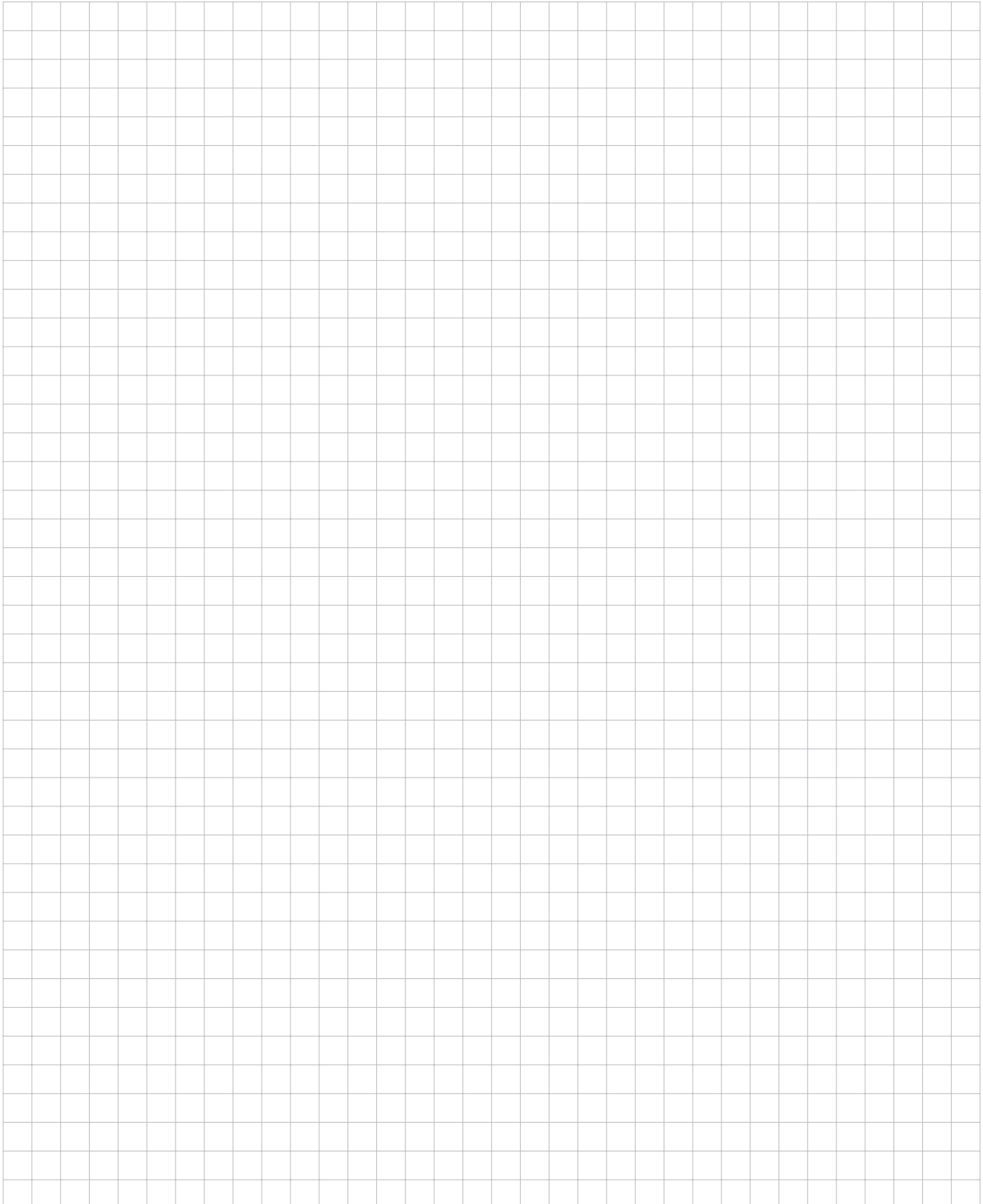
Heating

Mechanical interface

Numeration is not exhaustive.

	Rotary actuators, fail-safe		Very fast running rotary actuators		Linear actuators	
	NF..A../SF..A..	EF..A..	LMQ..A..	LH..A..		
Configuration						
Housing cover colour	orange grey		orange grey	orange grey		
Label with company logo, colour	Label: orange blue grey Font: black white black	Label: orange grey Font: black	Label: transparent blue black Font: black white white	Label: transparent blue black Font: black white white		
Mechanical interface	Shaft clamp, reversible 10...25.4 mm Form fit 10x10 mm Form fit 12x12 mm Form fit 16x16 mm	Shaft clamp, reversible 12...26.7 mm	Shaft clamp, one-sided 8...26.7 mm Shaft clamp, reversible Form fit 8x8 mm Form fit 10x10 mm Form fit 12x12 mm Form fit 16x16 mm	Without stroke limitation With stroke limitation		
Electrical interface	Terminal connection IP20 Terminal connection IP54 Cable 1 m, PVC Cable 1 m, FRNC Cable 3 m, FRNC Cable 5 m, FRNC	Terminal connection IP66 Cable 1 m, FRNC Cable 3 m, FRNC Cable 5 m, FRNC	Cable 1 m, PVC Cable 1 m, FRNC Cable 3 m, FRNC Cable 5 m, FRNC	Terminal connection IP20 Terminal connection IP54 Cable 1 m, PVC Cable 1 m, FRNC Cable 3 m, FRNC Cable 5 m, FRNC		
Parametrisation running time	45 s 75 s 90 s 150 s	75 s 90 s 150 s	2.5 s 4 s 5 s 7 s 10 s	75 s/100 mm 90 s/100 mm 120 s/100 mm 150 s/100 mm		
Parametrisation operating range	2...10 V 0.5...10 V Adaption option	2...10 V 0.5...10 V Adaption option	2...10 V 0.5...10 V Adaption option	2...10 V 0.5...10 V Adaption option		
Packaging	Single pack Multipack 20 pieces	Single pack Multipack 20 pieces	Single pack Multipack 20 pieces	Single pack Multipack 20 pieces		
Special		Heating				
General	Feasibility of the combinations on request Minimum order quantity with coloured label or customer logo: 20 pieces.					





All inclusive.

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

Always focusing on customer added 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 world-wide 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



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