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		Nominal torque [1]	Actuating force	Stroke range	Spindle diameter	Form fit	For damper size up to approximately [1]	
Rotary actuators with connecting cable								Page 11
CM..		2 Nm			6–12.7 mm		0.4 m²	
LM..A..		5 Nm			6–20 mm		1 m²	
NM..A..		10 Nm			8–26.7 mm		2 m²	
SM..A..		20 Nm			10–20 mm		4 m²	
GM..A..		40 Nm			12–26.7 mm		8 m²	
Rotary actuators with connecting terminals								Page 13
CM..		2 Nm			6–12.7 mm		0.4 m²	
LM..A..		5 Nm			6–20 mm		1 m²	
NM..A..		10 Nm			8–26.7 mm		2 m²	
SM..A..		20 Nm			10–20 mm		4 m²	
GM..A..		40 Nm			12–26.7 mm		8 m²	
Linear actuators with connecting cable								Page 15
CH..			125 N	0–100 mm			0.8 m²	
LH..A..			150 N	0–300 mm			1 m²	
SH..A..			450 N	0–300 mm			3 m²	

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						Page 16
TF..		2.5 Nm			6 – 12 mm	0.5 m²
LF..		4 Nm			8 – 16 mm	0.8 m²
NF..A..		10 Nm			10 – 25.4 mm	2 m²
SF..A..		20 Nm			10 – 25.4 mm	4 m²
EF..A..		30 Nm			12 – 26.7 mm	6 m²
SKM230.. + CM24K..		2 Nm			6 – 12.7 mm	0.4 m²
NKQ..A..		6 Nm			8 – 26.7 mm	1.2 m²
GK..A..		40 Nm			12 – 26.7 mm	8 m²

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 m²	
LMC..A..			5 Nm			6 – 20 mm	1 m²	
NMC..A..			10 Nm			8 – 26.7 mm	2 m²	
SMC..A..			20 Nm			10 – 20 mm	4 m²	
Very fast running rotary actuators without fail-safe function								Page 20
LMQ..A..			4 Nm			8 – 26.7 mm	0.8 m²	
NMQ..A..			8 Nm			8 – 26.7 mm	1.5 m²	
NMD..A..			8 Nm			10 – 20 mm	1.5 m²	
SMQ..A..			16 Nm			12 – 26.7 mm	3.2 m²	
SMD..A..			16 Nm			10 – 20 mm	3.2 m²	
Very fast running linear actuators without fail-safe function								Page 21
LHQ..A..				100 N	0 – 100 mm		0.7 m²	
SHQ..A..				200 N	0 – 100 mm		1.3 m²	
RobustLine rotary actuators for extreme conditions, without / with fail-safe function								Page 22
NM..P..			10 Nm			10 – 20 mm	2 m²	
SM..P..			20 Nm			14 – 20 mm	4 m²	
NKQ..P..		•	6 Nm			10 – 20 mm	1.2 m²	
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 m²	
GM..G..			40 Nm			14 – 26.7 mm	8 m²	
NF..G..		•	10 Nm			12 – 26.7 mm	2 m²	
SF..G..		•	20 Nm			12 – 26.7 mm	4 m²	
GK..G..		•	40 Nm			14 – 26.7 mm	8 m²	

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 m²	
NM..A..		10 Nm			8 – 26.7 mm	modulating 2 – 10 V [2]	2 m²	
SM..A..		20 Nm			10 – 20 mm	modulating 2 – 10 V [2]	4 m²	
GM..A..		40 Nm			12 – 26.7 mm	modulating 2 – 10 V [2]	8 m²	
Parameterisable rotary actuators with special control and connecting cable								Page 26
SM24A-MA		20 Nm			10 – 20 mm	modulating 4 – 20 mA [3]	4 m²	
SM24A-PC		20 Nm			10 – 20 mm	modulating 0 – 20 V Phs [3]	4 m²	
SM24A-R9		20 Nm			10 – 20 mm	modulating 0 – 135 Ω [3]	4 m²	
Parameterisable linear actuators with connecting terminals								Page 27
LH..A..			150 N	0 – 300 mm		modulating 2 – 10 V [2]	1 m²	

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)							Page 29
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.

Subject to technical modifications

		Rotary actuators					Linear actuators		
		CM..	LM..A..	NM..A..	SM..A..	GM..A..	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		
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							
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
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
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
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]

[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.

Subject to technical modifications

		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, 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 values140 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.

Special actuators without / with fail-safe function

		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..	PMCA.. PKCA..
										
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..	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	Z-UIC	
Digital position indication for modulating actuators		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	
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]	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.

Subject to technical modifications

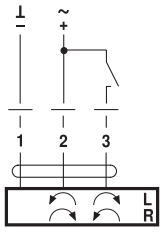
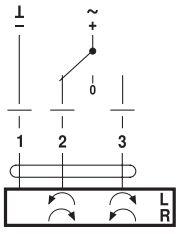
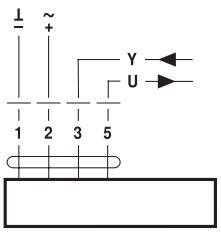
Nominal voltage 24 V AC/DC 230 V AC	Direction of rotation	Angle of rotation	Degree of protection	Nominal torque 2 Nm Damper size up to approx. 0.4 m²
				 CM..
Open-close, 3-point				
24 V	counter-clockwise rotation	0 – 287.5° / without limits	IP 54	CM24-L
	clockwise rotation			CM24-R
	counter-clockwise 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

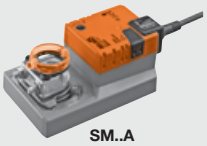
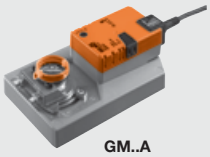
Spindle diameter	6 – 12.7 mm
Running time motor 90°	75 s
Manual override	Gear disengagement with magnet
Connection	Connecting cable 1 m
Position indication	Mechanical, add-on
Sound power level	≤35 dB(A) @ 75 s
EMC	CE according to 2014/30/EU
Ambient temperature	–30...+50°C
Non-operating temperature	–40...+80°C
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..
		Y = DC 0 – 10 V U = DC 2 – 10 V 

Electrical and mechanical accessories on page 7

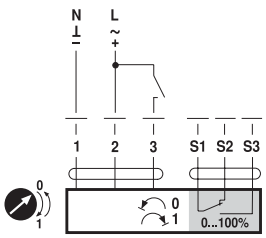
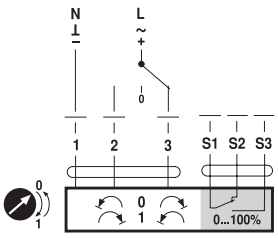
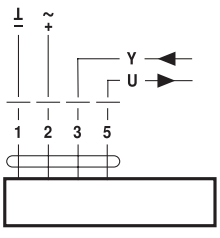
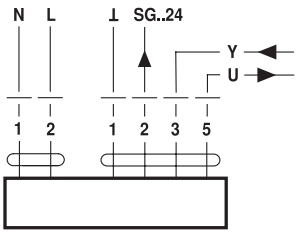
Nominal torque		5 Nm	10 Nm	20 Nm	40 Nm
Damper size up to approx.		1 m²	2 m²	4 m²	8 m²
Nominal voltage 24 V AC/DC 230 V AC	Auxiliary switch SPDT	 LM..A	 NM..A	 SM..A	 GM..A
Open-close, 3-point					Open-close
24 V		LM24A	NM24A	SM24A	GM24A
	1	LM24A-S	NM24A-S	SM24A-S	
230 V		LM230A	NM230A	SM230A	GM230A
	1	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	
Parameterisable [2]					
24 V		LM24A-MP	NM24A-MP	SM24A-MP	GM24A-MP

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
				

Electrical and mechanical accessories on page 7

Subject to technical modifications

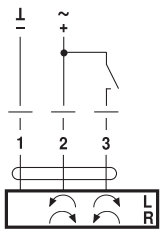
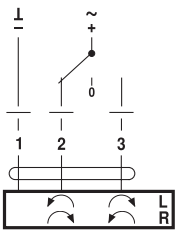
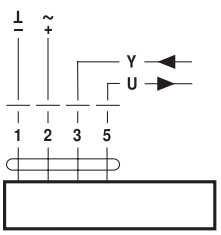
				Nominal torque	2 Nm
				Damper size up to approx.	0.4 m²
Nominal voltage 24 V AC/DC	Direction of rotation	Angle of rotation	Degree of protection		 CM..-T..
Open-close, 3-point					
24 V	counter-clockwise rotation / clockwise rotation	0 – 287.5° / without limits	IP 20		CM24-T-L / CM24-T-R
Modulating (2 – 10 V) [1), 2)]					
24 V	counter-clockwise rotation / clockwise rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	IP 20		CM24-SR-T-L / CM24-SR-T-R
Modulating (2 – 10 V) with adaption [1), 2)]					
24 V	counter-clockwise rotation / clockwise rotation	max. 95°, can be limited at both ends with adjustable mechanical end stops	IP 20		CM24-SX-T-L / CM24-SX-T-R

Technical data

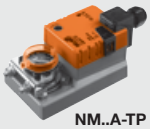
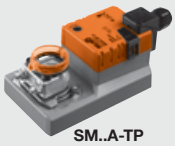
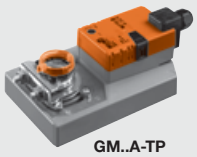
Spindle diameter	6 – 12.7 mm
Running time motor 90°	75 s
Manual override	Gear disengagement with magnet
Connection	Connecting terminals
Position indication	Mechanical, add-on
Sound power level	≤35 dB(A) @ 75 s
EMC	CE according to 2014/30/EU
Ambient temperature	–30...+50°C
Non-operating temperature	–40...+80°C
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	3-point	Modulating
CM24..	CM24..	CM24..-SR.., CM24..-SX ..
		Y = DC 0 – 10 V U = DC 2 – 10 V 

Electrical and mechanical accessories on page 7

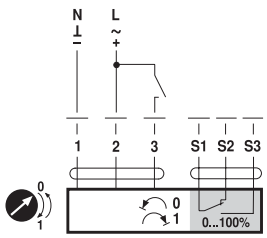
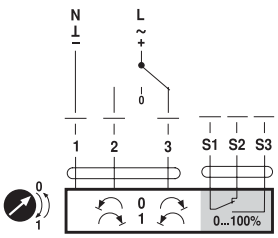
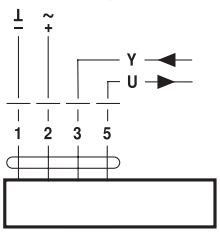
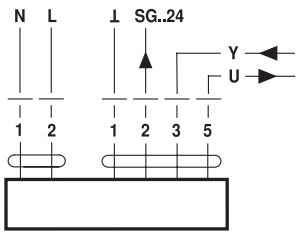
Nominal torque		5 Nm	10 Nm	20 Nm	40 Nm
Damper size up to approx.		1 m²	2 m²	4 m²	8 m²
Nominal voltage 24 V AC/DC 230 V AC	Auxiliary switch SPDT	 LM..A-TP	 NM..A-TP	 SM..A-TP	 GM..A-TP
Open-close, 3-point					Open-close
24 V		LM24A-TP	NM24A-TP	SM24A-TP	GM24A-TP
	1	LM24A-S-TP	NM24A-S-TP	SM24A-S-TP	
230 V		LM230A-TP	NM230A-TP	SM230A-TP	GM230A-TP
	1	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

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

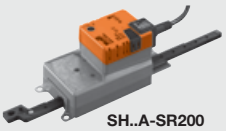
[1] Modulating actuators: control signal Y = DC 0 – 10 V, 100 kΩ; operating range 2 – 10 V / position feedback U = DC 2 – 10 V, max. 1 mA.
[2] Control, operating range, position feedback, running time and further functions can be set on MP types with PC-Tool or the parameterising device ZTH AP/ ZTH EU.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

Electrical and mechanical accessories on page 7

Subject to technical modifications

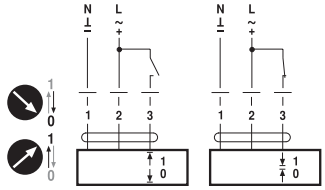
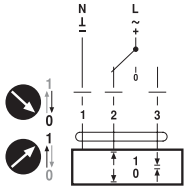
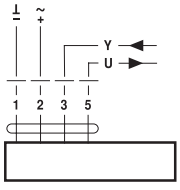
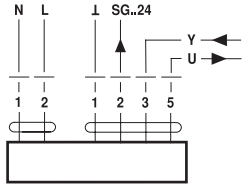
Stroke (gear rod)	Nominal voltage 24 V AC/DC 230 V AC			
Actuating force		125 N	150 N	450 N
Damper size up to approx.		0.8 m²	1 m²	3 m²
		 CH..L100	 LH..A60	 SH..A-SR200
Open/close, 3-point				
60 mm	24 V	CH24-L60.2	LH24A60	
100 mm		CH24-L100.2	LH24A100	SH24A100
200 mm			LH24A200	SH24A200
300 mm			LH24A300	SH24A300
60 mm	230 V	CH230-L60.2	LH230A60	
100 mm		CH230-L100.2	LH230A100	SH230A100
200 mm			LH230A200	SH230A200
300 mm			LH230A300	SH230A300
Modulating (2 – 10 V) [1]		Direction of stroke 0 [2]	Direction of stroke 1 [2]	
60 mm	24 V	CH24-SR-L60.2	CH24-SR-R60.2	
100 mm		CH24-SR-L100.2	CH24-SR-R100.2	LH24A-SR100	SH24A-SR100
200 mm				LH24A-SR200	SH24A-SR200
100 mm	230 V			LH230ASR100	SH230ASR100
200 mm				LH230ASR200	SH230ASR200
Modulating (2 – 10 V) with adaption [1]		Direction of stroke 0 [2]	Direction of stroke 1 [2]	
40 mm	24 V	CH24-SX-L40.2	CH24-SX-R40.2		
100 mm		CH24-SX-L100.2	CH24-SX-R100.2		
Parameterisable [3]			Connecting cable	Connecting terminals	
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

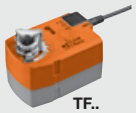
Running time motor 100 mm	380 s	150 s	150 s
Manual override	Gear disengagement with magnet	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked
Connection	Connecting cable 1 m	Connecting cable 1 m / connecting terminals	Connecting cable 1 m
Direction of stroke	Can be selected via contact	Can be selected with switch	Can be selected with switch
Stroke height	Adjustable in 20 mm increments	Adjustable in 20 mm increments	Adjustable in 20 mm increments
Sound power level	≤35 dB(A) @ 380 s	≤45 dB(A) @ 150 s	≤52 dB(A) @ 150 s
Degree of protection	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
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. 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..	..H24A.., ..H230A..	CH24-S.., ..H24A-SR..	..H24A-MP..	..H230ASR..
Priority on 3		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
				

Electrical and mechanical accessories on page 7

Nominal torque		2.5 Nm		4 Nm		10 Nm		20 Nm		30 Nm	
Damper size up to approx.		0.5 m²		0.8 m²		2 m²		4 m²		6 m²	
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
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									
Parameterisable [2]		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

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

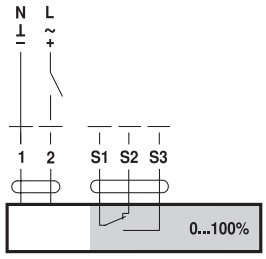
[1] Modulating actuators: control signal Y = DC 0 – 10 V, 100 kΩ; operating range 2 – 10 V / position feedback U = DC 2 – 10 V, max. 1 mA.
[2] Control, operating range, position feedback, running time and further functions can be set on MP types with PC-Tool or the parameterising device ZTH AP/ ZTH EU.
[3] IP 66 versions on request.
[4] Heating for ambient temperatures to –40 °C on request.
Other versions on request.

Subject to technical modifications

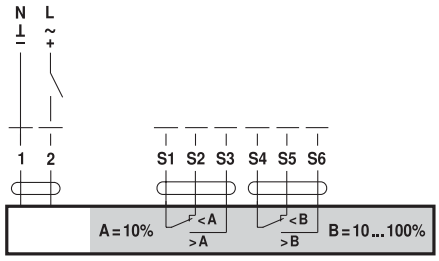
Electrical installation

Open-close

..F24, ..F24-S, ..F230, ..F230-S

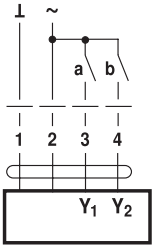


..F24A, ..F24A-S2, ..F230A, ..F230A-S2, ..FA, ..FA-S2



3-point

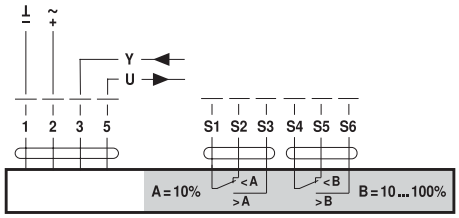
TF24-3, ..F24A-3



Modulating

TF24-SR, TF230-SR, ..F24A-SR, ..F24A-SR-S2

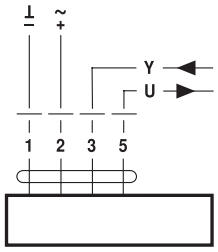
Y = DC 0 – 10 V
U = DC 2 – 10 V



Parameterisable

..F24-MFT.., ..F24A-MP

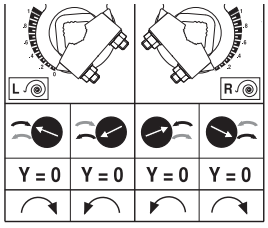
Y = Control signal
U = Position feedback



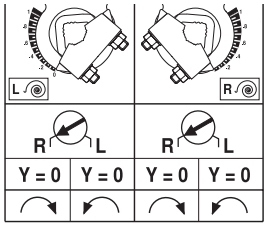
Direction of rotation

Modulating

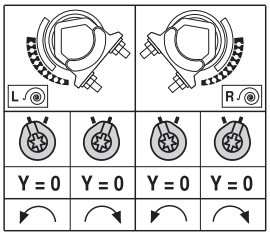
TF24-SR, TF230-SR



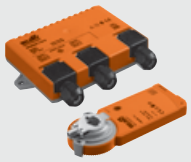
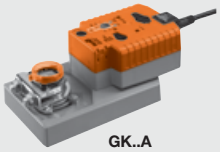
LF24-SR



..F24A-SR, ..F24A-SR-S2



Electrical and mechanical accessories on page 8

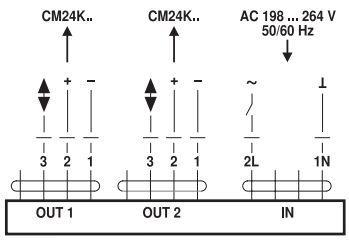
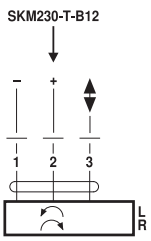
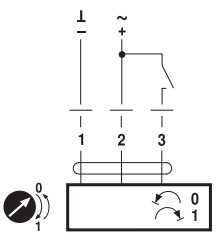
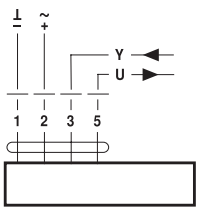
Nominal torque	2 Nm		6 Nm	40 Nm
Damper size up to approx.	0.4 m²		1.2 m²	8 m²
Nominal voltage 24 V AC/DC 230 V AC			 NKQ..A	 GK..A
Open-close	↶ counter-clockwise rotation	↷ clockwise rotation		
24 V	CM24K-T-L.2	CM24K-T-R.2	NKQ24A-1	GK24A-1
External SuperCap module				
230 V	SKM230-T-B12.1			
Modulating (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

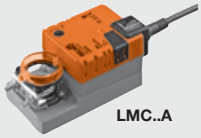
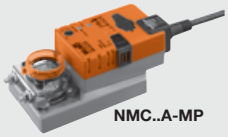
[1] Modulating actuators: control signal Y = DC 0 – 10 V, 100 kΩ; operating range 2 – 10 V / position feedback U = DC 2 – 10 V, max. 0.5 mA.
[2] Control, operating range, position feedback, running time and further functions can be set on MP types with PC-Tool or the parameterising device ZTH AP/ ZTH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

Electrical installation

Open-close		Open-close	Modulating	Parameterisable
SKM230-T-B12.1	CM24K-T..	GK24A-1, NKQ24A-1	..24A-SR	GK24A-MP
			Y = DC 0 – 10 V U = DC 2 – 10 V	Y = Control signal U = Position feedback
				

Electrical and mechanical accessories on page 8

Subject to technical modifications

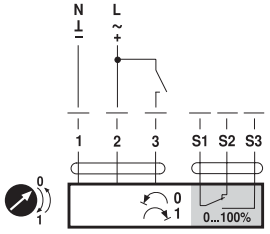
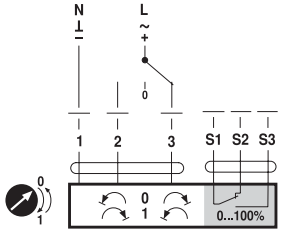
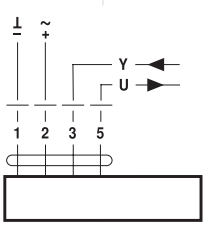
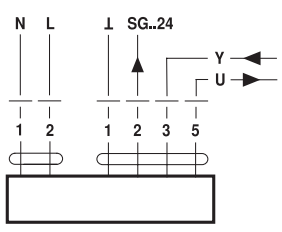
Nominal torque		2 Nm	5 Nm	10 Nm	20 Nm
Damper size up to approx.		0.4 m²	1 m²	2 m²	4 m²
Nominal voltage 24 V AC/DC 230 V AC	**Auxiliary switch SPDT**	 TMC..A	 LMC..A	 NMC..A-MP	 SMC..A-MP
Open-close, 3-point					
24 V		TMC24A	LMC24A		
	1	TMC24A-S			
230 V		TMC230A	LMC230A		
	1	TMC230A-S			
Modulating (2 – 10 V) [1]					
24 V		TMC24A-SR	LMC24A-SR		
230 V		TMC230ASR			
Parameterisable [2]					
24 V				NMC24A-MP	SMC24A-MP

Technical data

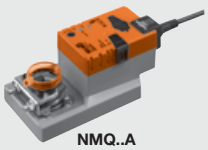
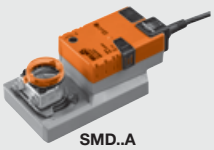
Spindle diameter	6 – 20 mm	6 – 20 mm	8 – 26.7 mm	10 – 20 mm
Running time motor 90°	35 s	35 s	35 s	35 s
Manual override	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, 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
		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 

Electrical and mechanical accessories on page 9

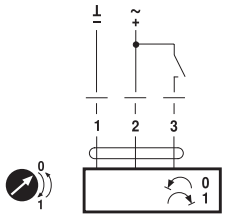
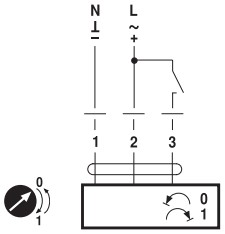
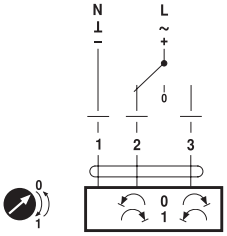
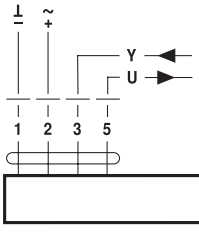
Nominal torque	4 Nm	8 Nm	8 Nm	16 Nm	16 Nm
Damper size up to approx.	0.8 m²	1.5 m²	1.5 m²	3.2 m²	3.2 m²
Nominal voltage 24 V AC/DC 230 V AC	 LMQ..A	 NMQ..A	 NMD..A	 SMQ..A	 SMD..A
Open-close					
24 V	LMQ24A	NMQ24A		SMQ24A	
Open-close, 3-point					
24 V					SMD24A
230 V			NMD230A		SMD230A
Modulating (2 – 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

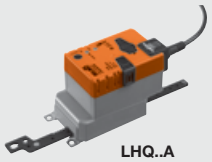
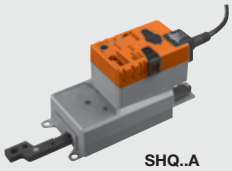
[1] Modulating actuators: control signal Y = DC 0 – 10 V, 100 kΩ; operating range 2 – 10 V / position feedback U = DC 2 – 10 V, max. 0.5 mA for LMQ..A, NMQ..A, SMQ..A
[2] Please get in touch with your local BELIMO contact person.
Other versions on request.

Electrical installation

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

Electrical and mechanical accessories on page 9

Subject to technical modifications

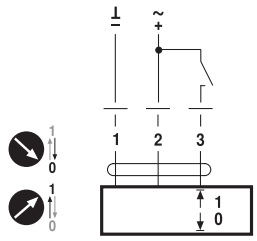
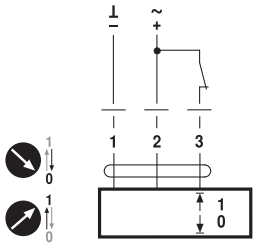
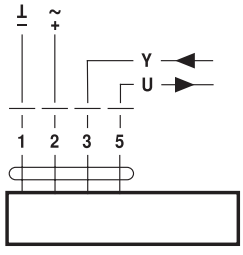
	Actuating force	100 N	200 N
	Damper size up to approx.	0.7 m²	1.3 m²
Nominal voltage 24 V AC/DC		 LHQ..A	 SHQ..A
Open-close			
24 V		LHQ24A100	SHQ24A100
Modulating (2 – 10 V) [1]			
24 V		LHQ24A-SR100	SHQ24A-SR100

Technical data

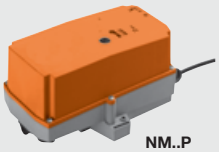
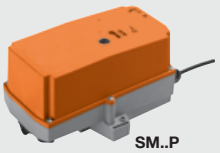
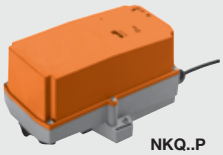
Stroke range	0 – 100 mm	0 – 100 mm
Running time motor 100 mm	3.5 s	7 s
Manual override	Gear disengagement with push-button, can be locked	Gear disengagement with push-button, can be locked
Connection	Connecting cable 1 m	Connecting cable 1 m
Direction of stroke	Can be selected with switch	Can be selected 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
	Priority on 3 	Y = DC 0 – 10 V U = DC 2 – 10 V 

Electrical and mechanical accessories on page 9

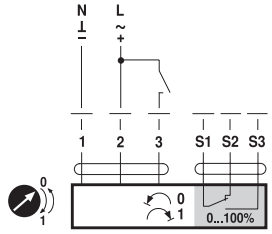
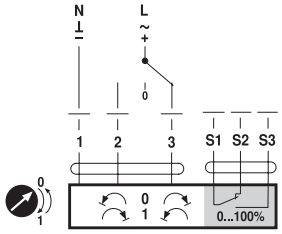
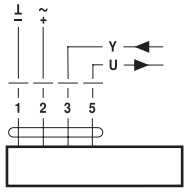
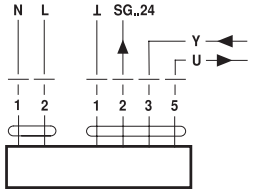
Open-close	3-point	(2–10 V)	Parameterisable	Nominal voltage 24 V AC/DC 230 V AC		Nominal torque	10 Nm	20 Nm	6 Nm
						Damper size up to approx.	2 m²	4 m²	1.2 m²
							 NM..P	 SM..P	 NKQ..P
Open/close, 3-point							without auxiliary switch	with 1 auxiliary switch SPDT	without auxiliary switch	with 1 auxiliary switch SPDT	without auxiliary switch
•	•			24 V			NM24P	NM24P-S	SM24P	SM24P-S	
•				24 V							NKQ24P-1
•	•			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]		
Parameterisable [2]							without auxiliary switch		without auxiliary switch		without auxiliary switch
			•	24 V			NM24P-MP		SM24P-MP		

Technical data

Fail-safe function	–	–	⊣⊢
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.

⊣⊢ = 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 installation

Open-close	3-point	Modulating	Parameterisable	Modulating
..M24P, ..M24P-S, ..M230P, ..M230P-S, NQK24P-1	..M24P, ..M24P-S, ..M230P, ..M230P-S	..24P-SR	..24P-MP	..M230PSR
		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 

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 m²	8 m²	2 m²		4 m²		8 m²
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						
	150 s		GM24G-T					GK24G-1
230 V	150 s		GM230G-T					
AC 24 – 240 V DC 24 – 125 V	<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						
	150 s		GM24G-SR-T	NF24G-SR-L	NF24G-SR-S2-L	SF24G-SR-L	SF24G-SR-S2-L	GK24G-SR
Parameterisable [2]		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		
	150 s		GM24G-MP-T					GK24G-MP

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.

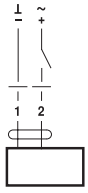
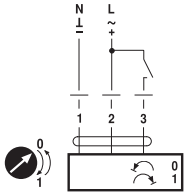
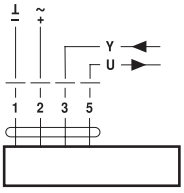
[2] Control, operating range, position feedback, running time and further functions on MP types can be set with PC-Tool or the parameterising device ZTH AP/ ZTH EU.

[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
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

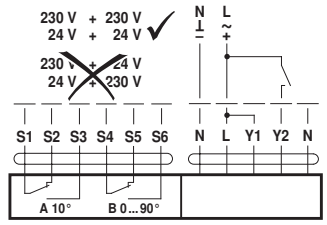
Technical data

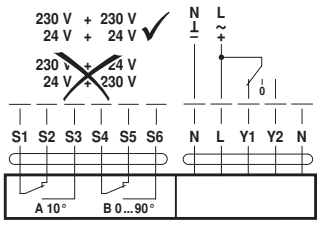
Fail-safe	–	–	●
Form fit	17x17 mm	17x17 mm	17x17 mm
Running time motor 90°	35 s (30..120 s variable)	35 s (30..120 s variable)	35 s (30..120 s variable)
Running time fail-safe position 90°	–	–	30 s
Manual override	Hand crank	Hand crank	Hand crank
Connection	Connecting terminals	Connecting terminals	Connecting 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**

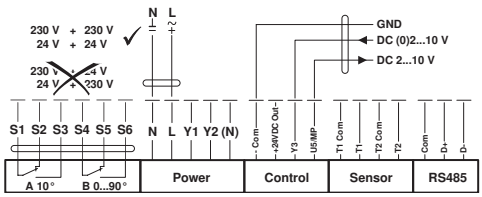
PMCA-S2-T / PMCA-BAC-S2-T / PKCA-BAC-S2-T

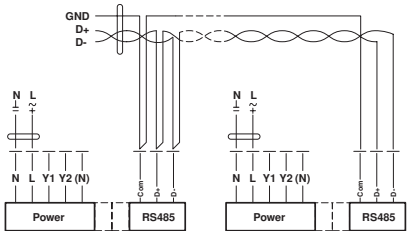




Modulating | **Communicative (BACnet, Modbus)**

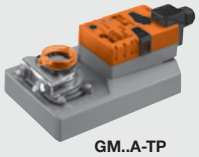
PMCA-BAC-S2-T / PKCA-BAC-S2-T





Electrical and mechanical accessories on page 10

Subject to technical modifications

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 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

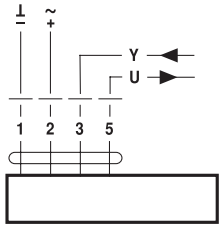
[1)] Control, operating range, position feedback, running time and further functions on MP types can be set with PC-Tool or the parameterising device ZTH AP/ ZTH EU.
Other versions on request.

Electrical installation

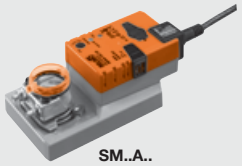
Parameterisable

..M24A-MP-TP

Y = Control signal
U = Position feedback



Parameterisable rotary actuators with special control and connecting cable

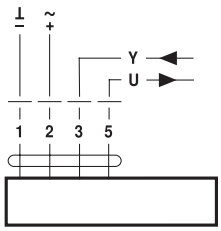
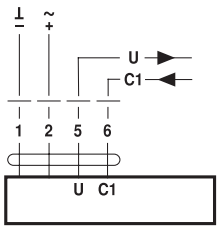
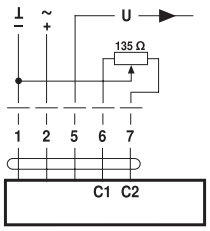
		Nominal torque	20 Nm
		Damper size up to approx.	4 m²
Nominal voltage 24 V AC/DC	Control		 SM..A..
Parameterisable [1]			
24 V	Modulating 4 – 20 mA		SM24A-MA
	Modulating 0 – 20 V Phs		SM24A-PC
	Modulating 0 – 135 Ω		SM24A-R9

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

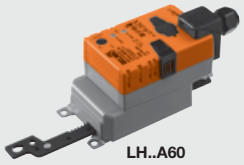
[1] Running time and further functions can be set with PC-Tool or the parameterising device ZTH AP/ ZTH EU.
Other versions on request.

Electrical installation

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

Electrical and mechanical accessories on page 7

Subject to technical modifications

Stroke (gear rod)	Nominal voltage 24 V AC/DC	Actuating force 150 N Damper size up to approx. 1 m²
		 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

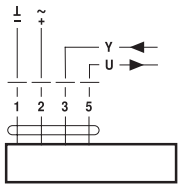
[1] Control, operating range, position feedback, running time and further functions on MP types can be set with PC-Tool or the parameterising device ZTH AP/ ZTH EU.

Electrical installation

Parameterisable

..H24A-MP..

Y = Control signal
U = Position feedback

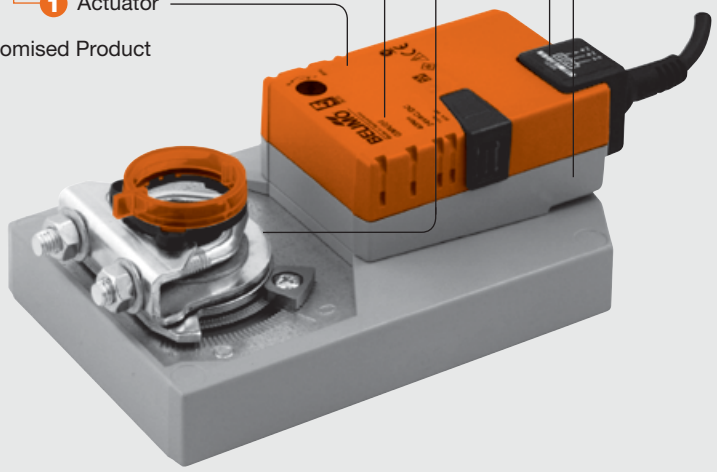


Electrical and mechanical accessories on page 7

Market description: **NM230AX-SR**

Type code: **NMA - 45 0 1 01 0002**

6 Packaging
5 Running Time
4 Electrical Connection
3 Mechanical Interface
2 Label on Housing
1 Actuator
A Customised Product



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

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
- 8×8/10×10/12×12/16×16mm
- 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.

Subject to technical modifications

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	

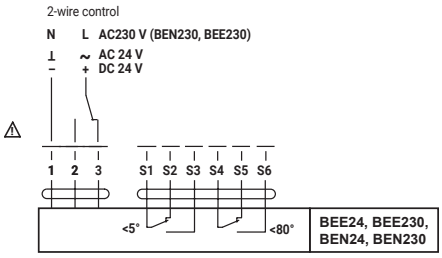
Technical data

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		

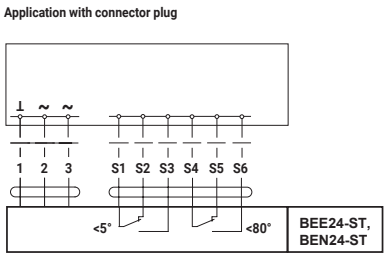
Electrical installation

Open-close

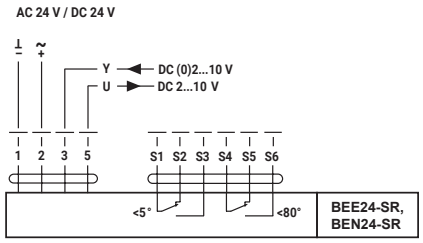
BEE24, BEE230, BEN24, BEN230



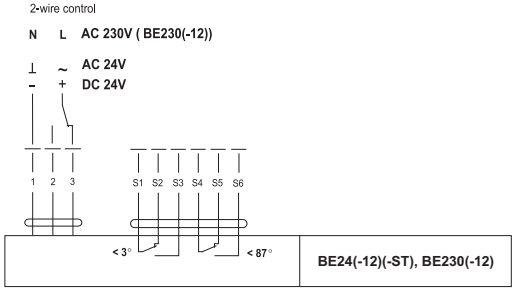
BEE24-ST, BEN24-ST

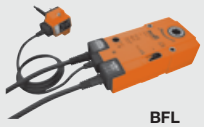
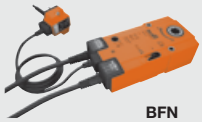


BEE24-SR, BEN24-SR



BE24(-12)(-ST), BE230(-12)



Nominal torque	**Motor**	4 Nm	9 Nm	11 Nm	18 Nm
	Fail-safe	3 Nm	7Nm	8.5 Nm	12 Nm
	Agency listing	CE Certification			
Nominal voltage 24 V AC/DC 230 V AC		 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-T
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-T-ST	BF24-T-ST
AC 230V 50/60Hz	BFL230	BFN230	BFG230	BF230
AC 230V 50/60Hz with thermal trip	BFL230-T	BFN230-T	BFG230-T	BF230-T

Modulating (AC 24V 50/60Hz, DC 24V)

Control signal Y DC (0)2...10V	BFL24-SR(-T) [1]			BF24-SR(-T) [2] [3]
Feedback signal U DC 2...10V				

Technical data

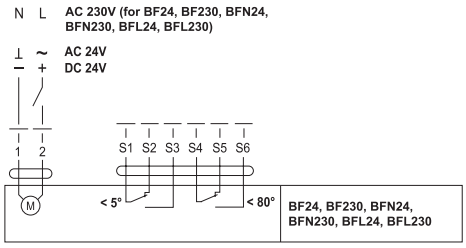
Running time	**Motor**	<60s	<60s	120s	120s
	Fail-safe	20s	20s	20s	16s
Built-in 2 SPDT auxiliary switch		Built-in		Built-in	
Form-fit		12 x 12mm (with 10 x 10mm adaptor)		10 x 10mm	12 x 12mm (with 10 x 10mm adaptor)
Manual override function		Yes		Yes	
Angle of rotation		Max.95°	Max.95°	Max.180°	Max.180°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

[1] For BLF24-SR, the motor torque is 4Nm and the fail-safe torque is 4Nm, motor running time is 150s.
[2] BLF24-SR has 1 SPDT auxiliary switch built-in.
[3] BLF24-SR has no manual override function.

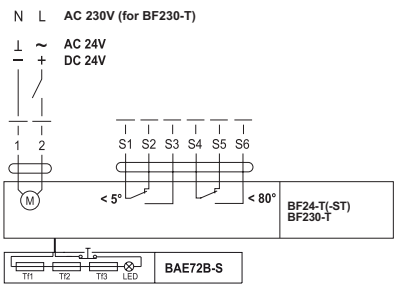
Electrical installation

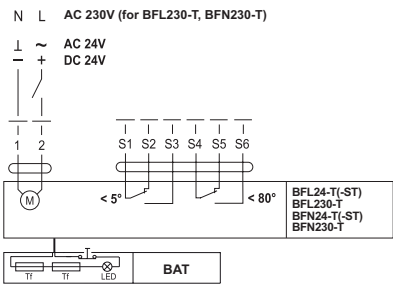
Open-close

BF24, BF230, BFN24, BFN230, BFL24, BFL230



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



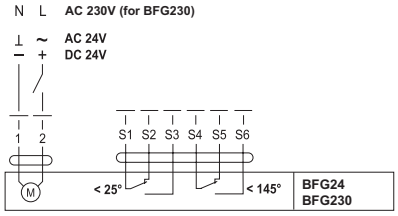


Subject to technical modifications

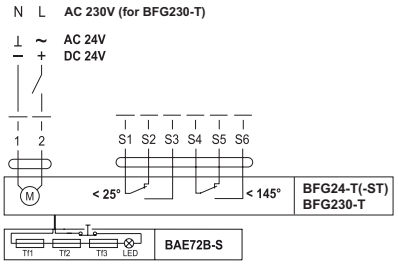
Electrical installation

Open-close

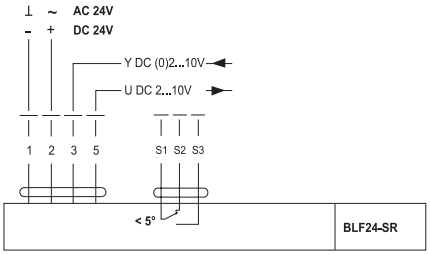
BFG24, BFG230

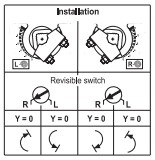


BFG24-T(-ST), BFG230-T

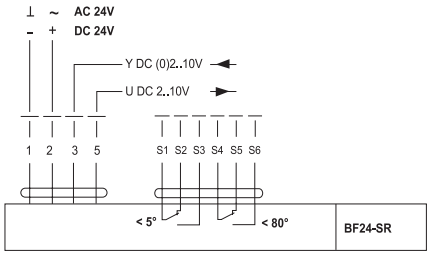


BLF24-SR

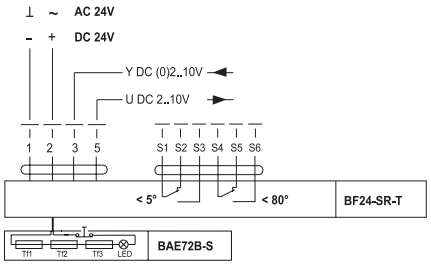




BF24-SR



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	UL555 and UL555S				
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

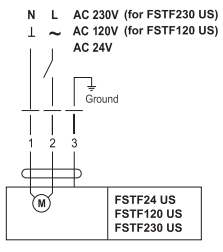
BAT72 Thermoelectrical tripping device 72°C		Optional / Order Separately
BAE165 US Thermoelectrical RE tripping device		

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

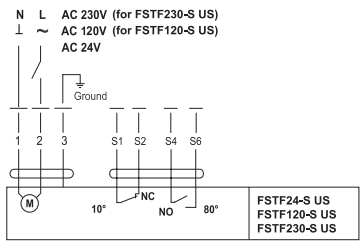
Electrical installation

Open-close

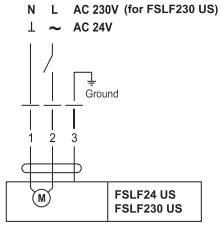
FSTF24 US, FSTF120 US, FSTF230 US



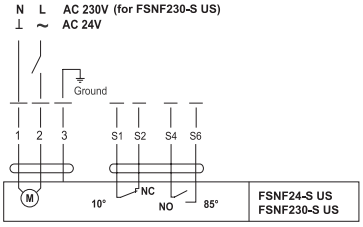
FSTF24-S US, FSTF120-S US, FSTF230-S US



FSLF24 US, FSLF230 US



FSLF24-S US, FSLF230-S US

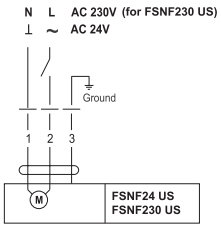


Subject to technical modifications

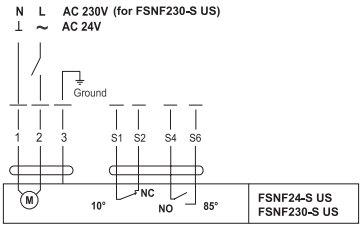
Electrical installation

Open-close

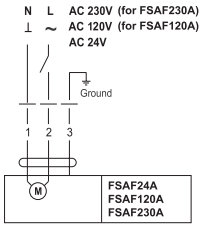
FSNF24 US, FSNF230 US



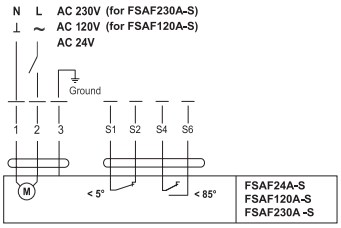
FSNF24-S US, FSNF230-S US



FSAF24A, FSAF120A, FSAF230A

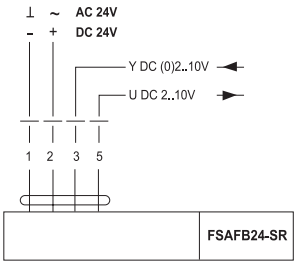


FSAF24A-S, FSAF120A-S, FSAF230A-S

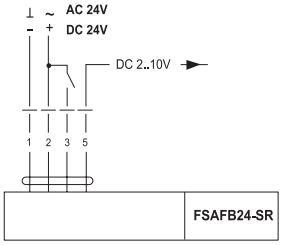


Modulating

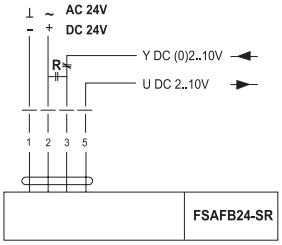
FSAFB24-SR (-S)



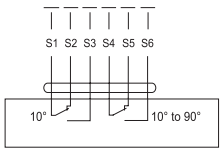
Modulating control



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. 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 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



EN – 08.2020 – Subject to technical modifications

BELIMO Actuators Ltd.
info.asiapacific@belimo.ch

BELIMO®








The complete product range

Small Devices, Big Impact.

Visit us at belimo.com

BELIMO

Small devices, big impact.



CESIM is the Belimo-method to innovate building technology with sensors, valves, and actuators. As a member of the UN Global Compact, Belimo is an active stakeholder contributing to the Sustainable Development Goals (SDG) directly. By incorporating the UN Global Compact principles into strategies, policies, and procedures, Belimo is not only upholding their basic responsibilities to people and the planet, but also setting the stage for long-term success of our industry.

CESIM ensures that the "small" Belimo devices have a big impact on Comfort, Energy Efficiency, Safety, Installation, and Maintenance.

Comfort – Innovations Redefining Comfort
Belimo's devices provide a precision controlled, comfortable room environment that is essential for the wellbeing and productivity of people.

Heating and cooling components in the central plant, air handling units, and secondary air treatment for the room are fitted with sensors, damper actuators, and control valves which are networked with each other for the best sense of well-being in rooms. Our intelligent HVAC components deliver excellent air quality for the highest level of room comfort.

Energy Efficiency – Energy Efficiency Delivered
Buildings are responsible for around 40% of global CO_2 emissions. The smart control of heating, cooling, and ventilation loads has a big impact on the energy efficiency of buildings. Belimo sets the standard for energy efficient solutions such as low power consumption actuators, the Belimo Energy Valve™, and ball valve technology.

With optimised and intelligent building control, we can protect the environment and our resources in a sustainable manner. Reducing energy consumption in buildings through increased energy efficiency will provide a significant contribution to stop the rise in global temperatures.

Safety – Uncompromised Safety
Belimo safety actuators save lives and help to minimise damage to buildings and tangible assets. Reliability that has been specially designed for fire and smoke dampers. Furthermore, a complete range of actuators with a fail-safe function and fast running actuators increases safety by preventing hazardous situations.

Installation – Experience installation Ease
Ease of installation and fast commissioning save time. The unique tool-free enclosures of sensors or devices that allow paperless smartphone commissioning are two examples that have a big impact on reducing installation time. Belimo offers the most comprehensive product ranges, including retrofit applications, with fast delivery to the desired location.

Maintenance – Lasting Performance, Backed by World Class Support
Low maintenance and good customer service have a big impact on building operations. Belimo's devices are famous for their long lifetime and unique 5-year warranty. To achieve optimal building performance, Belimo's innovative solutions can provide real-time monitoring and transparency.

Everything under one roof.

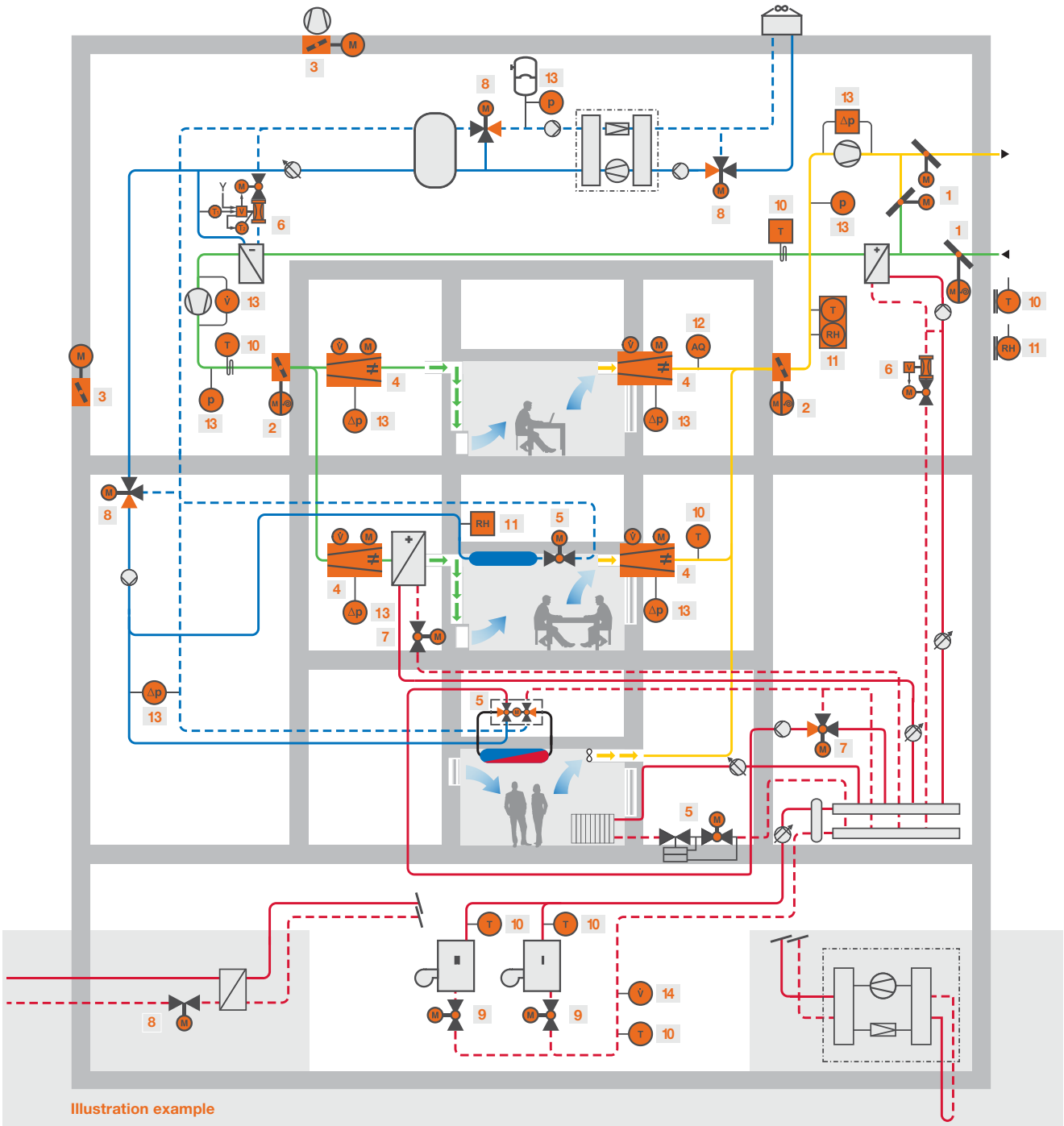


Illustration example

Air

1 Air damper actuators
2 Fire damper actuators
3 Smoke control damper actuators
4 VAV-Compact/VAV-Universal

Water

5 Zone valves
6 Pressure-independent control valves
7 Characterised control valves
8 Globe valves
9 Butterfly valves

Sensors

10 Temperature sensors
11 Humidity sensors
12 Air quality sensors
13 Pressure sensor range
14 Flow sensors

Fan
Air heater
Air cooler
Boiler
Pump
Variable speed pump
Heat exchanger
Chiller / heat pump
Cold water reservoir
Transfer station

Actuator, valve and sensor solutions.



Ventilation Applications

Air treatment, distribution, control and feedback

The world's most comprehensive range of actuator solutions for air dampers of up to 8 m^2 includes rotary and linear actuators with a wide range of motorisation levels and actuating times. The actuators cover almost all motorisation requirements for the control of air flows in air-conditioning plants, from treatment and distribution to feedback and retreatment. The product range also includes special actuators for indoor and outdoor use in extreme conditions. As a perfect complement to the actuators, Belimo offers a comprehensive range of sensors for measuring air temperature and humidity as well as air quality. Differential pressure sensors guarantee an accurate filter monitoring to optimally plan the service calls in advance.



Water applications

Efficient operation of heating and cooling circuits

In addition to motorised butterfly valves and globe valves, Belimo supplies unique, air-bubble tight characterised control valves for the precise control of heating and cooling circuits without energy loss. Pressure-independent characterised control valves always ensure the correct amount of water thanks to permanent dynamic balancing, even if there are differential pressure changes and during partial load operation. The forward-looking, multifunctional Belimo Energy Valve™ with integrated logic allows energy flows to be monitored and optimised. The integrated Delta-T Manager ensures that the differential temperature does not fall below defined values and that the heat exchanger is always run in the energy-efficient range. The new range of Belimo Energy Valve™ and Thermal Energy Meter certified EN 1434/MID integrates energy metering, energy control are IoT-enabled billing in one device. It offers seamless and direct integration to the BMS or IoT-based monitoring platform. Tight-sealing valves of the Belimo ZoneTight™ product range are the ideal solution for energy-saving, unproblematic room and zone control in tight spaces.



Retrofit applications

Giving new verve to old systems

For renovations in existing constructions and replacements for older actuators on air dampers, globe valves and rotary valves, Belimo supplies a comprehensive product range of special Retrofit motorisation solutions. Their parameters can be set precisely on site to the prevailing requirements. Retrofit globe and rotary actuators can be mounted practically on all common valve makes with only a few steps. Handy VAV-Retrofit kits with controllers, actuators and pick-up devices are available for replacing defective or pneumatic VAV devices. To easily determine the right replacement actuators, Belimo has developed a Retrofit tool which determines the suitable actuator using different parameters. The tool can be used everywhere – on site or in the office.

About the Retrofit tool:

For every field of application.



Safety solutions

Protecting life and material assets from fire and smoke

Fires represent the greatest potential threat to people and tangible assets in buildings. Efficient fire protection saves lives in case of emergency, helps minimise property damage and secures the continued operation of companies. The best protection against the spread of fire and smoke through the ductwork is provided by motorised fire dampers to form fire compartments. Smoke control systems with motorised smoke control dampers ensure smoke-free escape and rescue routes.



System protection

Avoiding damage in the event of interruptions to operation

Fail-safe actuators protect valuable systems from damage caused by ice, water and steam. Particularly in the event of a power supply voltage failure, this actuator product range moves the dampers to the predefined fail-safe position. Depending on the actuator, short power failures can be bridged for up to 10 seconds and the fail-safe positions can be individually defined. Unnecessary failures and convenience impairments are thereby avoided.



BELIMO CLOUD

Bus and system integration

Monitoring and controlling systems from a central location

Belimo actuators can be easily integrated into intelligent building management systems. Actuators with an integrated BACnet, Modbus and KNX interface are available for direct connections. MP actuators can be used to combine up to eight different control elements into one MP-Bus section and connect to virtually any supervisory system with greatly reduced wiring costs. Different adjustment and service tools as well as the Belimo Cloud make commissioning, monitoring and optimisation easier.



Room and system solutions

Ensuring individual comfort and saving energy

Used in offices, public buildings, production halls, commercial premises or sensitive operating areas, volumetric flow controllers, actuators and sensors ensure an optimum room climate while consuming minimal levels of energy. They can be used as ZoneEase™, VAV-Compact or VAV-Universal devices. Special, ZoneEase™ and compact VAV control units are available for distribution boxes used in controlled residential ventilation.



Ventilation Applications

Rotary actuators without fail-safe function

Product range	Types / performance classes	Specifications	Applications
	Standard actuators: • LM (5 Nm) • NM (10 Nm) • SM (20 Nm) • GM (40 Nm) • PM (160 Nm)	• With integrated auxiliary switch or potentiometer • Identical accessories for all types • Connection: Cable (IP54) or terminals (IP20 or IP54) • IP66/67 (PM...) • NFC (PM...)	Motorisation of air dampers without fail-safe function
	Compact actuators: • CM (2 Nm) • CM..G (2 Nm, IP66)	• Mechanical angle of rotation limitation 0...287.5° • Rotation without limits • Magnetic gearing disengagement	Motorisation of air dampers without fail-safe function up to 0.4 m^2 in residential ventilation systems, underfloor air handling units, decentralised sill ventilation units, etc.

Linear actuators without fail-safe function

Product range	Types / performance classes	Specifications	Applications
	Standard actuators: • LH (150 N) • SH (450 N)	• Gear rod lengths 60, 100, 200 and 300 mm • Mechanical stroke limitation every 20 mm	Motorisation of final controlling elements with linear movements up to 300 mm for swirl outlets, long-range nozzles, mixing units, cabin units, VAV units, etc.
	Compact actuator: • CH (125 N)	• Gear rod lengths 60 and 100 mm • Mechanical stroke limitation every 20 mm • Direction of stroke can be selected • Gearbox can be rotated by 90°	Motorisation of air dampers without fail-safe function up to 0.8 m^2 in residential ventilation systems, swirl outlets, long range nozzles, mixing units, etc.

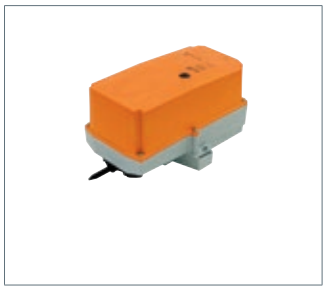
Full-rotation actuators without fail-safe function

Product range	Types / performance classes	Specifications	Applications
	• LU (3 Nm)	• Mechanical angle of rotation limitation up to 330° • Electronic angle of rotation limitation up to 1800° • Rotation without limits	Motorisation of final controlling elements with rotary movement >90° and VAV units, replacement for KMU

Very fast running actuators without fail-safe function

Product range	Types / performance classes	Specifications	Applications
	Rotary actuators: • LMQ (4 Nm) • NMQ (8 Nm) • SMQ (16 Nm) • NMD (8 Nm) • SMD (16 Nm)	• Identical accessories for all types • Very fast running times starting from 2.5 s / 90°	Motorisation of air dampers without fail-safe function up to 3.2 m^2 for industrial suction plants, laboratories, painting and welding plants, etc.
	Linear actuators: • LHQ (100 N) • SHQ (200 N)	• Gear rod length 100 mm • Mechanical stroke limitation every 20 mm • Running times starting from 3.5 s / 100 mm	Motorisation of final controlling elements and slide valves with linear movement up to 100 mm for wood boilers, mixing units, tilt windows, etc.

RobustLine rotary actuators with and without fail-safe function for extreme conditions (IP66/67)

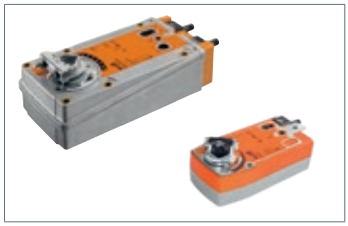
Product range	Types / performance classes	Specifications	Applications
	• NM..P (10 Nm) • SM..P (20 Nm) • NKQ..P (6 Nm, motor running time 4 s)	• IP66/67, UV protection, corrosion-resistant • Integrated auxiliary switch or potentiometer Optional for ambient temperatures down to -40 °C: • Heating with humidistat • Heating with thermostat	Motorisation of air dampers with and without fail-safe function up to 4 m^2 in particularly exposed positions: • Protection against aggressive gases, moisture, humidity, high dust and contamination levels • General outdoor applications, kiln drying plants, agriculture, swimming pool installations, greenhouses, etc.

Rotary actuators with and without fail-safe function for outdoor applications (IP66/67, NEMA 4X)

Product range	Types / performance classes	Specifications	Applications
	• GM..G (40 Nm) • SMQ..G (16 Nm, motor running time 7 s) • NF..G (10 Nm) • SF..G (20 Nm) • GK..G (40 Nm)	• IP66/67, NEMA 4X, UV protection • Integrated auxiliary switch or potentiometer Optional for ambient temperatures down to -40 °C: • Heating with humidistat • Heating with thermostat	Motorisation of air dampers with and without fail-safe function up to 8 m^2: • Protection against moisture, humidity, high dust and contamination levels • General outdoor applications, greenhouses, etc. • Rooftop ventilation plant rooms



Rotary actuators with mechanical fail-safe function (spring package)

Product range	Types / performance classes	Specifications	Applications
	• TF (2 Nm) • LF (4 Nm) • NF (10 Nm)* • SF (20 Nm)* • EF (30 Nm)* * optional with 2 integrated auxiliary switches	• Automatic closing function in <20 s in the event of electricity interruption • Manual override	Motorisation of air dampers with fail-safe function up to 6 m^2

Rotary and linear actuators with fail-safe function

Product range	Types / performance classes	Specifications	Applications
	Rotary actuators with fail-safe function: • NKQ (6 Nm, running time 4 s) • GK (40 Nm, running time 150 s) • PK (160 Nm, running time 35 s) Linear actuators with fail-safe function: • LHK (150 N, 100 mm stroke, running time 120 s) • SHK (450 N, 100 mm stroke, running time 120 s)	• Integrated energy storage; actuator moves into predefined emergency setting position in <35 s (NKQ: 4 s) in the event of electricity interruption POP (Power Off Position) • Bridging of electricity interruptions of up to 10 s • Emergency setting position adjustable between 0…100%	Motorisation of air dampers with fail-safe function
	Compact actuators with fail-safe function: • CM24K (2 Nm) • SKM230A (energy storage module)	• Energy storage module: moves 2 CM actuators into emergency setting position in <15 s in the event of electricity interruption	Motorisation of air dampers up to 0.4 m^2. Particularly suitable in decentralised air handling units, residential ventilation systems and with extremely limited space conditions.



Water applications

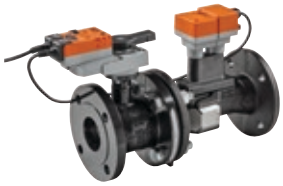
Zone Valve

Product range	Valves	Actuators	Applications
	Internal thread: • RB2.. (2-way zone valve) • RB3.. (3-way zone valve) • Z..S-..	• Standard Rotary Actuators: FRU.. • Fail-Safe Rotary Actuators: Z..S-..	• For cold and hot water system and fan coil application • Water temperature range: RB: 5°C...100°C Z..S-.. : 0°C...93°C

Belimo ZoneTight™

Product range	Valves	Actuators	Applications
  	Internal thread (QCV): • C2..Q-. (2-way, characterised control valve) • C3..Q-. (3-way, change-over ball valve) Internal thread (PIQCV): • C2..QP(T)-.. (2-way, pressure-independent zone valve) Pressure Independent Flow Limiter Valve PIFLV™: • C2..QFL-.. (2-way, pressure-independent zone valve) • R2..FL-.. (2-way, pressure-independent zone valve)	• Rotary actuators: CQ24A (-SR/-MPL), CQ230A • With fail-safe function: CQK24A (-SR) TQF24, TQF230A • Fast runners: CQC230A, CQD230A • Rotary actuators: CQ24A, CQ230A LR series • With fail-safe function: CQK24A TQF24, TQF230, L(R)F series • Fast runners CQC230A, CQD230A LRQ series	Cold and hot water: • Nominal diameter DN 15/20/(25) • PN25 • Fan coils • Cooling ceilings • Zone air heaters/air coolers • Floor heaters • Radiators

Pressure-independent characterised control valves

Product range	Valves	Actuators	Applications
 	Internal thread (Belimo Energy Valve™): • EV..R2+BAC[1] (2-way, DN 15..50) • EV..R2+KBAC[1] (2-way, DN 15..50) • EV..R2+MID[1] (2-way, DN 15..50) • EV..R+BAC (2-way, DN 15..50) • EV..R+KBAC (2-way, DN 15..50) Flange (Belimo Energy Valve™): • EV..F+BAC (2-way, DN 65...150) • EV..F+KBAC (2-way, DN 65...150) Internal thread (EPIV): • EP..R2+BAC[2] (2-way, DN 15..50) • EP..R2+KBAC[2] (2-way, DN 15..50) • EP..R+MP (2-way, DN 15..50) • EP..R+KMP (2-way, DN 15..50) • EP..R+MOD Flange (EPIV): • EP..F+MP (2-way, DN 65…150) • EP..F+KMP (2-way, DN 65…150) • EP..F+MOD (2-way, DN 65…150)	• Actuator with monitoring and recording function integrated • Electronic flow measurement • Permanent hydraulic balancing • Delta-T manager • Power control • With fail-safe function: +KBAC • Connection to Belimo Cloud • With MID certified: +MID • Integrated actuator • Electronic flow measurement • Permanent hydraulic balancing • With fail-safe function: KMP	Balancing, measuring, controlling, shutting and energy monitoring: • Flow V_{max} 0.11...45 l/s • Nominal diameters DN 15...150 • PN25 / DN 15...50 • PN16 / DN 65...150 • Billing: +MID Balancing, measuring, controlling and shutting with a single valve unit: • Flow V_{max} 0.11...45 l/s • Nominal diameters DN 15...150 • PN25 / DN 15...50 • PN16 / DN 65...150

[1] Available on Q3 2021.
[2] Available on Q1 2022.

Characterised control valves

Product range	Valves	Actuators	Applications
	Internal thread: • R2..-S.. (2-way) • R3..-S.. (3-way) Flange: • R6..AO.. (2-way / PN6)	• Rotary actuators: TR, LR, NR, SR series • With fail-safe function: TRF, LRF, NRF, SRF series • Very fast running actuators: LRQ, NRQ, SRQ series	Cold and hot water: • Nominal diameters DN 15...50 • PN40 (DN15..25) PN25 (DN32..50)
	Flange: • R6..AO (2-way)	• Rotary actuators: SR..5, GR..7 series • With fail-safe function: SRF..-5, GRK..-7 series • Fast runners: SR..Q..AX-..-5 (DN65)	Cold and hot water: • Nominal diameters DN 65...150 • PN16

Control, shut-off and change-over valves for outdoor applications

Product range	Valves	Actuators	Applications
	Internal thread: • R2.. (2-way) • R3.. (3-way)	• Rotary actuators: SR..P series IP66/67	Cold and hot water, applications in IP66/67 environment: • Nominal diameters DN 15...50 • PN40 (DN15..25) PN25 (DN32..50)

Shut-off and change-over valves

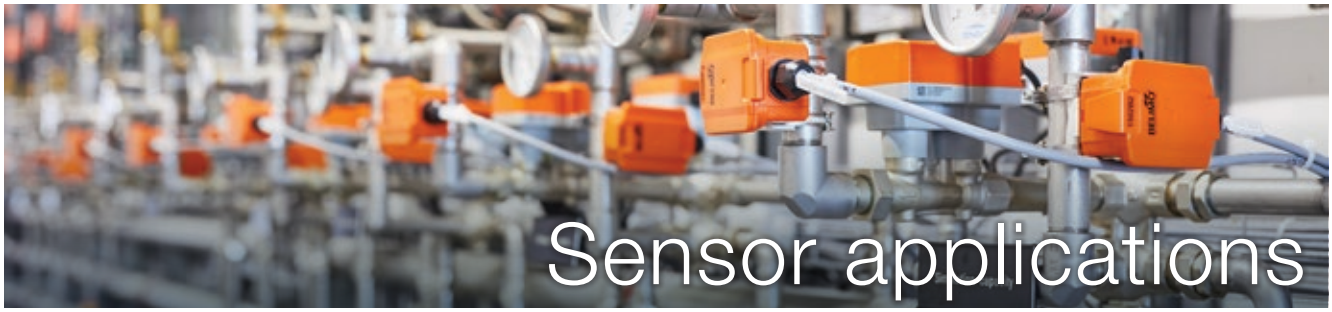
Product range	Valves	Actuators	Applications
	Internal thread: • R2.. (2-way) • R3.. (3-way)	• Rotary actuators: TR, LR, NR, SR series • With fail-safe function: TRF, LRF, NRF, SRF series	Cold and hot water, shut-off and changeover function: • Nominal diameters DN 15...50 • PN40 (DN15..25) PN25 (DN32..50) Shutting cold and hot water: • Nominal diameters DN 15...50

Butterfly Valves

Product range	Valves	Actuators	Applications
	Flange PN6/10/16: • D6..N (2-way) • D6..NL (2-way) • D6..W (2-way) • D6..WL (2-way)	• Rotary actuators: SR-5, SR..P-5, GR-5, DR-5, DR-7, PR, SY series • With fail-safe function: SRF-5, GRK-5, DRK, PRK series	Cold and hot water: • Nominal diameters DN 25...600

Globe valves

Product range	Valves	Actuators	Applications
	Internal thread: • H2..S-.. (2-way) • H3..S-.. (3-way)	• Standard globe valve actuators: NV..A, SV..A (20 mm) EV..A, RV..A (40 mm) • Globe valve actuators with fail-safe function: NVK..A, SVK..A (20 mm) AVK..A (32 mm), EVK..A (40 mm)	Cold and hot water: • Nominal diameters DN 15...50 • PN25
	Flange: • H6..SP-.. (2-way) • H7..D-../ H7..S-.. (3-way)		Cold and hot water: • Nominal diameters DN 65...250 • PN16



Sensor applications

Temperature

Product range	Types	Specifications	Applications
	Outdoor: • 01UT • 22UT	• –35…50 °C • –50…50 °C	• Outdoor temperature sensor • Room temperature sensor with NEMA 4X/IP65 protection
 	Duct/Immersion: • 01DT • 22DT • 01PT	• Sensor dependent • 0…+160 °C • Sensor dependent	• Duct temperature sensor • Immersion temperature sensor; compression fitting or thermowell required
	Duct mean value: • 01MT • 22MT	• –35…70 °C • –20…80 °C	Duct temperature mean value sensor for air conditioning systems or larger ducts with layer formation
	Pipe contact: • 01ST • 01HT • 22HT	• –35…100 °C • –35…90 °C • 0…100 °C	Clamp-on temperature sensors for heating systems and solar collectors, passive and active
	Cable: • 01CT • 22CT	• –35…100 °C • 0…160 °C	Cable temperature sensor, passive and active
 	Frost monitor: • 01ATS • 20DTS	• Output: switch • Capillary tube length 3 m / 6 m • Modulating output: 0...10 V • Output: switch • Capillary tube length 2 m / 6 m	Reliable frost detection for air handling units after the heater battery
	Temperature monitor • 01HT-....A	• 30…90 °C • Probe length: 1 m • Automatic resetting	Monitoring of heat generation systems, underfloor heating or other HVAC applications, various types of installation possible

Air quality

Product range	Types	Specifications	Applications
	Duct: • 22DC • 22DTC • 22DTM • 22DCV • 22DCM • 22DCK	• CO_2: 0…2000 ppm • CO_2: 0…2000 ppm, Temp.: 0…+50 °C • CO_2: 0…2000 ppm, rH: 0…100%, Temp.: 0…50 °C • CO_2: 0…2000 ppm, VOC: 0…100% • CO_2: 0…2000 ppm, VOC: 0…100%, Temp.: 0…50 °C • CO_2: 0…2000 ppm, VOC: 0…100%, Temp.: 0…50 °C	Duct sensor for the measurement of air quality • Option: with integrated temperature and humidity sensor

Thermo energy meter

Product range	Types	Specifications	Applications
	Thermo energy meter: • 22PEM-1U... • 22PE-1U...	• 1.5…15 m^3/h • 1.5…22.7 m^3/h	Energy Measurement

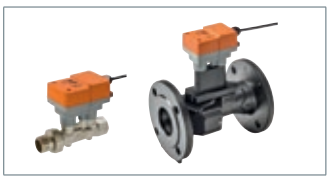
Humidity

Product range	Types	Specifications	Applications
	Outdoor: • 22UTH	• 0...100% RH/–20…80 °C	• Outdoor humidity/temperature sensor • Room humidity/temperature sensor with NEMA 4X/IP65 protection • Option: weather protection
	Duct: • 22DTH	• 0...100% RH/–20…80 °C	Duct humidity/temperature sensor
	Condensation: • 22HH		Condensation sensor • Option: external sensor
	Duct humidistat: • 01DH	• 15…95 % RH • Adjustable switch range	Duct humidistat

Pressure

Product range	Types	Specifications	Applications
	Duct: • 22ADP	• 250 Pa • 2500 Pa • 7000 Pa	Differential pressure sensor air
	Duct: • 01APS	• 20…300 Pa • 50…500 Pa • 200…1000 Pa • 500…2500 Pa • 1000…5000 Pa	Duct differential pressure switch air
	Pipe: • 22WP • 22WDP	• 4, 6, 10, 16 bar • 1, 2.5, 4, 6 bar	Pressure and differential pressure sensor for water and refrigerant

Flow

Product range	Types	Specifications	Applications
	Flow types: • FM...R-SZ (DN 15...50) • FM...F-SZ (DN 65...150) • 22PF...-1U[1] (DN 15...50)	• 0.42...5.76 l/s • 9.60...54.00 l/s	• Flow sensor water • Pipe connection: DN 15...50 with thread DN 65...150 with flange • 22PF-1U... with BACnet/ Modbus

[2] Available on Q1 2022.

Room units

Product range	Types	Specifications	Applications
	Room sensors: • 01RT • 22RT	• Temp. 0…50°C • CO_2 0…2000 ppm • RH 5…100% • Temp. 0…50°C	• Room temperature measurement • Room CO_2, humidity and temperature measurement
	Room operating unit: • P-01RT	• Temp. 0…50°C	Room temperature measurement incl. setpoint adjuster



Retrofit applications

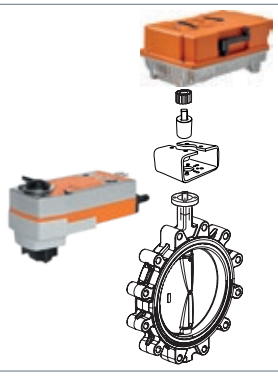
Retrofit general air solutions: actuators without fail-safe function

Product range	Types / performance classes	Specifications	Applications
	• LM24A-MP-TP (5 Nm) • NM24A-MP-TP (10 Nm) • SM24A-MP-TP (20 Nm) • GM24A-MP-TP (40 Nm) • SM24A-R9 (20 Nm, 0...135 Ω) • SM24A-PC (20 Nm, 0...20 V phase-cut signal) • SM24A-MA (20 Nm, 4...20 mA) • LH24A-MP60-TP • LH24A-MP100-TP • LH24A-MP200-TP • LH24A-MP300-TP	• Freely parameterisable and optimally adjustable for matching the application • Identical accessories such as auxiliary switches and potentiometers for all rotary actuators • Identical accessories such as rotary support and coupling pieces for all linear actuators • TP (terminal protected) connection: terminals IP54	Replacement of the motorisation of air dampers and slide valves without fail-safe function up to 8 m^2

Retrofit water solutions: globe valve actuators

Product range	Valves	Actuators	Applications
	For globe valves from various manufacturers	Globe valve actuators with universal valve adapter: • NV..A..-RE (1000 N, 20 mm) • SV..A..-RE (1500 N, 20 mm) • SVL..A..-RE (1500 N, 50 mm) • AVK..A..-RE (2000 N, 32 mm) • EV..A..-RE (2500 N, 50 mm) • RV..A..-RE (4500 N, 50 mm) Short stroke actuators with adapter for Siemens or Cazzaniga short stroke globe valves: • NRDVX.. (500 N, 5.5 mm)	• Motorisation of globe valves with nominal diameters • DN 15...250

Retrofit water solutions: rotary valve actuators

Product range	Valves	Actuators	Applications
	For rotary valves from various manufacturers: • Ball valves • Butterfly valves • Mixing valves A check must be made of the required torque	• Rotary actuators HT.., SR..-R, GR..-R, DR..-R, PR (up to 160 Nm) with adapter (square, flat head, wedge etc.) • With fail-safe function: SRF-R and GRK-R, PRK (up to 160 Nm) with adapter (square, flat head, wedge) • SY rotary actuator with adapter: 400...3500 Nm	Motorisation of mixing valves and valves with: • Interface ISO 5211: F03 / F04 / F05 / F07 or F10 • Up to nominal diameter DN 600: upon request

Retrofit VAV

Product range	Types	Specifications	Applications
	• Set with VAV-Compact • Set with VAV-Universal	Set solution for round VAV units with differential pressure sensor and complete installation set	Replacement of VAV actuator and control components with small and medium conversions



Safety Solutions

Motorisation solutions for fire and smoke protection dampers

Product range	Types	Specifications	Applications
	Actuators [1]: • BFL (4/3 Nm) • BFN (9/7 Nm) • BFG (11/8.5 Nm) • BF (18/12 Nm)	• Steel gearbox with Safety Position Lock™ function • Form fit • 2 auxiliary switches • Halogen-free cables • Low current consumption in stand-by • Thermoelectric tripping device (function-protected) • Fulfils specific requirements from EN 15650	Motorisation of fire and smoke protection dampers
	Actuators [1]: • FSTF (2 Nm) • FSLF (3.5 Nm) • FSNF (8 Nm) • FSAFA (20 Nm) • FSAFB (20 Nm)	• Fulfils specific requirements from UL555 and UL555S • Thermoelectric tripping device (Optional) • Overload Protection • Low power consumption life safety actuator • ISO 9001 Certified Quality Control • 2 SPST switches	Motorisation of fire and smoke protection dampers

Motorisation solutions for smoke control dampers

Product range	Types	Specifications	Applications
	Actuators [1]: • BEN (15 Nm) • BEE (25Nm) • BE (40 Nm)	• Steel gearbox, form fit • 2 auxiliary switches • Halogen-free cables • Low current consumption in stand-by • 1-wire and 2-wire control • High holding torque • Fulfils specific requirements from EN 12101-8, EN 1366-10, EN 13501-4 • Safety Position Lock™	Motorisation of smoke control dampers in mechanical smoke extraction systems

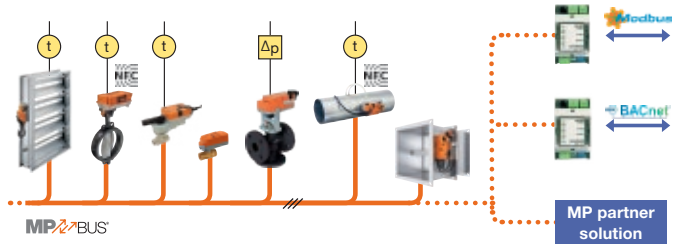
[1] The fire damper actuators and smoke control actuators are supplied exclusively to damper manufacturers.



Bus and system integration

Belimo MP-Bus

Product range

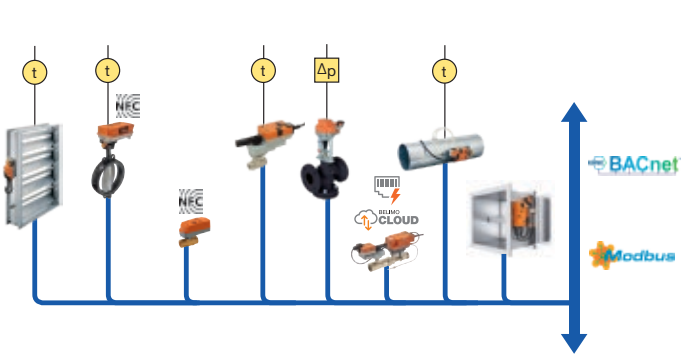


Applications

- Master-slave system, specially developed by Belimo for HVAC actuators and sensors
- Up to 8 different control elements can be combined and together connected to a supervisory field bus system (BACnet, Modbus etc.)
- One sensor can be connected per actuator
- Either the Belimo gateways (UK24BAC, UK24MOD) or gateways and DDC controllers from other manufacturers can be used as the MP master

BACnet and Modbus

Product range



Applications

BACnet/Modbus actuators

- Actuators with an RS485 interface can be connected directly to BACnet MS/TP or Modbus RTU
- Actuators with Ethernet interface can be connected directly to BACnet IP or Modbus TCP. At the same time a connection with the Belimo Cloud is possible
- The analogue control can be monitored and overridden via Bus in hybrid operation
- Sensor can be connected to the actuator
- EV...R2+... support Power over Ethernet (PoE)

IoT, Belimo Cloud

Product range



Applications

- Actuators with Ethernet interface can optionally exchange operating and setting data with Belimo Cloud
- The monitoring and optimisation of the devices is made through a central access point
- Open Client-API for the connection to specific Cloud solutions

Setting and service tools for parametrisable and communicative actuators and volumetric flow controllers

Type	Type	Type	Specifications
PC-Tool MFT-P 	Service tool ZTH EU / ZTH AP 	Smartphone App 	• The right tool for every job • PC-Tool for convenient parametrisation, commissioning and maintenance of actuators and bus networks • Efficient setting of parameters with service tool ZTH EU / ZTH AP • Parametrisation of actuators with smartphone app, even when deenergised



Room and system solutions

Room controller system solutions - VAV set

Product range	Types / performance classes	Specifications	Applications
	VAV Controller: • LMV-BAC Room Unit/ Sensor: • ZE-SET	• NFC interface • Support Belimo Cloud • BACnet MS/TP • With AI for CO2 sensor • Standardized Control Application	Design for CAV or VAV room control application
	VAV Controller: • T24 controller Room Unit/ Sensor: • T24-MP • TG-R10000 (Optional)	• LCD display: blue backlight and built-in diagnostic socket RJ12 • Built-in NTC type sensor • BACnet® / VAV Set	Designed for VAV room control application, connect with open IP address directly.

VAV-Compact controllers

Product range	Types / performance classes	Specifications	Applications
	Rotary actuators: • LMV (5 Nm) • NMV (10 Nm) • SMV (20 Nm) Linear actuator: • LHV (150 N)	• Compact unit with sensor, controller and actuator • On-site operation with ZTH EU / ZTH AP or smartphone • Commissioning by means of PC-Tool, including trend function • Integration in MP-Bus®, BACnet, Modbus networks	Control of VAV and CAV units for volumetric flow systems in buildings

VAV-Universal solutions

Product range	Types / performance classes	Specifications	Applications
	VAV-Universal controller: • VRU-D3-BAC with flow sensor 0…500 Pa • VRU-M1-BAC with diaphragm sensor 0…600 Pa • VRU-M1R-BAC with diaphragm sensor –75…75 Pa	• Controller with integrated sensor • Plug connection between the controller and actuator • Conventional control 0…10 V / 2…10 V • Integration in MP-Bus, BACnet or Modbus networks	• Volumetric flow VAV/CAV • Volumetric flow summation • Duct and room pressure
	Actuators: • LM/NM/SM24A-VST (5...20 Nm) • LMQ/NMQ24A-VST (very fast running actuator 4/8 Nm) • LF/NF/SF24A-VST (fail-safe 4/10/20 Nm) • NKQ24A-VST (fail-safe 6 Nm)	• Plug connection • Running times starting from 2.5 s	Use with VAV-Universal controller

Room controller system solutions

Product range	Types / performance classes	Specifications	Applications
	Room Unit: • EXT-T24-D201 • CR24-B1/B2/B3/B2E • T24A1T Room Sensor: • TG-K340B • TG-A130B	• Modulating / on-off control • LCD display	Single duct temperature control

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 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



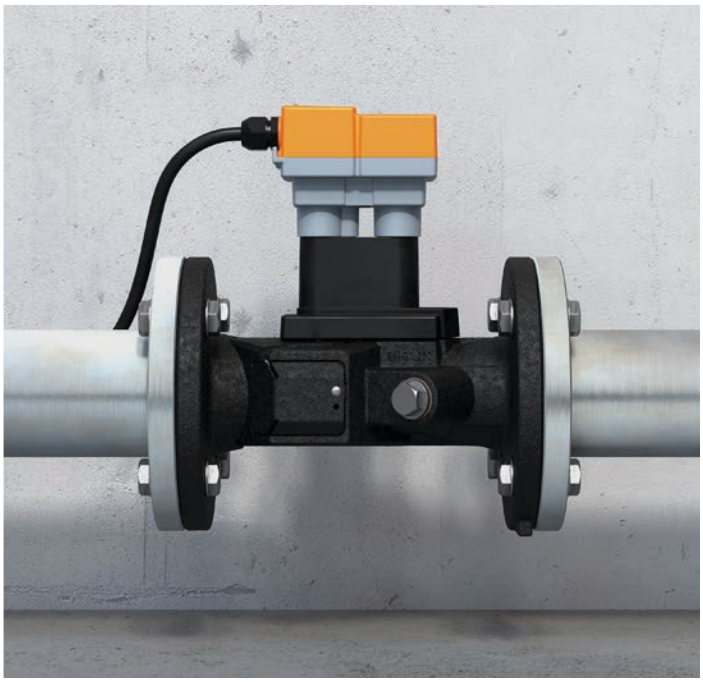
EN – 06.2021 – Subject to technical modifications

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BELIMO®







Sensors

Small Devices. Big Impact.

Visit us at
belimo.com

BELIMO



Sensors by Belimo

As the world's market leader in the development and production of actuators and control valves for HVAC systems, Belimo has started a new chapter in its company history: The addition of an innovative range of sensors to its product portfolio.

Seamlessly integrated

Our sensors offer the highest in quality and reliability, are simple to install and are seamlessly compatible with all conventional building automation systems. The product range covers the measured variables temperature, humidity, pressure, CO_2 and VOC in pipe and room applications. First-class service and support are included as a matter of course.



Sensors

The perfect complement to actuators and valves

Application	Sensor types	
Duct / Air	Pressure sensor range	4
	Duct sensors and duct humidistat	5
	Frost monitor	6
Outdoor / Air	Outdoor sensors humidity / temperature	7
Room / Air	Room sensors / room operating units	8
Duct / Air Pipe / Water	Duct and immersion sensors for temperature	11
	Cable sensors for temperature	12
Pipe / Water	Clamp-on sensors for temperature / condensation	13
	Safety temperature limiter STB Temperature monitor TW	14
	Pressure and flow sensors	15
Accessories	Thermowells and compression fittings, thermowell kits	16
	Mounting flanges, adapters and pipe connector kits	17
	Installation accessories	18
	Accessories for differential pressure sensors, accessories for humidity sensors	19
	Tightening straps and thermal contact fluid, connection adapter	20

Pressure sensor range

Output signals active, switch 1 x SPDT, Modbus RTU

For measurement and monitoring of overpressure, underpressure or differential pressure of air. ADP.. types suitable for fan pressure and volumetric flow control and for pressure control between individual rooms. APS.. type suitable for monitoring fans, air filters and ventilation, fire protection and smoke control dampers.	
Power supply (Active sensors only)	DC 15...24 V / AC 24 V
Degree of protection	IP65 / NEMA 4X (APS..types: IP54)
Housing	Plastic material, with snap-on cover
Communication	Modbus RTU
Auto-zero	Automatic pressure zero point calibration



22ADP-..



01APS-..



22ADP-..B
22ADP-..L



22ADP-124..

Measuring values						Measuring ranges																								
Output signals						Pressure																								
		Multirange	Auto-zero	Display (LCD)	2 Measurement systems 2 Analogue outputs 4 Air connections	-25...25 Pa	-50...50 Pa	-100...100 Pa	-150...150 Pa	0...25 Pa	0...50 Pa	0...100 Pa	0...250 Pa	0...500 Pa	0...1000 Pa	0...1500 Pa	0...2000 Pa	0...2500 Pa	0...3000 Pa	0...4000 Pa	0...5000 Pa	0...7000 Pa	Volumetric flow 0...750,000 m³/h	SPDT switch	Type of sensor
Differential pressure																														
Active	DC 0...5 V / DC 0...10 V, 4...20 mA	•				•	•	•	•	•	•	•	○													22ADP-18Q
		•		•		•	•	•	•	•	•	•	○													22ADP-18QL
		•	•			•	•	•	•	•	•	•	○													22ADP-18QA
		•	•	•		•	•	•	•	•	•	•	○													22ADP-18QB
		•						•				•	•	•	•	•	•	○								22ADP-184
		•		•				•				•	•	•	•	•	•	○								22ADP-184L
		•	•					•				•	•	•	•	•	•	○								22ADP-184A
		•	•	•				•				•	•	•	•	•	•	○								22ADP-184B
		•													•	•	•	•	•	•	•	○				22ADP-186
		•		•											•	•	•	•	•	•	•	○				22ADP-186L
		•	•												•	•	•	•	•	•	•	○				22ADP-186A
		•	•	•											•	•	•	•	•	•	•	○				22ADP-186B
	Modbus RTU, DC 0...5 V / DC 0...10 V	•				•	•	•	•	•	•	•	○										•			22ADP-15Q
		•		•		•	•	•	•	•	•	•	○										•			22ADP-15QL
		•	•			•	•	•	•	•	•	•	○										•			22ADP-15QA
		•	•	•		•	•	•	•	•	•	•	○										•			22ADP-15QB
		•						•				•	•	•	•	•	•	○					•			22ADP-154
		•		•				•				•	•	•	•	•	•	○					•			22ADP-154L
		•													•	•	•	•	•	•	•	○	•			22ADP-156
		•		•											•	•	•	•	•	•	•	○	•			22ADP-156L
	DC 0...5 V / DC 0...10 V	•			•			•				•	•	•	•	•	•	○								22ADP-124D
		•		•	•			•				•	•	•	•	•	•	○								22ADP-124F
Switch										20...300 Pa														1	01APS-10R
																								1	01APS-10R.1 [1]
											50...500 Pa													1	01APS-10U
																								1	01APS-10U.1 [1]
													200...1000 Pa											1	01APS-101
																								1	01APS-101.1 [1]
														500...2500 Pa										1	01APS-104
																								1	01APS-104.1 [1]

○ Factory setting (setting ranges are parametrisable on the sensor)
[1] Multipack 45 pcs. (installation accessory A-22AP-A05.1 must be ordered separately)

Measurement and setting ranges 22ADP types

Measuring ranges [Pa]	Setting ranges [Pa]							
	S0	S1	S2	S3	S4	S5	S6	S7
0...250	0...250	0...100	0...50	0...25	-25...25	-50...50	-100...100	-150...150
0...2500	0...2500	0...2000	0...1500	0...1000	0...500	0...250	0...100	-100...100
0...7000	0...7000	0...5000	0...4000	0...3000	0...2500	0...2000	0...1500	0...1000

Duct sensors and duct humidistat

Output signals active, passive, switch 1 x SPDT
Modbus RTU, BACnet MS/TP

For temperature measurement (average value), humidity and air quality in ducts and air handling units. The multi sensors have outputs for CO_2, humidity, temperature and VOC.	
Power supply (Active sensors only)	DC 15...24 V / AC 24 V
Degree of protection	IP65 / NEMA 4X IP55 (duct humidistat 01DH-..)
Housing	Plastic material, with snap-on cover
Communication	BACnet and Modbus protocols



22MT-..
01MT-..



22DT(C/M)..
22DC(K/M/V)..



22DTH-..



01DH-..

Measured values / Output signals		Multirange	Manual reset	Display (LCD)	Probe length	Range 15...95% r.H.	Measuring ranges: Temperature -50...50°C	-40...60°C	-35...70°C	-35...90°C	-20...80°C	-15...35°C	-10...120°C	0...50°C	0...100°C	0...160°C	0...250°C	Humidity: Relative: 0...100% r.H.	Absolute: 0...50 g/m³	Absolute: 0...80 g/m³	Dew point: 0...50°C	Dew point: -20...80°C	Enthalpy: 0...85 kJ/kg	CO_2: 0...2000 ppm	0...5000 ppm	VOC: 0...100%	SPDT switch	Type of sensor
Temperature (average value)																											
Passive	Pt1000				3000 mm				•																		01MT-1B4
	Pt1000				6000 mm				•																		01MT-1B5
Active	DC 0...5 V/0...10 V	•			6000 mm		•				○	•	•	•	•	•	•										22MT-125
	4...20 mA	•			3000 mm		•				○	•	•	•	•	•	•										22MT-144
		•			6000 mm		•				○	•	•	•	•	•	•										22MT-145
Humidity / Temperature																											
Active	DC 0...5 V/0...10 V	•			140 mm			•			○	•		•				○	•	•	•	•	•					22DTH-11M
	4...20 mA	•			140 mm			•			○	•		•				○	•	•	•	•	•					22DTH-13M
	Modbus RTU				140 mm					•								•		•		•	•					22DTH-15M
	BACnet MS/TP				140 mm					•								•		•		•	•					22DTH-16M
Humidity (duct humidistat)																											
Switch					150 mm	•																				1	01DH-10N
CO_2																											
Active	DC 0...10V				180 mm																			•				22DC-11
	4...20 mA				180 mm																			•				22DC-13
CO_2 / Temperature																											
Active	DC 0...5 V/0...10 V				180 mm									•										•				22DTC-11
					180 mm									•											•			22DTC-1105
	4...20 mA				180 mm									•										•				22DTC-13
CO_2 / Humidity / Temperature																											
Active	DC 0...5 V/0...10 V				180 mm									•				•						•				22DTM-11
				•	180 mm									•				•						•				22DTM-1106
	Modbus RTU				180 mm									•				•		•		•	•	•				22DTM-15
	BACnet MS/TP				180 mm									•				•		•		•	•	•				22DTM-16
CO_2 / VOC																											
Active	DC 0...5 V/0...10 V				180 mm																			•		•		22DCV-11
CO_2 / VOC / Temperature																											
Active	DC 0...5 V/0...10 V				180 mm									•										•		•		22DCM-11
CO_2 / VOC / Mix CO_2 + VOC / Temperature																											
Active	DC 0...5 V/0...10 V				180 mm									•										•		•		22DCK-11

○ Factory setting (setting ranges are parametrisable on the sensor)

Frost monitor

Output signals active, switch 1 x SPDT

For measuring the temperature of air, water and heat exchangers, in which incoming cold air can cause frost.
The frost monitors report a risk of frost.

Reset	Manual or automatic
Capillary pipe	Various lengths
Start function	With the types 20DTS-..
Switch contact	1 x SPDT
Power supply	AC 24 V (types 20DTS-...)
Signal voltage	DC 0...10 V (types 20DTS-...)



01ATS-..



20DTS-..



A-22D-A12
(Optional accessory for 20DTS-..)

Measured values		Automatic reset	Manual reset	LED display, red	Capillary pipe length	Range -10...15°C	Range 1...10°C	Modulating valve control DC 0...10 V	SPDT switch	Type of sensor
Output signals										
Temperature (Frost protection)										
Switch		•			3m	•			1	01ATS-1040B
		•			6m	•			1	01ATS-1050B
			•		3m	•			1	01ATS-104XC
			•		6m	•			1	01ATS-105XC
Active	DC 0...10V	•	•	•	2m		•	•	1	20DTS-1P3
		•	•	•	6m		•	•	1	20DTS-1P5

Outdoor sensors
Humidity / Temperature

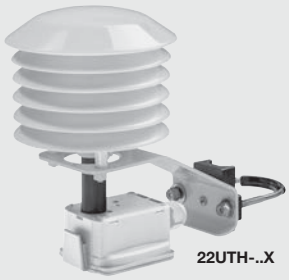
Output signals active, passive, Modbus RTU, BACnet MS/TP



22UT-..
01UT-..0X



22UTH-..



22UTH-..X



01UT-..

For measuring temperature or relative humidity and outdoor temperature and in sophisticated indoor applications that require high IP protection, e.g. in warehouses, refrigerated warehouses, greenhouses and production halls.	
Power supply (Active sensors only)	DC 15...24 V / AC 24 V
Degree of protection	IP65 / NEMA 4X
Housing	Plastic material, with snap-on cover
Communication	Modbus RTU, BACnet MS/TP

Measured values				Measuring ranges																
Output signals				Temperature										Humidity						
		External sensor probe (Short response time)	Multirange	-50...50°C	-40...60°C	-35...50°C	-35...90°C	-20...80°C	-15...35°C	-10...120°C	0...50°C	0...100°C	0...160°C	0...250°C	Relative: 0...100% r.H.	Absolute: 0...50 g/m³	Absolute: 0...80 g/m³	Dew point: 0...50°C	Dew point: -20...80°C	Enthalpy: 0...85 kJ/kg	Type of sensor
Temperature																				
Passive	Pt100					•														01UT-1A
	Pt100 ext.	•				•														01UT-1A0X
	Pt1000					•														01UT-1B
	Pt1000 ext.	•				•														01UT-1B0X
	Ni1000					•														01UT-1C
	Ni1000TK5000					•														01UT-1D
	NTC1k8					•														01UT-1F
	NTC10k (10k2)					•														01UT-1L
	NTC10k Carel					•														01UT-1N
	NTC20k					•														01UT-1Q
Active	DC 0...5 V / 0...10 V	•	•	○				•	•	•	•	•	•	•						22UT-12
	4...20 mA	•	•	○				•	•	•	•	•	•	•						22UT-14
Humidity / Temperature																				
Active	DC 0...5 V / 0...10 V		•		•			○	•		•				○	•	•	•	•	•	22UTH-11
	4...20 mA		•		•			○	•		•				○	•	•	•	•	•	22UTH-13
	DC 0...5 V / 0...10 V		•		•			○	•		•				○	•	•	•	•	•	22UTH-110X
	4...20 mA		•		•			○	•		•				○	•	•	•	•	•	22UTH-130X
	Modbus RTU						○								•		•		•	•	22UTH-150X
	BACnet MS/TP						○								•		•		•	•	22UTH-160X

○ Factory setting (setting ranges are parametrisable on the sensor)

Room sensors / room operating units

Output signals active, passive, MP-Bus®

For measuring room temperature, humidity and air quality and for specifying a room temperature setpoint. The room units can be seamlessly connected to existing controllers from third-party manufacturers. The Belimo Assistant App also guarantees simple commissioning of the active sensors and diagnostics via smartphone.

Parametrisation	Deenergised via NFC[1]
Diagnostics function	Simple via NFC[1]
Output signals	0...5 V, 0...10 V, 2...10 V or MP-Bus available[1]
Digital input	With additional power supply[1]
Ambient conditions	0...50°C, 5...95% r.H.

[1] For active devices 22RT-..



01RT-..
22RT-..



P-01RT..

Measured values					Measuring ranges				
Output signals					Temperature	Humidity	CO_2		
		Setpoint signal adjustable (Resistance Ω)	Output signals Freely selectable via NFC	Digital input (Signal transmission to MP-Bus)	°C	% r.H.	ppm	Dimension (mm)	Type of sensor
Room sensors									
Passive	Pt1000				•			86 X 86	01RT-1B-0
	Ni1000				•				01RT-1C-0
	NTC1k8				•				01RT-1F-0
	NTC10k (10k2)				•				01RT-1L-0
	NTC10k Precon (10k)				•				01RT-1M-0
	NTC20k				•				01RT-1Q-0
	Pt1000				•			116 X 86	01RT-5B-0
	NTC10k (10k2)				•				01RT-5L-0
	NTC10k (10k3)				•				01RT-5M-0
	NTC20k				•				01RT-5Q-0
Active + NFC	DC 0...5V DC 0...10V DC 2...10V MP-Bus®		•	•	•			86 X 86	22RT-19-1
			•	•	•	•			22RTH-19-1
			•	•	•	•	•		22RTM-19-1
			•	•	•			116 X 86	22RT-59-1
			•	•	•	•			22RTH-59-1
			•	•	•	•	•		22RTM-59-1
Room operating units									
Passive	Pt1000	0.7...1.3 kΩ			•			86 X 86	P-01RT-1B-0
	NTC1k8	0.7...1.3 kΩ			•				P-01RT-1F-0
	NTC10k (10k2)	2.5...8.5 kΩ			•				P-01RT-1L-0
	NTC10k3 (Precon)	2.5...8.5 kΩ			•				P-01RT-1M-0
	Pt1000	1 kΩ			•			116 X 86	P-01RT-5B-0
	NTC10k (10k2)	10 kΩ			•				P-01RT-5L-0
	NTC10k (10k3)	10 kΩ			•				P-01RT-5M-0
	NTC20k	10 kΩ			•				P-01RT-5Q-0

Duct and immersion sensors
Temperature

Output signal passive

For air temperature measurement in HVAC systems.
01PT-..: For pipe installations with short response time, requires no additional immersion pocket.
01DT-.., 22DT-..: A thermowell made of brass or stainless steel is recommended as an optional accessory for use as an immersion sensor in pipe installations (fluid lines) (see Accessories).

Degree of protection	IP65 / NEMA 4X
Housing	Plastic material, with snap-on cover



01DT-..

A-22P-..
(Optional accessory for 01DT-.., 22DT-..)



01PT-..

Measuring values			Measuring ranges		
Output signals			Temperature		
		Probe length	-50...150°C	-50...160°C	Type of sensor
Temperature (pipe)					
Passive	Pt1000	50 mm		•	01PT-1BH
	Ni1000TK5000			•	01PT-1DH
	NTC10k (10k2)		•		01PT-1LH
	Pt1000	100 mm		•	01PT-1BL
	Ni1000TK5000			•	01PT-1DL
	NTC10k (10k2)		•		01PT-1LL
	Pt1000	200 mm		•	01PT-1BP
	Ni1000TK5000			•	01PT-1DP
	NTC10k (10k2)		•		01PT-1LP
Temperature (duct, pipe)					
Passive	Pt100	50 mm		•	01DT-1AH
	Pt1000			•	01DT-1BH
	Ni1000			•	01DT-1CH
	Ni1000TK5000			•	01DT-1DH
	NTC10k (10k2)		•		01DT-1LH
	NTC20k		•		01DT-1QH
	Pt100	100 mm		•	01DT-1AL
	Pt1000			•	01DT-1BL
	Ni1000			•	01DT-1CL
	Ni1000TK5000			•	01DT-1DL
	NTC1k8		•		01DT-1FL
	NTC10k (10k2)		•		01DT-1LL
	NTC20k		•		01DT-1QL
	Pt100	150 mm		•	01DT-1AN
	Pt1000			•	01DT-1BN
	Ni1000			•	01DT-1CN
	Ni1000TK5000			•	01DT-1DN
	NTC1k8		•		01DT-1FN
	NTC10k (10k2)		•		01DT-1LN
	NTC10k Carel		•		01DT-1NN
	NTC20k		•		01DT-1QN

Duct and immersion sensors
Temperature
Output signals, passive and active

For air temperature measurement in HVAC systems.
01DT-.., 22DT-..: An immersion pocket made of brass or stainless steel is recommended as an optional accessory for use as an immersion sensor in pipe installations (fluid lines) (see Accessories).

Degree of protection	IP65 / NEMA 4X
Housing	Plastic material, with snap-on cover



01DT-..
22DT-..



A-22P-..
(Optional accessory for 01DT-.., 22DT-..)

Measuring values				Measuring ranges										
Output signals				Temperature										
		Multirange	Probe length	-50...50°C	-50...150°C	-50...160°C	-20...80°C:	-15...35°C	-10...120°C	0...50°C	0...100°C	0...160°C	0...250°C	Type of sensor
Temperature														
Passive	Pt100		200 mm			•								01DT-1AP
	Pt1000					•								01DT-1BP
	Ni1000					•								01DT-1CP
	Ni1000TK5000					•								01DT-1DP
	NTC1k8													01DT-1FP
	NTC5k				•									01DT-1HP
	NTC10k (10k2)				•									01DT-1LP
	NTC20k				•									01DT-1QP
	Pt100		300 mm			•								01DT-1AR
	Pt1000					•								01DT-1BR
	Ni1000					•								01DT-1CR
	Ni1000TK5000					•								01DT-1DR
	NTC1k8				•									01DT-1FR
	NTC10k (10k2)				•									01DT-1LR
	NTC20k				•									01DT-1QR
	Pt100		450 mm			•								01DT-1AT
	Pt1000					•								01DT-1BT
	Ni1000					•								01DT-1CT
	Ni1000TK5000					•								01DT-1DT
	NTC1k8				•									01DT-1FT
	NTC10k (10k2)				•									01DT-1LT
	NTC20k				•									01DT-1QT
Active	DC 0...5 V / 0...10 V	•	50 mm	•			•	•	•	•	•	○	•	22DT-12H
	4...20 mA	•		•			•	•	•	•	•	○	•	22DT-14H
	DC 0...5 V / 0...10 V	•	100 mm	•			•	•	•	•	•	○	•	22DT-12L
	4...20 mA	•		•			•	•	•	•	•	○	•	22DT-14L
	DC 0...5 V / 0...10 V	•	150 mm	•			•	•	•	•	•	○	•	22DT-12N
	4...20 mA	•		•			•	•	•	•	•	○	•	22DT-14N
	DC 0...5 V / 0...10 V	•	200 mm	•			•	•	•	•	•	○	•	22DT-12P
	4...20 mA	•		•			•	•	•	•	•	○	•	22DT-14P
	DC 0...5 V / 0...10 V	•	300 mm	•			•	•	•	•	•	○	•	22DT-12R
	4...20 mA	•		•			•	•	•	•	•	○	•	22DT-14R
	DC 0...5 V / 0...10 V	•	450 mm	•			•	•	•	•	•	○	•	22DT-12T
	4...20 mA	•		•			•	•	•	•	•	○	•	22DT-14T

○ Factory setting (setting ranges are parametrisable on the sensor)

Cable sensors for temperature

Output signals active or passive

For flexible temperature measurement in gaseous and liquid fluids in HVAC systems. With stainless steel probe. An immersion pocket made of brass or stainless steel is recommended as an optional accessory for pipe installations (fluid lines) (see Accessories).

Power supply (Active sensors only)	DC 15...24 V / AC 24 V
Degree of protection	IP65 / NEMA 4X
Housing	Plastic material, with snap-on cover



22CT-..



01CT-..



A-22P-..
(optional accessory)

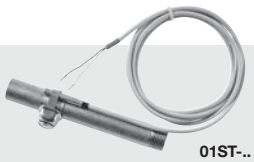
Measuring values						Measuring ranges								
Output signals						Temperature								
		Multirange	Cable (2000 mm)	Probe length	Mounting flange included	-50...50°C	-35...100°C	-20...80°C	-15...35°C	-10...120°C	0...50°C	0...100°C	0...160°C	0...250°C	Type of sensor
Temperature															
Passive	Pt100		•	50 mm			•								01CT-1AH
	Pt1000		•				•								01CT-1BH
	Ni1000		•				•								01CT-1CH
	Ni1000TK5000		•				•								01CT-1DH
	NTC1k8		•				•								01CT-1FH
	NTC10k (10k2)		•				•								01CT-1LH
	NTC20k		•				•								01CT-1QH
	Pt100		•	100 mm	•		•								01CT-1ALF
	Pt1000		•		•		•								01CT-1BLF
	Ni1000		•		•		•								01CT-1CLF
	Ni1000TK5000		•		•		•								01CT-1DLF
	NTC10k (10k2)		•		•		•								01CT-1LLF
	NTC20k		•		•		•								01CT-1QLF
	Pt100		•	200 mm	•		•								01CT-1APF
	Pt1000		•		•		•								01CT-1BPF
	Ni1000		•		•		•								01CT-1CPF
	Ni1000TK5000		•		•		•								01CT-1DPF
	NTC10k (10k2)		•		•		•								01CT-1LPF
	NTC20k		•		•		•								01CT-1QPF
Active	DC 0...5 V / 0...10 V	•	•	50 mm		•		•	•	•	•	•	○	•	22CT-12H
	4...20 mA	•	•	50 mm		•		•	•	•	•	•	○	•	22CT-14H

○ Factory setting (setting ranges are parametrisable on the sensor)

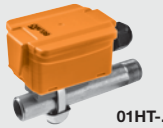
Clamp-on sensors
Temperature / condensation

Output signals active, passive or switch 1 x SPDT

For temperature measurement on pipes and curved surfaces (ST..-, HT.. types) or for detection of condensation on chilled surfaces (22HH.. types).	
Power supply (Active sensors only)	DC 15...24 V / AC 24 V
Degree of protection	IP65 / NEMA 4X
Housing	Plastic material, with snap-on cover


01ST-..


22HH-..


01HT-..
22HT-..


22HH-..X


22HH-100S-..

Measured values									Measuring ranges													
Output signals									Temperature													
		Multirange	Sensor cable 2 m	Sensor cable 7 m	Sensor cable 12 m	External sensor 75 mm	External sensor 45 mm	LED signalisation	-50...50°C	-35...90°C	-35...100°C	-20...80°C	-15...35°C	-10...120°C	0...50°C	0...100°C	0...160°C	0...250°C	Condensation	SPDT switch		Type of sensor
Temperature																						
Passive	Pt100		•								•											01ST-1A3
	Pt1000		•								•											01ST-1B3
	Ni1000		•								•											01ST-1C3
	Ni1000TK5000		•								•											01ST-1D3
	NTC1k8		•								•											01ST-1F3
	NTC10k (10k2)		•								•											01ST-1L3
	NTC20k		•								•											01ST-1Q3
	Pt100									•												01HT-1A
	Pt1000									•												01HT-1B
	Ni1000									•												01HT-1C
	Ni1000TK5000									•												01HT-1D
	NTC1k8									•												01HT-1F
	NTC10k (10k2)									•												01HT-1L
	NTC20k									•												01HT-1Q
Active	DC 0...5 V / DC 0...10 V	•							•			•	•	•	•	○	•	•				22HT-12
	4...20 mA	•							•			•	•	•	•	○	•	•				22HT-14
Condensation																						
Switch								•											•	1		22HH-10
			•			•		•											•	1		22HH-100X
				•			•	•											•	1		22HH-100S-6
					•		•	•											•	1		22HH-100S-7

○ Factory setting (setting ranges are parametrisable on the sensor)

Safety temperature limiter STB
Temperature monitor TW

Output signal switch 1 x SPDT

For monitoring the temperature in heat generation systems, underfloor heating or in other applications of HVAC technology.	
Switch contact	1 x SPDT, AC230 V, 16 A
Switching value	Control window in the housing cover
Mounting	Pipeline, thermowell or wall mounting
Pipe mounting	Tightening strap, included
Mounting	Spring loaded terminal blocks
Reset	- Manual for safety temperature limiter STB - Automatic for temperature monitor TW
Capillary break protection	For safety temperature limiter STB

TW



01HT-1..A



A-22P-A6..
(Optional accessory thermowell kits)

STB



EXT-J...

Measured values																	
Output signals											Application				Setpoint range				
		Safety temperature limiter STB	Temperature monitor TW	Automatic reset	Manual reset	Capillary pipe length	Capillary break protection	Hot water, warm water	Hot water	Hot water steam	Fire protection thermostat in the duct	30...90°C	50...80°C	70...130°C	SPDT switch	Type of sensor
Temperature																
Switch		•			•	1m	•		•		•		•		1	EXT-J-00734645
		•			•	1m	•			•	•			•	1	EXT-J-00734647
			•	•		1m		•				•			1	01HT-101CA

Pressure and flow sensors

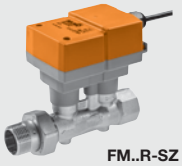
Output signal active

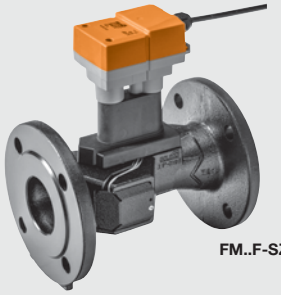
For pressure, differential pressure and flow measurement in fluids of HVAC systems. WP.. types suitable for pressure measurement in water and refrigerants. WDP types suitable for differential pressure measurement in water. FM.. types for volumetric flow measurement in water and water/glycol mixtures. Temperature and glycol compensated. Very compact design.

Power supply	DC 15...24 V / AC 24 V (types with voltage outlet) DC 15...24 V (types with power output) AC/DC 24 V (FM.. types)
Degree of protection	22WP/WDP..: IP65 / NEMA 4 FM..: IP54 / NEMA 1
Housing	22WP/WDP..: metal FM..: plastic material
Cable entry	22WP-..: MVS connector plug, in accordance with DIN EN175301-803 / Type A 22WDP-..: angular connectors in accordance with DIN 43650, construction A FM..: cable 1 m, 3x0.75 mm²
Cable gland	PA6, black


22WP-..


22WDP-..


FM..R-SZ


FM..F-SZ

Measured values								Measuring ranges							
Output signals								Pressure						Flow rate	
		Water	Refrigerants	Water / glycol mixtures (<50 vol. %)	Nominal diameter DN	Flange connection	Thread connection	0...1 bar	0...2.5 bar	0...4 bar	0...6 bar	0...10 bar	0...16 bar		Type of sensor
Pressure															
Active	DC 0...10V	•	•							•					22WP-114
		•	•								•				22WP-115
		•	•									•			22WP-116
		•	•										•		22WP-117
	4...20 mA	•	•							•					22WP-134
		•	•								•				22WP-135
		•	•									•			22WP-136
		•	•										•		22WP-137
Differential pressure															
Active	DC 0...10V	•						•							22WDP-111
		•							•						22WDP-112
		•								•					22WDP-114
		•									•				22WDP-115
	4...20 mA	•						•							22WDP-131
		•							•						22WDP-132
		•								•					22WDP-134
		•									•				22WDP-135
Flow (Volumetric flow)															
Active	DC 0.5...10V	•		•	15		•							0...0.42 l/s	FM015R-SZ
		•		•	20		•							0...0.78 l/s	FM020R-SZ
		•		•	25		•							0...1.38 l/s	FM025R-SZ
		•		•	32		•							0...2.16 l/s	FM032R-SZ
		•		•	40		•							0...3.0 l/s	FM040R-SZ
		•		•	50		•							0...5.76 l/s	FM050R-SZ
		•		•	65	•								0...9.6 l/s	FM065F-SZ
		•		•	80	•								0...13.6 l/s	FM080F-SZ
		•		•	100	•								0...24.0 l/s	FM100F-SZ
		•		•	125	•								0...37.5 l/s	FM125F-SZ
		•		•	150	•								0...54.0 l/s	FM150F-SZ

Immersion pockets and compression fittings

		Sleeve length	Suitable for sensor											Type
			01DT-..H	01DT-..L	01DT-..N	01DT-..P	01DT-..R	01DT-..T	22DT-..H	22DT-..L	22DT-..N	22DT-..P	22DT-..R	22DT-..T	
	**Immersion pocket** Stainless steel G1/2", SW27	50 mm	•						•						A-22P-A06
		100 mm		•						•					A-22P-A08
		150 mm			•						•				A-22P-A10
		200 mm				•						•			A-22P-A12
		300 mm					•						•		A-22P-A14
		450 mm						•						•	A-22P-A16
	**Immersion pocket** Brass R1/2", SW22	50 mm	•						•						A-22P-A18
		100 mm		•						•					A-22P-A20
		150 mm			•						•				A-22P-A22
		200 mm				•						•			A-22P-A24
		300 mm					•						•		A-22P-A26
		450 mm						•						•	A-22P-A28
	**Cold barrier** Plastic L 50 mm For thermowell A-22P-A..			•	•	•	•	•		•	•	•	•	•	A-22P-A51
	**Compression fitting** Stainless steel G 1/4" (external thread) for 6 mm With cutting ring		•	•	•	•	•	•	•	•	•	•	•	•	A-22P-A45
	**Adapter for Siemens thermowell** Plastic With thermal contact fluid				•	•									A-22P-A53

Thermowell kits

		Sleeve length	Suitable for sensor			Type
			01HT-101CA	01HT-101JC	01HT-101FC	
	**Thermowell kits** Brass nickel-plated For sensor probe 6 mm Incl. probe fastening material G1/2", SW22	100 mm	•	•	•	A-22P-A61
		150 mm	•	•	•	A-22P-A62
		200 mm	•	•	•	A-22P-A63
	**Thermowell kits** Stainless steel For sensor probe 6 mm Incl. probe fastening material G1/2", SW22	100 mm	•	•	•	A-22P-A64
		150 mm	•	•	•	A-22P-A65
		200 mm	•	•	•	A-22P-A66

Mounting flange

		Ø	Suitable for sensor																				Type
			01CT-..	01CT-..F	01DT-..H	01DT-..L	01DT-..N	01DT-..P	01DT-..R	01DT-..T	20DTS-..	22DC-..	22DCK-..	22DCM-..	22DCV-..	22DT-..	22DT-..H	22DT-..L	22DT-..N	22DT-..P	22DT-..R	22DT-..T	22DTC-..	22DTH-..	22DTM-..	
	**Mounting flange** Plastic For sensor prove 6 mm Up to max. 80°C	4...7 mm	•	○	•	•	•	•	•	•							•	•	•	•	•	•				A-22D-A03
	**Mounting flange** Brass For sensor prove 6 mm Up to max. 260°C	6 mm			•	•	•	•	•	•							•	•	•	•	•	•				A-22D-A05
	**Mounting flange** Plastic For frost monitor 20DTS-..										•															A-22D-A12
	**Mounting flange** Plastic For duct sensor 19.5 mm	20 mm										○	○	○	○	○							○	○	○	A-22D-A35

○ Accessories included in scope of delivery ex works

Adapters and pipe connector kits

		Ø	Suitable for sensor		Type
			22WDP-..	22WP-..	
	**Reducer adapter** G 1/4" (internal thread) to G 1/2" (external thread)			•	A-22WP-A02
	**Pipe connector** Stainless steel Pipe 6 and 8 mm to G 1/4" (external thread) Multipack 2 pcs.	6 mm	•		A-22WP-A06
		8 mm	•		A-22WP-A10
	**Pipe connector** Brass Pipe 6 and 8 mm to G 1/4" (external thread) Multipack 2 pcs.	6 mm	•		A-22WP-A04
		8 mm	•		A-22WP-A08

Installation accessories

		Suitable for sensor																					Type
		01ATS-...	01DT-..H	01DT-..L	01DT-..N	01DT-..P	01DT-..R	01DT-..T	22DT-..H	22DT-..L	22DT-..N	22DT-..P	22DT-..R	22DT-..T	22MT-..	22CT-..	22HH-..	01UT-..	22UT-..	22UTH-..	22ADP-..	01APS-..	22WDP-..	
	**Mounting clip** With screws and adhesive foil		○	○	○	○	○	○	○	○	○	○	○	○										A-22D-A11
	**Mounting plate** S housing		•	•	•	•	•	•	•	•	•	•	•	•	○	○	○	○	○					A-22D-A09
	**Mounting plate** L housing																			○	○			A-22D-A10
	**Installation kit** With retaining bracket	○													○									A-22D-A08
	**Assembly angle** S form for 01APS-.. Metal																					•		A-22AP-A07
	**Assembly angle** L form for 01APS-.. Metal																					•		A-22AP-A06
	**Assembly angle** for 22WPD-.. Metal																						○	A-22WP-A11

○ Accessories included in scope of delivery ex works

Accessories for differential pressure sensors

		Length	Suitable for sensor 01APS-..	Suitable for sensor 22ADP-..	Type
	**Duct connection elements** Metal Hose connection 5 mm	40 mm	•	•	A-22AP-A02
	**Duct connection elements** Metal Hose connection 5 mm	100 mm	•	•	A-22AP-A04
	**Duct connection elements** Plastic Hose connection 6 mm Multipack 90 pcs.	80 mm	•		A-22AP-A09.1
	**Duct connection kit** For 22ADP-.. PVC tube 2 m 2 plastic connection elements	2000 mm	•	○	A-22AP-A08
	**Duct connection kit** For 01APS-.. PVC tube 2 m 2 plastic connection elements Multipack 50 pcs.	2000 mm	○		A-22AP-A05.1

○ Accessories included in scope of delivery ex works

Accessories for humidity sensors

		Suitable for sensor 22UTH-..	Suitable for sensor 22DTH-..	Type
	**Replacement filter** Stainless steel Wire mesh	•	•	A-22D-A06
	**Rain cover** For 22UTH-..	•		A-22U-A01

Tightening straps and thermal contact fluid

		Suitable for sensor					
		01ST-...	01HT-...	22HT-...	22HH-...	22HH-...X	Type
	**Tightening strap** For pipes up to Ø 40...110 mm	○	○	○			A-22P-A47
	**Tightening strap** For pipes up to Ø 40...250 mm	•	•	•			A-22P-A49
	**Syringe with thermal contact fluid**	•	•	•	•	•	A-22P-A44

○ Accessories included in scope of delivery ex works

Connection adapter

		Suitable for sensor														
		01DT-... 22DT-...	01PT-...	01MT-... 22MT-...	22CT-...	01HT-... 22HT-...	01UT-... 22UT-...	22UTH-...	22HH-...	22DTH-...	22DC-...	22DTC-... 22DTM-...	22DCK-... 22DCM-... 22DCV-...	22ADP-...	01APS-...	Type
	**Connection adapter M20** For cable 1 x 6 mm Multipack 10 pcs.	•	•	•	•	•	•	•	•	•	•	•	•	•		A-22G-A01.1
	**Connection adapter M20** For cable 2 x 6 mm Multipack 10 pcs.	•	•	•	•	•	•	•	•	•	•	•	•	•		A-22G-A02.1
	**Cable entry M20x1.5** Multipack 10 pcs.														•	A-22AP-A11.1

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 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



EN – 05.2020 – Subject to technical modifications

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BELIMO
ZoneTight™

1

Zone valves

Maximum comfort, minimum consumption

Zone Valve			
2-way zone valve (RB)	Internal thread	PN 20 / DN 15-25	4
3-way zone valve (RB)			4
2-way / 3-way zone valve (Z..S)	Internal thread	PN 20 / DN 15-25	5
ZoneTight™			
2-way zone valve (QCV)	Internal thread	PN 25 / DN 15-20	6
3-way change-over ball zone valve (QCV)			7
Pressure-independent characterised control valve (PIQCV)	Internal thread	PN 25 / DN 15-25	8
Pressure-independent flow limiter valve (PIFLV)	Internal thread	PN 25 / DN 15-25	9
Thermostat			
Digital	2-pipe / 4-pipe application		10
Mechanical	2-pipe application		10

BELIMO

DN 15 – 25

Media	Cold and hot water
Medium temperature	5…100°C
Pipe connection	Internal thread Rp (ISO 7-1)



RB2..+FRU..



RB3..+FRU..

Suitable Actuators

		DN 15		DN 20		DN 25	
		k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
2-way		1.5	RB215	4	RB220	8	RB225
3-way		1.5	RB315	4	RB320	8	RB325

Nominal torque	Open-close	3-point	Nominal voltage AC/DC 24 V AC 230 V	Running time motor	Actuator type	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
Standard actuators								
2 Nm	•	•	24 V	100 s	FRU24	600	600	600
	•	•	230 V	105 s	FRU230-3	600	600	600

BELIMO

DN 15 – 25

Media	Cold and hot water with up to max. 50% glycol
Medium temperature	0...93°C
Pipe connection	BSP



Z2..S..



Z3..S..

Suitable Actuators

	DN 15		DN 20		DN 25	
	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
2-way	1.7	Z215S..	2.2	Z220S..	2.6	Z225S..
3-way	2.2	Z315S..	2.6	Z320S..	3	Z325S..

Open-close	Nominal voltage	Fail-safe function	Running time motor	Running time emergency control function	Actuator type	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
Standard actuators								
•	24 V	•	13…18s	4…5s	Z215S-24	414		
•	230 V	•	13…18s	4…5s	Z215S-230	414		
•	120 V	•	13…18s	4…5s	Z215S-120	414		
•	24 V	•	13…18s	4…5s	Z220S-24		344	
•	230 V	•	13…18s	4…5s	Z220S-230		344	
•	120 V	•	13…18s	4…5s	Z220S-120		344	
•	24 V	•	13…18s	4…5s	Z225S-24			303
•	230 V	•	13…18s	4…5s	Z225S-230			303
•	24 V	•	13…18s	4…5s	Z315S-24	414		
•	230 V	•	13…18s	4…5s	Z315S-230	414		
•	24 V	•	13…18s	4…5s	Z320S-24		344	
•	230 V	•	13…18s	4…5s	Z320S-230		344	
•	24 V	•	13…18s	4…5s	Z325S-24			303
•	230 V	•	13…18s	4…5s	Z325S-230			303

BELIMO

DN 15 / DN 20



Media	Cold and hot water with up to max. 50% glycol
Medium temperature	2...100°C 2...90°C (with actuator)
Pipe connection	Internal thread Rp (ISO 7-1)
Flow characteristic	A-AB, equal percentage
Leakage rate	Leakage rate A, tight (EN 12266-1)

Suitable Actuators

Nominal torque	Open-close	3-point	Modulating (2 ... 10 VDC)	MP-Bus® communication	Fail-safe function	Nominal voltage AC/DC 24 V AC 230 V	Running time motor	Actuator type	DN 15 k_{vs} [m³/h] 0.09–1.2	DN 15 Valve type C215Q-F	DN 15 Δp_s [kPa]	DN 15 Δp_{max} [kPa] 1)	DN 20 k_{vs} [m³/h] 0.4–4.8	DN 20 Valve type C215Q-J	DN 20 Δp_s [kPa]	DN 20 Δp_{max} [kPa] 1)	DN 25 k_{vs} [m³/h] 0.5–8	DN 25 Valve type C220Q-K	DN 25 Δp_s [kPa]	DN 25 Δp_{max} [kPa] 1)	DN 25 k_{vs} [m³/h] 0.5–7	DN 25 Valve type C225Q-K
Standard actuators																						
1 Nm	•	•				24 V	75 s	CQ24A	520	280	520	280	520	280	520	280		
			•					CQ24A-SR	520	280	520	280	520	280	520	280		
	•	•				230 V	75 s	CQ230A	520	280	520	280	520	280	520	280		
					•	24 V	75 s	CQ24A-MPL	520	280	520	280	520	280	520	280		
Actuator with fail-safe function NC																						
1 Nm	•				•	24 V	75 s	CQK24A	520	280	520	280	520	280	520	280		
			•		•			CQK24A-SR	520	280	520	280	520	280	520	280		
	•				•	230 V	75 s	CQK230A	520	280	520	280	520	280	520	280		
2.5 Nm	•				•	24 V	75 s	TQF24	520	280	520	280	520	280	520	280		
	•				•	230 V	75 s	TQF230	520	280	520	280	520	280	520	280		
Fast runners																						
1 Nm	•	•				230 V	35 s	CQC230A	520	280	520	280	520	280	520	280		

CQ..

CQK..

TQF..

CQC..

1) Low noise operation ΔPmax = 50kPa

BELIMO

DN 15 / DN 20



Media	Cold and hot water with up to max. 50% glycol
Medium temperature	2...100°C 2...90°C (with actuator)
Pipe connection	Internal thread Rp (ISO 7-1)
Leakage rate	Leakage rate A, tight (EN 12266-1)

Suitable Actuators

Nominal torque	Open-close	3-point	fail-safe function	Nominal voltage AC/DC 24 V AC 230 V	Running time motor	Actuator type	DN 15 k_{vs} [m³/h] 2.5	DN 15 Valve type C315Q-H	DN 15 Δp_s [kPa]	DN 15 Δp_{max} [kPa] 1)	DN 20 k_{vs} [m³/h] 4	DN 20 Valve type C320Q-J	DN 20 Δp_s [kPa]	DN 20 Δp_{max} [kPa] 1)	DN 25 k_{vs} [m³/h] 4	DN 25 Valve type C325Q-J	DN 25 Δp_s [kPa]	DN 25 Δp_{max} [kPa] 1)
Standard actuators																		
1 Nm	•	•		24 V	75 s	CQ24A	280	280	280	280	280	280		
	•	•		230 V	75 s	CQ230A	280	280	280	280	280	280		
Actuator with fail-safe function NC																		
1 Nm	•		•	24 V	75 s	CQK24A	280	280	280	280	280	280		
	•		•	230 V	75 s	CQK230A	280	280	280	280	280	280		
2.5 Nm	•		•	24 V	75 s	TQF24	280	280	280	280	280	280		
	•		•	230 V	75 s	TQF230	280	280	280	280	280	280		
Fast runners																		
1 Nm	•	•		230 V	35 s	CQC230A	280	280	280	280	280	280		

CQ..

CQK..

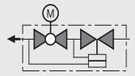
TQF..

CQC..

1) Low noise operation ΔPmax = 50kPa

BELIMO

DN 15 – 25



Media	Cold and hot water with up to max. 50% glycol
Medium temperature	-20...120°C 2...90°C (with actuator)
Pipe connection	Internal thread Rp (ISO 7-1)
Flow characteristic	A-AB, equal percentage
Leakage rate	Leakage rate A, tight (EN 12266-1)


C2..QP-..

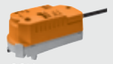

C2..QPT-..

Suitable Actuators

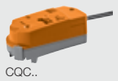
Nominal torque	Open-close	3-point	Modulating (2 ... 10 VDC)	MP-Bus® communication	Fail-safe function	Nominal voltage AC/DC 24 V AC 230 V	Running time motor	Actuator type	DN 15 Δp_s [kPa]	DN 15 Δp_{max} [kPa]	DN 20 Δp_s [kPa]	DN 20 Δp_{max} [kPa]	DN 25 Δp_s [kPa]	DN 25 Δp_{max} [kPa]
Standard actuators														
1 Nm	•	•				24 V	75 s	CQ24A	1400	350	1400	350	1400	350
			•					CQ24A-SR	1400	350	1400	350	1400	350
	•	•				230 V	75 s	CQ230A	1400	350	1400	350	1400	350
				•		24 V	75 s	CQ24A-MPL	1400	350	1400	350	1400	350
Actuator with fail-safe function NC														
1 Nm	•				•	24 V	75 s	CQK24A	1400	350	1400	350	1400	350
			•		•			CQK24A-SR	1400	350	1400	350	1400	350
	•				•	230 V	75 s	CQK230A	1400	350	1400	350	1400	350
2.5 Nm	•				•	24 V	75 s	TQF24	1400	350	1400	350	1400	350
	•				•	230 V	75 s	TQF230	1400	350	1400	350	1400	350
Fast runners														
1 Nm	•	•				230 V	35 s	CQC230A	1400	350	1400	350	1400	350

DN 15 V_{nom} [l/s]	DN 15 Valve type	DN 20 V_{nom} [l/s]	DN 20 Valve type	DN 25 V_{nom} [l/s]	DN 25 Valve type
0.058	C215QP-B				
	C215QPT-B				
0.117	C215QP-D	0.272	C220QP-F		
	C215QPT-D		C220QPT-F		
		0.583	C220QPT-G	0.583	C225QPT-G


CQ..


CQK..


TQF..


CQC..

BELIMO

DN 15 – 25

Media	Cold and hot water
Medium temperature	2...60°C
Pipe connection	Internal thread Rp (ISO 7-1)
Leakage rate	Leakage rate A, tight (EN 12266-1)


C215QFL..


C220QFL..


R225FL..

Suitable Actuators

Nominal torque	Open-close	3-point	Modulating (2 ... 10 VDC)	MP-Bus® communication	Fail-safe function	Nominal voltage AC/DC 24 V AC 230 V	Running time motor	Actuator type	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
Standard actuators											
1 Nm	•					24 V	75 s	CQ24A	520	520	
	•					230 V	75 s	CQ230A	520	520	
5 Nm	•					24 V	90 s	LR24A			520
	•					230 V	90 s	LR230A			520
Actuator with fail-safe function NC											
1 Nm	•				•	24 V	75 s	CQK24A	520	520	
	•				•	230 V	75 s	CQK230A	520	520	
2.5 NM	•				•	24 V	75 s	TQF24	520	520	
	•				•	230 V	75 s	TQF230	520	520	
4 Nm	•				•	24 V	75 s	LRF24			520
	•				•	230 V	75 s	LRF230			520
Fast runners											
1 Nm	•					230 V	35 s	CQC230A	520	520	
4 NM	•					24 V	9 s	LRQ24A			520

DN 15 V_{nom} [l/s]	DN 15 Valve type	DN 20 V_{nom} [l/s]	DN 20 Valve type	DN 25 V_{nom} [l/s]	DN 25 Valve type
0.08	C215QFL-C				
0.13	C215QFL-D				
0.18	C215QFL-E				
0.26	C215QFL-F0				
0.36	C215QFL-F	0.33	C220QFL-F6		
		0.42	C220QFL-G0		
		0.52	C220QFL-G		
		0.65	C220QFL-H0		
		0.8	C220QFL-H	1.0	R225FL-J


CQ..


LR..


CQK..


TQF..


LRF..


CQC..


LRQ..

	3-fan speed control	Single fan speed control	Open-close	3-point floating output	DC 0-10V output	DC 2-10V output	2-pipe cooling only	2-pipe cooling or heating	4-pipe cooling or heating	Occupancy mode	Nominal voltage AC 24V / AC 230V	Thermostat type	PIFLV	PIQCV	QCV	RB Series	Z..S Series
Digital: Built-in or external temperature sensor																	
 CFU-D...	•		•				•			•	230 V	CFU-D221	•	•	•	•	•
	•		•					•		•	230 V	CFU-D222	•	•	•	•	•
	•		•						•	•	230 V	CFU-D422	•	•	•	•	•
 EXT-CFU...		•	•				•			•	230 V	CFU-D221-SS [1]	•	•	•	•	•
	•		•					•			230 V	EXT-CFU-230-D222	•	•	•	•	•
	•		•						•		230 V	EXT-CFU-230-D422 [1]	•	•	•	•	•
	•		•					•		•	230 V	EXT-CFU-230-D2	•	•	•	•	•
	•		•						•	•	230 V	EXT-CFU-230-D4 [1]	•	•	•	•	•
 EXT-R... EXT-T24...	•	•			•			•			24 V	EXT-RCP-24	•	•	•		
	•	•		•				•			24 V	EXT-RCF-24		•	•	•	
					•	•		•		•	24 V	EXT-T24-D201		•	•		
Mechanical: Built-in or external temperature sensor																	
 CFU-M...	•		•				•				230 V	CFU-M211	•	•	•	•	•
	•		•					•			230 V	CFU-M212	•	•	•	•	•
 T24...				•	•			•		•	24 V	T24A1T		•	•	•	

[1] Available on request only



2

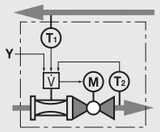
Electronic pressure-independent characterised control valves

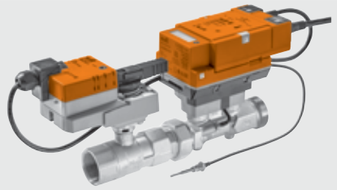
Complete transparency and highest efficiency

Belimo Energy Valve™	Internal thread	2-way	PN 25	DN 15 – 50	12
	Flange		PN 16	DN 65 – 150	14
Electronic pressure-independent characterised control valves (EPIV)	Internal thread	2-way	PN 25	DN 15 – 50	16
	Flange		PN 16	DN 65 – 150	18

DN 15 – 50

Media	Cold and warm water, water with glycol up to max. 25% vol.
Medium temperature	–10...120°C
Pipe connection	Internal thread Rp (ISO 7-1)
Flow characteristic	Equal percentage (acc. to VDI / VDE 2178) Can be switched to linear
Leakage rate	A, air bubble tight (EN 12266-1)
V_{max}	Freely adjustable 30... 100% of V_{nom}
Completely parameterisable by means of integrated web server	
Optional with connection to the Belimo Cloud	
Sensor-operated flow rate or power control	
Delta-T manager for optimum differential temperature	





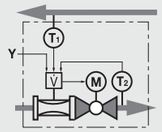
MID conformity marking

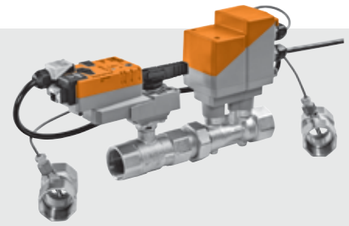
DN	Rp	V_{nom}	V_{nom}	Nominal voltage AC/DC 24 V	Modulating (2... 10 VDC, variable)	MP-Bus® communication	BACnet® communication	Modbus communication	Glycol monitoring 1)	Certified EN1434 / MID	Display	Valve type with actuator	Δp_s [kPa]	Δp_{max} [kPa]
With standard actuator														
15	1/2"	0.42 l/s	25 l/min	24 V	•	•	•	•		•	•	EV015R2+MID	1400	350
					•	•	•	•	•			EV015R2+BAC	1400	350
20	3/4"	0.69 l/s	41.7 l/min	24 V	•	•	•	•		•	•	EV020R2+MID	1400	350
					•	•	•	•	•			EV020R2+BAC	1400	350
25	1"	0.97 l/s	58.3 l/min	24 V	•	•	•	•		•	•	EV025R2+MID	1400	350
					•	•	•	•	•			EV025R2+BAC	1400	350
32	1 1/4"	1.67 l/s	100 l/min	24 V	•	•	•	•		•	•	EV032R2+MID	1400	350
					•	•	•	•	•			EV032R2+BAC	1400	350
40	1 1/2"	2.78 l/s	166.7 l/min	24 V	•	•	•	•		•	•	EV040R2+MID	1400	350
					•	•	•	•	•			EV040R2+BAC	1400	350
50	2"	4.17 l/s	250 l/min	24 V	•	•	•	•		•	•	EV050R2+MID	1400	350
					•	•	•	•	•			EV050R2+BAC	1400	350
		6.3 l/s	378 l/min	24 V	•	•	•	•	•			EV050R2+BAC-N	1400	350
With fail-safe function														
15	1/2"	0.42 l/s	25 l/min	24 V	•	•	•	•	•			EV015R2+KBAC	1400	350
20	3/4"	0.69 l/s	41.7 l/min	24 V	•	•	•	•	•			EV020R2+KBAC	1400	350
25	1"	0.97 l/s	58.3 l/min	24 V	•	•	•	•	•			EV025R2+KBAC	1400	350
32	1 1/4"	1.67 l/s	100 l/min	24 V	•	•	•	•	•			EV032R2+KBAC	1400	350
40	1 1/2"	2.78 l/s	166.7 l/min	24 V	•	•	•	•	•			EV040R2+KBAC	1400	350
50	2"	4.17 l/s	250 l/min	24 V	•	•	•	•	•			EV050R2+KBAC	1400	350
		6.3 l/s	378 l/min	24 V	•	•	•	•	•			EV050R2+KBAC-N	1400	350

1) Optimum heat transfer can be ensured with the monitoring of the glycol content.
Remark: Available in Q4 2021.

DN 15 – 50

Media	Cold and warm water, water with glycol up to max. 50% vol.
Medium temperature	–10...120°C
Pipe connection	Internal thread Rp (ISO 7-1)
Flow characteristic	Equal percentage (acc. to VDI / VDE 2178) Can be switched to linear
Leakage rate	A, air bubble tight (EN 12266-1)
V_{max}	Freely adjustable 30... 100% of V_{nom}
Completely parameterisable by means of integrated web server	
Optional with connection to the Belimo Cloud	
Sensor-operated flow rate or power control	
Delta-T manager for optimum differential temperature	





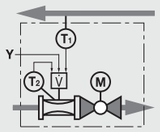
DN	Rp	V_{nom}	V_{nom}	Nominal voltage AC/DC 24 V	Modulating (2... 10 VDC, variable)	MP-Bus® communication	BACnet® communication	Modbus communication	Glycol monitoring 1)	Valve type with actuator	Δp_s [kPa]	Δp_{max} [kPa]
With standard actuator												
15	1/2"	0.35 l/s	21 l/min	24 V	•	•	•	•	•	EV015R+BAC	1400	350
20	3/4"	0.65 l/s	39 l/min	24 V	•	•	•	•	•	EV020R+BAC	1400	350
25	1"	1.15 l/s	69 l/min	24 V	•	•	•	•	•	EV025R+BAC	1400	350
32	1 1/4"	1.8 l/s	108 l/min	24 V	•	•	•	•	•	EV032R+BAC	1400	350
40	1 1/2"	2.5 l/s	150 l/min	24 V	•	•	•	•	•	EV040R+BAC	1400	350
50	2"	4.8 l/s	288 l/min	24 V	•	•	•	•	•	EV050R+BAC	1400	350
		6.3 l/s	378 l/min	24 V	•	•	•	•	•	EV050R+BAC-N	1400	350
With fail-safe function												
15	1/2"	0.35 l/s	21 l/min	24 V	•	•	•	•	•	EV015R+KBAC	1400	350
20	3/4"	0.65 l/s	39 l/min	24 V	•	•	•	•	•	EV020R+KBAC	1400	350
25	1"	1.15 l/s	69 l/min	24 V	•	•	•	•	•	EV025R+KBAC	1400	350
32	1 1/4"	1.8 l/s	108 l/min	24 V	•	•	•	•	•	EV032R+KBAC	1400	350
40	1 1/2"	2.5 l/s	150 l/min	24 V	•	•	•	•	•	EV040R+KBAC	1400	350
50	2"	6.3 l/s	378 l/min	24 V	•	•	•	•	•	EV050R+KBAC	1400	350
					•	•	•	•	•	EV050R+KBAC-N	1400	350

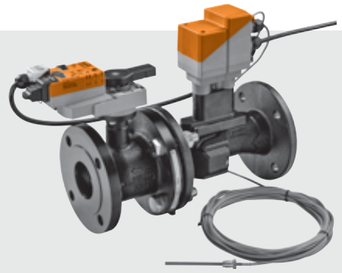
1) Optimum heat transfer can be ensured with the monitoring of the glycol content.

BELIMO

DN 65 – 150

Media	Cold and warm water, water with glycol up to max. 50% vol.
Medium temperature	–10...120°C
Pipe connection	Flange PN 16 (EN 1092-2)
Flow characteristic	Equal percentage (acc. to VDI / VDE 2178) Can be switched to linear
Leakage rate	A, air bubble tight (EN 12266-1)
V_{max}	Freely adjustable 30... 100% of V_{nom}
Completely parameterisable by means of integrated web server	
Optional with connection to the Belimo Cloud	
Sensor-operated flow rate or power control	
Delta-T manager for optimum differential temperature	





BTL · Modbus · BELIMO CLOUD

DN	V_{nom}	V_{nom}	Nominal voltage AC/DC 24 V	Modulating (2...10 VDC, variable)	MP-Bus® communication	BACnet® communication	Modbus communication	Glycol monitoring 1)	Valve type with actuator	Δp_s [kPa]	Δp_{max} [kPa]
With standard actuator											
65	8 l/s	480 l/min	24 V	•	•	•	•	•	EV065F+BAC	690	340
80	11 l/s	660 l/min	24 V	•	•	•	•	•	EV080F+BAC	690	340
100	20 l/s	1200 l/min	24 V	•	•	•	•	•	EV100F+BAC	690	340
125	31 l/s	1860 l/min	24 V	•	•	•	•	•	EV125F+BAC	690	340
150	45 l/s	2700 l/min	24 V	•	•	•	•	•	EV150F+BAC	690	340
With fail-safe function											
65	8 l/s	480 l/min	24 V	•	•	•	•	•	EV065F+KBAC	690	340
80	11 l/s	660 l/min	24 V	•	•	•	•	•	EV080F+KBAC	690	340
100	20 l/s	1200 l/min	24 V	•	•	•	•	•	EV100F+KBAC	690	340
125	31 l/s	1860 l/min	24 V	•	•	•	•	•	EV125F+KBAC	690	340
150	45 l/s	2700 l/min	24 V	•	•	•	•	•	EV150F+KBAC	690	340

[1] Optimum heat transfer can be ensured with the monitoring of the glycol content.
If you have any questions, please get in touch with your local Belimo contact person.

Subject to technical modifications

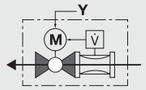
Electronic pressure-independent characterised control valves
2

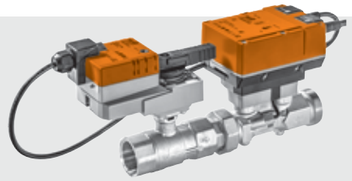
Electronic pressure-independent characterised control valve (EPIV)
2-way / PN 25 / internal thread

BELIMO

DN 15 – 50

Media	Cold and warm water, water with glycol up to max. 50% vol.
Medium temperature	–10...120°C
Pipe connection	Internal thread Rp (ISO 7-1)
Flow characteristic	Equal percentage (acc. to VDI / VDE 2178) Can be switched to linear
Leakage rate	A, air bubble tight (EN 12266-1)
V_{max}	Freely adjustable 25... 100% of V_{nom}
Control, operating range, position feedback and further functions are parameterisable with PC-Tool, NFC/Apps	





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Modbus

NFC

MP-BUS®

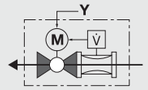
DN	Rp	V_{nom}	V_{nom}	Nominal voltage AC/DC 24 V	Modulating (2... 10 VDC, variable)	MP-Bus® communication	Modbus communication	BACnet® communication	Valve type with actuator	Δp_s [kPa]	Δp_{max} [kPa]
With BACnet / Modbus actuator											
15	1/2"	0.42 l/s	25 l/min	24 V	•	•	•	•	EP015R2+BAC	1400	350
20	3/4"	0.69 l/s	41.7 l/min	24 V	•	•	•	•	EP020R2+BAC	1400	350
25	1"	0.97 l/s	58.3 l/min	24 V	•	•	•	•	EP025R2+BAC	1400	350
32	1 1/4"	1.67 l/s	100 l/min	24 V	•	•	•	•	EP032R2+BAC	1400	350
40	1 1/2"	2.78 l/s	166.7 l/min	24 V	•	•	•	•	EP040R2+BAC	1400	350
50	2"	4.17 l/s	250 l/min	24 V	•	•	•	•	EP050R2+BAC	1400	350
		6.3 l/s	378 l/min	24 V	•	•	•	•	EP050R2+BAC-N	1400	350
With fail-safe function											
15	1/2"	0.42 l/s	25 l/min	24 V	•	•	•	•	EP015R2+KBAC	1400	350
20	3/4"	0.69 l/s	41.7 l/min	24 V	•	•	•	•	EP020R2+KBAC	1400	350
25	1"	0.97 l/s	58.3 l/min	24 V	•	•	•	•	EP025R2+KBAC	1400	350
32	1 1/4"	1.67 l/s	100 l/min	24 V	•	•	•	•	EP032R2+KBAC	1400	350
40	1 1/2"	2.78 l/s	166.7 l/min	24 V	•	•	•	•	EP040R2+KBAC	1400	350
50	2"	4.17 l/s	250 l/min	24 V	•	•	•	•	EP050R2+KBAC	1400	350
		6.3 l/s	378 l/min	24 V	•	•	•	•	EP050R2+KBAC-N	1400	350

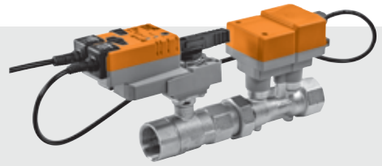
Remark: Available in Q4 2021.

BELIMO
Electronic pressure-independent characterised control valve (EPIV)
2-way / PN 25 / internal thread

DN 15 – 50

Media	Cold and warm water, water with glycol up to max. 50% vol.
Medium temperature	–10...120°C
Pipe connection	Internal thread Rp (ISO 7-1)
Flow characteristic	Equal percentage (acc. to VDI / VDE 2178) Can be switched to linear
Leakage rate	A, air bubble tight (EN 12266-1)
V_{max}	Freely adjustable 30... 100% of V_{nom}
Control, operating range, position feedback and further functions are parameterisable with PC-Tool	





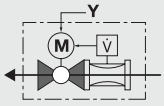
BTL · BACnet · TESTING LABORATORIES

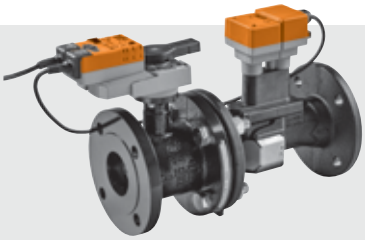
Modbus

DN	Rp	V_{nom}	V_{nom}	Nominal voltage AC/DC 24 V	Modulating (2... 10 VDC, variable)	MP-Bus® communication	Modbus communication	BACnet® communication	Valve type with actuator	Δp_s [kPa]	Δp_{max} [kPa]
With standard actuator											
15	1/2"	0.35 l/s	21 l/min	24 V	•	•			EP015R+MP	1400	350
20	3/4"	0.65 l/s	39 l/min	24 V	•	•			EP020R+MP	1400	350
25	1"	1.15 l/s	69 l/min	24 V	•	•			EP025R+MP	1400	350
32	1 1/4"	1.8 l/s	108 l/min	24 V	•	•			EP032R+MP	1400	350
40	1 1/2"	2.5 l/s	150 l/min	24 V	•	•			EP040R+MP	1400	350
50	2"	4.8 l/s	288 l/min	24 V	•	•			EP050R+MP	1400	350
		6.3 l/s	378 l/min	24 V	•	•			EP050R+MP-N	1400	350
With fail-safe function											
15	1/2"	0.35 l/s	21 l/min	24 V	•	•			EP015R+KMP	1400	350
20	3/4"	0.65 l/s	39 l/min	24 V	•	•			EP020R+KMP	1400	350
25	1"	1.15 l/s	69 l/min	24 V	•	•			EP025R+KMP	1400	350
32	1 1/4"	1.8 l/s	108 l/min	24 V	•	•			EP032R+KMP	1400	350
40	1 1/2"	2.5 l/s	150 l/min	24 V	•	•			EP040R+KMP	1400	350
50	2"	4.8 l/s	288 l/min	24 V	•	•			EP050R+KMP	1400	350
		6.3 l/s	378 l/min	24 V	•	•			EP050R+KMP-N	1400	350
With BACnet / Modbus actuator											
15	1/2"	0.35 l/s	21 l/min	24 V	•	•	•	•	EP015R+MOD	1400	350
20	3/4"	0.65 l/s	39 l/min	24 V	•	•	•	•	EP020R+MOD	1400	350
25	1"	1.15 l/s	69 l/min	24 V	•	•	•	•	EP025R+MOD	1400	350
32	1 1/4"	1.8 l/s	108 l/min	24 V	•	•	•	•	EP032R+MOD	1400	350
40	1 1/2"	2.5 l/s	150 l/min	24 V	•	•	•	•	EP040R+MOD	1400	350
50	2"	4.8 l/s	288 l/min	24 V	•	•	•	•	EP050R+MOD	1400	350
		6.3 l/s	378 l/min	24 V	•	•	•	•	EP050R+MOD-N	1400	350

DN 65 – 150

Media	Cold and warm water, water with glycol up to max. 50% vol.
Medium temperature	–10...120°C
Pipe connection	Flange PN 16 (EN 1092-2)
Flow characteristic	Equal percentage (acc. to VDI / VDE 2178) Can be switched to linear
Leakage rate	A, air bubble tight (EN 12266-1)
V_{max}	Freely adjustable 30... 100% of V_{nom}
Control, operating range, position feedback and further functions are parameterisable with PC-Tool	





DN	V_{nom}	V_{nom}	Nominal voltage AC/DC 24 V	Modulating (2 ... 10 VDC, variable)	MP-Bus® communication	Modbus communication	BACnet® communication	Valve type with actuator	Δp_s [kPa]	Δp_{max} [kPa]
With standard actuator										
65	8 l/s	480 l/min	24 V	•	•			EP065F+MP	690	340
80	11 l/s	660 l/min	24 V	•	•			EP080F+MP	690	340
100	20 l/s	1200 l/min	24 V	•	•			EP100F+MP	690	340
125	31 l/s	1860 l/min	24 V	•	•			EP125F+MP	690	340
150	45 l/s	2700 l/min	24 V	•	•			EP150F+MP	690	340
With fail-safe function										
65	8 l/s	480 l/min	24 V	•	•			EP065F+KMP	690	340
80	11 l/s	660 l/min	24 V	•	•			EP080F+KMP	690	340
100	20 l/s	1200 l/min	24 V	•	•			EP100F+KMP	690	340
125	31 l/s	1860 l/min	24 V	•	•			EP125F+KMP	690	340
150	45 l/s	2700 l/min	24 V	•	•			EP150F+KMP	690	340
With BACnet / Modbus actuator										
65	8 l/s	480 l/min	24 V	•	•	•	•	EP065F+MOD	690	340
80	11 l/s	660 l/min	24 V	•	•	•	•	EP080F+MOD	690	340
100	20 l/s	1200 l/min	24 V	•	•	•	•	EP100F+MOD	690	340
125	31 l/s	1860 l/min	24 V	•	•	•	•	EP125F+MOD	690	340
150	45 l/s	2700 l/min	24 V	•	•	•	•	EP150F+MOD	690	340

If you have any questions, please get in touch with your local Belimo contact person.

3

Characterised control valves (CCV)

Reliable control of
heating and cooling circuits

Characterised Control Valve	Internal thread	2-way	PN 25 / PN 40	DN 15 – 80	20
		3-way			20
	Flange	2-way	PN 16	DN 65 – 150	24
Steam Valve	Flange	2-way	PN 16	DN 15 – 80	26

BELIMO

DN 15–80



Media	Cold and hot water with up to max. 50% glycol
Medium temperature	–10...120°C (DN 15...50), -18...100°C (DN 65...80) (small actuators TR.. only up to 100°C)
Pipe connection	Internal thread Rp (ISO 7-1)
Flow characteristic	A-AB equal percentage / B-AB linear (k_{vs} 70% of A-AB)
Leakage rate	Control path A–AB: Leakage rate A, air bubble tight (EN 12266-1) Bypass B–AB: Leakage class I



Closed and open water circuit

2-way

DN 15		DN 20			
k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
0.25	R2015-P25-S1				
0.4	R2015-P4-S1				
0.63	R2015-P63-S1				
1	R2015-1-S1				
1.6	R2015-1P6-S1				
2.5	R2015-2P5-S1			4	R2020-4-S2
4	R2015-4-S1	4	R2020-4-S1	6.3	R2020-6P3-S2
6.3	R2015-6P3-S1	6.3	R2020-6P3-S1	8.6	R2020-8P6-S2



Closed water circuit

3-way

DN 15		DN 20			
k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
0.25	R3015-P25-S1				
0.4	R3015-P4-S1				
0.63	R3015-P63-S1				
1	R3015-1-S1				
1.6	R3015-1P6-S1				
2.5	R3015-2P5-S1	4	R3020-4-S1	4	R3020-4-S2
4	R3015-4-S1	6.3	R3020-6P3-S1	6.3	R3020-6P3-S2

DN 25		DN 32				DN 40						DN 50					
k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
6.3	R2025-6P3-S2													25	R2050-25-S4		
10	R2025-10-S2													40	R2050-40-S4		
16	R2025-16-S2	10	R2032-10-S2	16	R2032-16-S3	16	R2040-16-S2	16	R2040-16-S3	25	R2040-25-S4	25	R2050-25-S3	58	R2050-58-S4		
25	R2025-25-S2	20	R2032-20-S2 [3]	25	R2032-25-S3	25	R2040-25-S2	25	R2040-25-S3	40	R2040-40-S4	40	R2050-40-S3	70	R2050-70-S4		

DN 25		DN 32				DN 40						DN 50					
k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
6.3	R3025-6P3-S2													25	R3050-25-S4		
10	R3025-10-S2	10	R3032-10-S2	25	R3032-25-S3			16	R3040-16-S3	40	R3040-40-S4			40	R3050-40-S4		
				16	R3032-16-S3					25	R3040-25-S4			58	R3050-58-S4		

Suitable Actuators

Nominal torque	Open-close	3-point	Modulating (2...10 VDC)	Modulating (0.5...10 VDC)	Fail-safe function	Nominal voltage	Running time motor 90°	Running time emergency control function

Small and compact actuators



TR..

Nominal torque	Open-close	3-point	Modulating (2...10 VDC)	Modulating (0.5...10 VDC)	Fail-safe function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type		DN 15 Δps [kPa]	DN 15 Δpmax 1) [kPa]	DN 20 Δps [kPa]	DN 20 Δpmax 1) [kPa]	DN 25 Δps [kPa]	DN 25 Δpmax 1) [kPa]
2 Nm	•	•				24 V	100 s		TR24 2)		1400	350	1400	350		
2 Nm	•	•				230 V	105 s		TR230-3 2)		1400	350	1400	350		
2 Nm			•			24 V	90 s		TR24-SR 2)		1400	350	1400	350		

Standard actuators



LR..
NR..
SR..

Nominal torque	Open-close	3-point	Modulating (2...10 VDC)	Modulating (0.5...10 VDC)	Fail-safe function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type without auxiliary switch	with auxiliary switch	DN 15 Δps [kPa]	DN 15 Δpmax 1) [kPa]	DN 20 Δps [kPa]	DN 20 Δpmax 1) [kPa]	DN 25 Δps [kPa]	DN 25 Δpmax 1) [kPa]
5 Nm	•	•				24 V	90 s		LR24A	..-S					1400	350
5 Nm	•	•				230 V	90 s		LR230A	..-S					1400	350
5 Nm			•			24 V	90 s		LR24A-SR						1400	350
5 Nm				•		24 V	90 s		LR24A-SZ						1400	350
10 Nm	•	•				24 V	90 s		NR24A	..-S						
10 Nm	•	•				230 V	90 s		NR230A	..-S						
10 Nm			•			24 V	90 s		NR24A-SR							
10 Nm				•		24 V	90 s		NR24A-SZ							
20 Nm	•	•				24 V	90 s		SR24A	..-S						
20 Nm	•	•				230 V	90 s		SR230A	..-S						
20 Nm			•			24 V	90 s		SR24A-SR							
20 Nm				•		24 V	90 s		SR24A-SZ							

Fast running actuators



LRQ..
NRQ..
SRQ..

Nominal torque	Open-close	3-point	Modulating (2...10 VDC)	Modulating (0.5...10 VDC)	Fail-safe function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type		DN 15 Δps [kPa]	DN 15 Δpmax 1) [kPa]	DN 20 Δps [kPa]	DN 20 Δpmax 1) [kPa]	DN 25 Δps [kPa]	DN 25 Δpmax 1) [kPa]
4 Nm	•					24 V	9 s		LRQ24A		1400	350	1400	350	1400	350
4 Nm			•			24 V	9 s		LRQ24A-SR		1400	350	1400	350	1400	350
8 Nm	•					24 V	9 s		NRQ24A							
8 Nm			•			24 V	9 s		NRQ24A-SR							
16 Nm	•					24 V	9 s		SRQ24A							
16 Nm			•			24 V	9 s		SRQ24A-SR							

Actuators with fail-safe function



TRF..



LRF..



NRF..
SRF..

Nominal torque	Open-close	3-point	Modulating (2...10 VDC)	Modulating (0.5...10 VDC)	Fail-safe function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type NC without auxiliary switch	with auxiliary switch(es)	DN 15 Δps [kPa]	DN 15 Δpmax 1) [kPa]	DN 20 Δps [kPa]	DN 20 Δpmax 1) [kPa]	DN 25 Δps [kPa]	DN 25 Δpmax 1) [kPa]
2.5 Nm	•				•	24 V	75 s	75 s	TRF24 2)	..-S	1400	350	1400	350		
2.5 Nm	•				•	230 V	75 s	75 s	TRF230	..-S	1400	350	1400	350		
2.5 Nm			•		•	24 V	90 s	<25 s	TRF24-SR 2)		1400	350	1400	350		
4 Nm	•				•	24 V	<75 s	<20 s	LRF24 2)	..-S					1400	350
4 Nm	•				•	230 V	<75 s	<20 s	LRF230	..-S					1400	350
4 Nm			•		•	24 V	<75 s	<20 s	LRF24-SR 2)						1400	350
10 Nm	•				•	AC 24...240 V DC 24...125 V	90 s	<20 s	NRFA	..-S2						
10 Nm			•		•	24 V	90 s	<20 s	NRF24A-SR							
20 Nm	•				•	AC 24...240 V DC 24...125 V	90 s	<20 s	SRFA	..-S2						
20 Nm			•		•	24 V	90 s	<20 s	SRF24A-SR							

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DN 25 Δps [kPa]	DN 25 Δpmax 1) [kPa]	DN 32 Δps [kPa]	DN 32 Δpmax 1) [kPa]	DN 40 Δps [kPa]	DN 40 Δpmax 1) [kPa]	DN 50 Δps [kPa]	DN 50 Δpmax 1) [kPa]
1400	350	1400	350	1400	350		
1400	350	1400	350	1400	350		
1400	350	1400	350	1400	350		
1400	350	1400	350	1400	350		
		1400	350	1400 3)	350 3)	1400	350
		1400	350	1400 3)	350 3)	1400	350
		1400	350	1400 3)	350 3)	1400	350
		1400	350	1400 3)	350 3)	1400	350
						1400	350
						1400	350
						1400	350
						1400	350

DN 25 Δps [kPa]	DN 25 Δpmax 1) [kPa]	DN 32 Δps [kPa]	DN 32 Δpmax 1) [kPa]	DN 40 Δps [kPa]	DN 40 Δpmax 1) [kPa]	DN 50 Δps [kPa]	DN 50 Δpmax 1) [kPa]
1400	350	1400	350	1400	350		
1400	350	1400	350	1400	350		
		1400	350	1400 3)	350 3)	1400	350
		1400	350	1400 3)	350 3)	1400	350
						1400	350
						1400	350

DN 25 Δps [kPa]	DN 25 Δpmax 1) [kPa]	DN 32 Δps [kPa]	DN 32 Δpmax 1) [kPa]	DN 40 Δps [kPa]	DN 40 Δpmax 1) [kPa]	DN 50 Δps [kPa]	DN 50 Δpmax 1) [kPa]
1400	350	1400	350	1400	350		
1400	350	1400	350	1400	350		
1400	350	1400	350	1400	350		
		1400	350	1400 3)	350 3)	1400	350
		1400	350	1400 3)	350 3)	1400	350
						1400	350
						1400	350

1) Low-noise operation Δp_{max} = 200 kPa.
2) If medium temperature ≥100°C, then the line and the valve must be insulated.
3) Non-spring: using NR…series actuator for application >70°C.
Fast-running: using NRQ…series actuator for application >70°C.
Spring return: using NRF…series actuator for application >70°C.

Legend: Recommended model; Optional model

Characterised control valves
3

Subject to technical modifications

Characterised control valves
Internal thread / PN 25 / PN 40

DN 15–80

Media	Cold and hot water with up to max. 50% glycol
Medium temperature	–10...120°C (DN 15...50), -18...100°C (DN 65...80) (small actuators TR.. only up to 100°C)
Pipe connection	Internal thread Rp (ISO 7-1)
Flow characteristic	A-AB equal percentage / B-AB linear (k_{vs} 70% of A-AB)
Leakage rate	Control path A–AB: Leakage rate A, air bubble tight (EN 12266-1) Bypass B–AB: Leakage class I



Closed and open water circuit

2-way

DN 65		DN 80	
k_{vs} [m³/h]	Valve type	k_{vs} [m³/h]	Valve type
150	R2065-150-S4	150	R2080-150-S4



Closed water circuit

3-way

Suitable Actuators

Small and compact actuators



TR..

Nominal torque	Open-close	3-point	Modulating (2...10 VDC)	Modulating (0.5...10 VDC)	Fail-safe function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type		DN 65 Δps [kPa]	DN 65 Δpmax 1) [kPa]	DN 80 Δps [kPa]	DN 80 Δpmax 1) [kPa]
2 Nm	•	•				24 V	100 s		TR24 2)					
	•	•				230 V	105 s		TR230-3 2)					
			•			24 V	90 s		TR24-SR 2)					

Standard actuators



LR.. NR.. SR..

Nominal torque	Open-close	3-point	Modulating (2...10 VDC)	Modulating (0.5...10 VDC)	Fail-safe function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type without auxiliary switch	with auxiliary switch	DN 65 Δps [kPa]	DN 65 Δpmax 1) [kPa]	DN 80 Δps [kPa]	DN 80 Δpmax 1) [kPa]
5 Nm	•	•				24 V	90 s		LR24A	..-S				
	•	•				230 V			LR230A	..-S				
			•			24 V			LR24A-SR					
				•		24 V			LR24A-SZ					
10 Nm	•	•				24 V	90 s		NR24A	..-S				
	•	•				230 V			NR230A	..-S				
			•			24 V			NR24A-SR					
				•		24 V			NR24A-SZ					
20 Nm	•	•				24 V	90 s		SR24A	..-S	700	200	700	200
	•	•				230 V			SR230A	..-S	700	200	700	200
			•			24 V			SR24A-SR		700	200	700	200
				•		24 V			SR24A-SZ		700	200	700	200

Fast running actuators



LRQ.. NRQ.. SRQ..

Nominal torque	Open-close	3-point	Modulating (2...10 VDC)	Modulating (0.5...10 VDC)	Fail-safe function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type		DN 65 Δps [kPa]	DN 65 Δpmax 1) [kPa]	DN 80 Δps [kPa]	DN 80 Δpmax 1) [kPa]
4 Nm	•					24 V	9 s		LRQ24A					
		•				24 V			LRQ24A-SR					
8 Nm	•					24 V	9 s		NRQ24A					
		•				24 V			NRQ24A-SR					
16 Nm	•					24 V	9 s		SRQ24A		700	200	700	200
		•				24 V			SRQ24A-SR		700	200	700	200

Actuators with fail-safe function



TRF..



LRF..



NRF.. SRF..

Nominal torque	Open-close	3-point	Modulating (2...10 VDC)	Modulating (0.5...10 VDC)	Fail-safe function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type NC without auxiliary switch	with auxiliary switch(es)	DN 65 Δps [kPa]	DN 65 Δpmax 1) [kPa]	DN 80 Δps [kPa]	DN 80 Δpmax 1) [kPa]
2.5 Nm	•				•	24 V	75 s	75 s	TRF24 2)	..-S				
	•				•	230 V	75 s	75 s	TRF230	..-S				
			•		•	24 V	90 s	<25 s	TRF24-SR 2)					
4 Nm	•				•	24 V	<75 s	<20 s	LRF24 2)	..-S				
	•				•	230 V	<75 s	<20 s	LRF230	..-S				
	•		•		•	24 V	<75 s	<20 s	LRF24-SR 2)					
10 Nm	•				•	AC 24...240 V DC 24...125 V	90 s	<20 s	NRFA	..-S2				
	•		•		•	24 V	90 s	<20 s	NRF24A-SR					
20 Nm	•				•	AC 24...240 V DC 24...125 V	90 s	<20 s	SRFA	..-S2	700	200	700	700
	•		•		•	24 V	90 s	<20 s	SRF24A-SR		700	200	200	200

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1) Low-noise operation Δp_{max} = 200 kPa.
2) If medium temperature ≥100°C, then the line and the valve must be insulated.

Legend: Recommended model

Characterised control valves
3

BELIMO

Characterised control valves
Flange / PN 16

DN 65 – 150

Media	Cold and hot water with up to max. 50% glycol
Medium temperature	–5...100°C
Pipe connection	Flange PN 16
Flow characteristic	A-AB, equal percentage
Leakage rate	Leakage rate A, tight (EN 12266-1)

Suitable Actuators



Closed water circuit

2-way

Nominal torque	Open-close	3-point	Modulating (2...10 VDC)	Modulating (0.5...10 VDC)	Fail-safe function	Nominal voltage	Running time motor 90°	Running time emergency control function	Auxiliary switch SPDT	Actuator type	DN 65 k_{vs} [m³/h]	DN 65 Valve type	DN 80 k_{vs} [m³/h]	DN 80 Valve type	DN 100 k_{vs} [m³/h]	DN 100 Valve type	DN 125 k_{vs} [m³/h]	DN 125 Valve type	DN 150 k_{vs} [m³/h]	DN 150 Valve type
											63	R664AO	100	R679AO	140	R6099AO	230	R6124AO	320	R6149AO
Standard actuators											Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]
20 Nm	•	•				24 V	90 s			SR24A-5	700	350	700	350						
	•	•				230 V				SR230A-5	700	350	700	350						
			•			24 V				SR24A-SR-5	700	350	700	350						
			•			230 V				SR230A-SR-5	700	350	700	350						
40 Nm	•					24 V	150 s			GR24A-7					700	350	700	350	400	250
	•					230 V				GR230A-7					700	350	700	350	400	250
			•			24 V				GR24A-SR-7					700	350	700	350	400	250
Fast running actuators											Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]
16 Nm			•			24 V	7..15 s			SRQ..AX..-5*	700	350								
Actuators with fail-safe function NC / NO											Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]	Δp_s [kPa]	Δp_{max} [1)] [kPa]
20 Nm	•				•	AC 24...240 V DC 24...125 V	<75 s	<20 s	2	SRFA-5	700	350	700	350						
	•				•					SRFA-S2-5	700	350	700	350						
			•		•	24 V	90 s	<20 s		SRF24A-SR-5	700	350	700	350						
40 Nm	•				•	24 V	150 s	35 s		GRK24A-7					700	350	700	350	400	250
			•	•	•					GRK24A-MF-7					700	350	700	350	400	250



SR..



GR..



SRQ..AX..



SRF..



GRK..

Continued from previous page

Continued next page

* Only available via VC

[1)] Low-noise operation Δp_{max} = 200 kPa.

Characterised control valves
3

Subject to technical modifications

BELIMO

DN 15–80

Media	Cold water, hot water and steam
Medium temperature	0…+175°C
Pipe connection	Flange (ISO 7005-2)
Leakage rate	Max. 0.01% Kvs value (max. 0.06% kvs for DN15)

Suitable Actuators



Closed water circuit

2-way

Nominal torque	Open-close	Modulating (2...10 VDC)	Fail-safe function	Nominal voltage	Running time motor 90°	Auxiliary switch SPDT	IP rating	Actuator type	DN 15 k_{vs} [m³/h]	DN 15 Valve type	DN 25 k_{vs} [m³/h]	DN 25 Valve type
Fail-Safe Actuator												
4 Nm	•		•	24V	75 s	2	IP 54	LFH24-S	0.86	R610AS		
		•	•	24V		2	IP 54	LFH24-SR-S	1.4	R611AS		
	•		•	AC 230 V		2	IP 54	LFH230-S	2.2	R612AS		
20 Nm		•	•	24V	90 s		IP 54	SRF24A-SR-5	3.5	R613AS	8.6	R623AS
	•		•	AC 24…240 V DC 24…125 V			IP 54	SRFA-5	5.2	R614AS	13.8	R624AS
	•		•	AC 24…240 V DC 24…125 V		2	IP 54	SRFA-S2-5				



LFH...



SRF..

Actuator type	DN 15 Δp_s [kPa]	DN 15 Δp_{max} [kPa]	DN 25 Δp_s [kPa]	DN 25 Δp_{max} [kPa]
LFH24-S	1000	350	1000	350
LFH24-SR-S	1000	350	1000	350
LFH230-S	1000	350	1000	350
SRF24A-SR-5				
SRFA-5				
SRFA-S2-5				

[1] Linkage WSRF

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DN 40 k_{vs} [m³/h]	DN 40 Valve type	DN 50 k_{vs} [m³/h]	DN 50 Valve type	DN 65 k_{vs} [m³/h]	DN 65 Valve type	DN 80 k_{vs} [m³/h]	DN 80 Valve type
21.6	R638AS						
34.5	R639AS	56	R649AS	81.9	R664AS	108	R679AS

DN 40 Δp_s [kPa]	DN 40 Δp_{max} [kPa]	DN 50 Δp_s [kPa]	DN 50 Δp_{max} [kPa]	DN 65 Δp_s [kPa]	DN 65 Δp_{max} [kPa]	DN 80 Δp_s [kPa]	DN 80 Δp_{max} [kPa]
1000	350						
1000	350						
		1000 [1]	350	1000 [1]	350	700 [1]	350
		1000 [1]	350	1000 [1]	350	700 [1]	350
		1000 [1]	350	1000 [1]	350	700 [1]	350

Characterised control valves
3

Subject to technical modifications



4

Globe valves

Energy-optimised control of steam, cold water,
low temperature hot water and high temperature water circuits

Internal thread	2-way 3-way	Stainless steel for cold and hot water applications	PN 25 / DN 15 – 50	30
Flange	2-way 3-way	Ductile iron for cold and hot water applications	PN 16 / DN 65 – 250	32
Flange	2-way	Ductile iron for cold, hot and steam applications	PN 25 / DN 15 – 250	34

Globe valves
Internal thread / 130°C / PN 25

DN 15 – 50

Media	Cold, warm and hot water, water with glycol up to max. 50% vol.
Medium temperature	0...130°C
Pipe connection	Internal thread (ISO 7-1)
Flow characteristic	A-AB equal percentage / B-AB linear
Leakage rate	Control path and bypass 0.02% of k_{VS} value



Closed cold and hot water systems

2-way

DN 15		DN 15	
k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
1.6	H215S-G	4.0	H215S-J



Closed cold and hot water systems

3-way

DN 15		DN 15	
k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
1.6	H315S-G	4.0	H315S-J

DN 20		DN 25		DN 32		DN 40		DN 50	
k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
6.3	H220S-K	10	H225S-L	16	H232S-M	25	H240S-N	40	H250S-P

DN 20		DN 25		DN 32		DN 40		DN 50	
k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
6.3	H320S-K	10	H325S-L	16	H332S-M	25	H340S-N	40	H350S-P

Suitable Actuators



NV.. SV..

Standard actuators

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (0.5...10 VDC)	Modulating (2...10 VDC)	MP-Bus® communication	fail-safe function	Nominal voltage AC/DC 24 VC AC 230 V	Actuator type	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]
1000 N	150 s		•	•					24 V	NV24A-TPC	800	800	400	800	800	400
			•	•					230 V	NV230A-TPC	800	800	400	800	800	400
					•				24 V	NV24A-SZ-TPC	800	800	400	800	800	400
						•	•		24 V	NV24A-MP-TPC	800	800	400	800	800	400
1500 N	150 s		•	•					24 V	SV24A-TPC						
			•	•					230 V	SV230A-TPC						
					•				24 V	SV24A-SZ-TPC						
						•	•		24 V	SV24A-MP-TPC						

Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]
800	800	400	600	600	300	550	550	270	450	450	220	300	300	150
800	800	400	600	600	300	550	550	270	450	450	220	300	300	150
800	800	400	600	600	300	550	550	270	450	450	220	300	300	150
800	800	400	600	600	300	550	550	270	450	450	220	300	300	150
									700	700	350	500	500	250
800	800	400	600	600	300	550	550	270	450	450	220	300	300	150
									700	700	350	500	500	250
									700	700	350	500	500	250
									700	700	350	500	500	250
									700	700	350	500	500	250

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NVK.. SVK..

Actuators with fail-safe function NC / NO

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (0.5...10 VDC)	Modulating (2...10 VDC)	MP-Bus® communication	fail-safe function	Nominal voltage AC/DC 24 VC AC 230 V	Actuator type	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]
1000 N	150 s	35 s	•	•				•	24 V	NVK24A-3-TPC	800	800	400	800	800	400
			•	•				•	230 V	NVK230A-3	800	800	400	800	800	400
					•	•	•		24 V	NVK24A-MP-TPC	800	800	400	800	800	400
1500 N	150 s	35 s	•	•				•	24 V	SVK24A-3-TPC*						
			•	•				•	230 V	SVK230-3*						
					•	•	•		24 V	SVK24A-MP-TPC*						

Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]	Δp_s 2-way 3-way Mixing [kPa]	Δp_{max} 2-way 3-way Mixing [kPa]	$\Delta p_s / \Delta p_{max}$ 3-way Diverting [kPa]
800	800	400	600	600	300	550	550	270	450	450	220	300	300	150
800	800	400	600	600	300	550	550	270	450	450	220	300	300	150
800	800	400	600	600	300	550	550	270	450	450	220	300	300	150
									700	700	350	500	500	250
									700	700	350	500	500	250
									700	700	350	500	500	250

* Only available through VC.

Globe valves
4

Globe valves
Flange / 150°C / PN 16

DN 65 – 250

Media	Cold, warm and hot water, water with glycol up to max. 50% vol.
Medium temperature	0...150°C
Pipe connection	Flange PN 16 (ISO 7005-2)
Flow characteristic	A-AB equal percentage / B-AB linear
Leakage rate	Max. 0.02% of k_{VS} value



Closed cold and hot water systems

	DN 65		DN 80		DN 100		DN 125		DN 150		DN 200		DN 250	
2-way	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
	63	H665SP-Q	100	H680SP-R	160	H6100SP-S	250	H6125SP-T	350	H6150SP-T	520	H6200SP-U	700	H6250SP-V



Closed cold and hot water systems

	DN 65		DN 80		DN 100		DN 125		DN 150		DN 200		DN 250	
3-way	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
	63	H765D-Q	100	H780D-R	160	H7100D-S	250	H7125D-T	350	H7150D-T	520	H7200D-U	700	
		H765S-Q		H780S-R		H7100S-S		H7125S-T		H7150S-T		H7200S-U		H7250S-V

Suitable Actuators

Standard actuators



SV..



EV..
RV..

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (0.5...10 VDC)	Modulating (2...10 VDC)	MP-Bus® communication	Fail-safe function	Nominal voltage AC/DC 24 V AC 230 V	Actuator type	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way Mixing [kPa]	Δp_s / Δp_{max} 3-way Diverting [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way [kPa]
1500 N	150 s		•	•					24 V	SV24A-TPC	1600	1000	280	220														
			•	•					230 V	SV230A-TPC	1600	1000	280	220														
					•				24 V	SV24A-SZ-TPC	1600	1000	280	220														
						•	•		24 V	SV24A-MP-TPC	1600	1000	280	220														
2500 N	150 s		•	•					24 V	EV24A-TPC					1600	1000	200	1600	1000	200	1600	1000	110	1600	1000	60	1600	1000			
			•	•					230 V	EV230A-TPC					1600	1000	200	1600	1000	200	1600	1000	110	1600	1000	60	1600	1000			
					•				24 V	EV24A-SZ-TPC					1600	1000	200	1600	1000	200	1600	1000	110	1600	1000	60	1600	1000			
						•	•		24 V	EV24A-MP-TPC					1600	1000	200	1600	1000	200	1600	1000	110	1600	1000	60	1600	1000			
4500 N	150 s				•				24 V	RV24A-SZ					1600	1000	200	1600	1000	200	1600	1000	150	1600	1000	100	1600	1000	80	1600	1000	50
			•	•		•	•		24 V	RV24A-MF					1600	1000	200	1600	1000	200	1600	1000	150	1600	1000	100	1600	1000	80	1600	1000	50

Actuators with fail-safe function NC / NO



SVK..



AVK..
EVK..

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (0.5...10 VDC)	Modulating (2...10 VDC)	MP-Bus® communication	Fail-safe function	Nominal voltage AC/DC 24 V AC 230 V	Actuator type	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way Mixing [kPa]	Δp_s / Δp_{max} 3-way Diverting [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s / Δp_{max} 3-way [kPa]
1500 N	150 s	35 s	•	•				•	24 V	SVK24A-3-TPC*	1600	1000	280	220														
			•	•				•	230 V	SVK230-3*	1600	1000	280	220														
					•	•	•	•	24 V	SVK24A-MP-TPC*	1600	1000	280	220														
2000 N	150 s	35 s	•	•				•	24 V	AVK24AX-3*					1600	1000	200													
			•	•				•	230 V	AVK230A-3					1600	1000	200													
					•	•	•		24 V	AVK24A-MP-TPC					1600	1000	200													
2500 N	150 s	35 s	•	•				•	24 V	EVK24A-3-TPC					1600	1000	200	1600	1000	200	1600	1000	110	1600	1000	60	1600	1000			
			•	•				•	230 V	EVK230A-3					1600	1000	200	1600	1000	200	1600	1000	110	1600	1000	60	1600	1000			
					•	•	•		24 V	EVK24A-MP-TPC					1600	1000	200	1600	1000	200	1600	1000	110	1600	1000	60	1600	1000			

* Only available through VC.

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Continued from previous page

Globe valves
4

Subject to technical modifications

Globe valves
Flange / 2-way / 180°C / PN 25

DN 15 – 50

Media	Cold, hot and steam system Water with glycol up to max. 50% vol.
Medium temperature	0...180°C
Pipe connection	Flange PN 25 (ISO 7005-2)
Flow characteristic	A-AB equal percentage
Leakage rate	Max. 0.01% of k_{VS} value

Suitable Actuators



Closed cold and hot water systems

2-way

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (0.5...10 VDC)	Modulating (2...10 VDC)	MP-Bus® communication	Fail-safe function	Nominal voltage AC/DC 24 V AC 230 V	Actuator type	DN 15 k_{VS} [m³/h]	DN 15 Valve type	DN 20 k_{VS} [m³/h]	DN 20 Valve type	DN 25 k_{VS} [m³/h]	DN 25 Valve type	DN 32 k_{VS} [m³/h]	DN 32 Valve type	DN 40 k_{VS} [m³/h]	DN 40 Valve type	DN 50 k_{VS} [m³/h]	DN 50 Valve type	DN 15 Δp_s [kPa]	DN 15 Δp_{max} [kPa]	DN 20 Δp_s [kPa]	DN 20 Δp_{max} [kPa]	DN 25 Δp_s [kPa]	DN 25 Δp_{max} [kPa]	DN 32 Δp_s [kPa]	DN 32 Δp_{max} [kPa]	DN 40 Δp_s [kPa]	DN 40 Δp_{max} [kPa]	DN 50 Δp_s [kPa]	DN 50 Δp_{max} [kPa]
Standard actuators											4	EXT-TI-H615XS-J	6.3	EXT-TI-H620XS-K	10	EXT-TI-H625XS-L	16	EXT-TI-H632XS-M	25	EXT-TI-H640XSP-N	40	EXT-TI-H650XSP-P												
1000 N	150 s		•	•					24 V	NV24A-TPC													1000	500	1000	400	1000	350	600	300				
			•	•					230 V	NV230A-TPC													1000	500	1000	400	1000	350	600	300				
					•				24 V	NV24A-SZ-TPC													1000	500	1000	400	1000	350	600	300				
						•	•		24 V	NV24A-MP-TPC													1000	500	1000	400	1000	350	600	300				
1500 N	150 s		•	•					24 V	SV24A-TPC																			1000	500	1600	1000	1600	1000
			•	•					230 V	SV230A-TPC																			1000	500	1600	1000	1600	1000
					•				24 V	SV24A-SZ-TPC																			1000	500	1600	1000	1600	1000
						•	•		24 V	SV24A-MP-TPC																			1000	500	1600	1000	1600	1000
Actuators with fail-safe function NC / NO																																		
1000 N	150 s	35 s	•	•				•	24 V	NVK24A-3-TPC													1000	500	1000	400	1000	350	600	300				
			•	•				•	230 V	NVK230A-3													1000	500	1000	400	1000	350	600	300				
						•	•	•	24 V	NVK24A-MP-TPC													1000	500	1000	400	1000	350	600	300				
1500 N	150 s	35 s	•	•				•	24 V	SVK24A-3-TPC*																			1000	500	1600	1000	1600	1000
			•	•				•	230 V	SVK230-3*																			1000	500	1600	1000	1600	1000
						•	•	•	24 V	SVK24A-MP-TPC*																			1000	500	1600	1000	1600	1000



NV..
SV..



NVK..
SVK..

Continued next page

Continued from previous page

* Only available through VC.

Globe valves
4

Globe valves
Flange / 2-way / 180°C / PN 25

DN 65 – 250

Media	Cold, hot and steam system Water with glycol up to max. 50% vol.
Medium temperature	0...180°C
Pipe connection	Flange PN 25 (ISO 7005-2)
Flow characteristic	A-AB equal percentage
Leakage rate	Max. 0.01% of k_{VS} value



Closed cold and hot water systems

2-way	DN 65		DN 80		DN 100		DN 125		DN 150		DN 200		DN 250	
	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type	k_{VS} [m³/h]	Valve type
	63	EXT-TI-H665XSP-Q	100	EXT-TI-H680XSP-R	160	EXT-TI-H6100XSP-S	250	EXT-TI-H6125XSP-T	350	EXT-TI-H6150XSP-T	520	EXT-TI-H6200XSP-U	700	EXT-TI-H6250XSP-V

Suitable Actuators

Standard actuators

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (0.5...10 VDC)	Modulating (2...10 VDC)	MP-Bus® communication	Fail-safe function	Nominal voltage AC/DC 24 V AC 230 V	Actuator type	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
1500 N	150 s		•	•					24 V	SV24A-TPC	1600	1000												
			•	•					230 V	SV230A-TPC	1600	1000												
					•				24 V	SV24A-SZ-TPC	1600	1000												
						•	•		24 V	SV24A-MP-TPC	1600	1000												
2500 N	150 s		•	•					24 V	EV24A-TPC			1600	1000	1600	1000	1600	1000	1600	1000				
			•	•					230 V	EV230A-TPC			1600	1000	1600	1000	1600	1000	1600	1000				
					•				24 V	EV24A-SZ-TPC			1600	1000	1600	1000	1600	1000	1600	1000				
						•	•		24 V	EV24A-MP-TPC			1600	1000	1600	1000	1600	1000	1600	1000				
4500 N	150 s				•				24 V	RV24A-SZ			1600	1000	1600	1000	1600	1000	1600	1000	1600	1000	1600	1000
						•	•		24 V	RV24A-MF			1600	1000	1600	1000	1600	1000	1600	1000	1600	1000	1600	1000



SV..



EV..
RV..

Actuators with fail-safe function NC / NO

Actuating force	Actuating time per nominal stroke	Actuating time for emergency control function	Open-close	3-point	Modulating (0.5...10 VDC)	Modulating (2...10 VDC)	MP-Bus® communication	Fail-safe function	Nominal voltage AC/DC 24 V AC 230 V	Actuator type	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]	Δp_s 2-way [kPa]	Δp_{max} 2-way [kPa]
1500 N	150 s	35 s	•	•				•	24 V	SVK24A-3-TPC*	1600	1000												
			•	•				•	230 V	SVK230-3*	1600	1000												
					•	•	•	•	24 V	SVK24A-MP-TPC*	1600	1000												
2000 N	150 s	35 s	•	•				•	24 V	AVK24AX-3*			1600	1000										
			•	•				•	230 V	AVK230A-3			1600	1000										
					•	•	•	•	24 V	AVK24A-MP-TPC			1600	1000										
2500 N	150 s	35 s	•	•				•	24 V	EVK24A-3-TPC			1600	1000	1600	1000	1600	1000	1600	1000				
			•	•				•	230 V	EVK230A-3			1600	1000	1600	1000	1600	1000	1600	1000				
					•	•	•	•	24 V	EVK24A-MP-TPC			1600	1000	1600	1000	1600	1000	1600	1000				



SVK..



AVK..
EVK..

* Only available through VC.

Continued from previous page
Continued next page

Globe valves
4

Subject to technical modifications

5

Ball valves

Open-close and change-over application

Internal thread	2-way 3-way	PN 25 / PN 40	DN 15 – 50	40
Flange	2-way	PN 16	DN 65 – 150	42

BELIMO

BELIMO

Shut-off and change-over ball valves
Internal thread / PN 25 / PN 40

DN 15 – 50

Media	Cold and hot water with up to max. 50% glycol
Pipe connection	Internal thread Rp (ISO 7-1)
Medium temperature	–10...120°C (small actuators TR..only up to 100°C)
Leakage rate	Control path A–AB: Leakage rate A, air bubble tight (EN 12266-1) / Bypass B–AB: Leakage class I



Closed and open water circuit



Closed water circuit

Continued from previous page

Continued next page

Suitable Actuators

	DN 15			DN 20			DN 25			DN 32			DN 40			DN 50		
2-way	k_{vs} [m³/h]	Valve type		k_{vs} [m³/h]	Valve type		k_{vs} [m³/h]	Valve type		k_{vs} [m³/h]	Valve type		k_{vs} [m³/h]	Valve type		k_{vs} [m³/h]	Valve type	
	15	R2015-S1		15	R2020-S1		26	R2025-S2		32	R2032-S2		32	R2032-S3		31	R2040-S2		31	R2040-S3		49	R2050-S3		49	R2050-S4	
				32	R2020-S2																					
3-way T-bore	k_{vs} [m³/h]	Valve type		k_{vs} [m³/h]	Valve type		k_{vs} [m³/h]	Valve type		k_{vs} [m³/h]	Valve type		k_{vs} [m³/h]	Valve type		k_{vs} [m³/h]	Valve type	
	15	R3015-S1		12	R3020-S1		26	R3025-S2		18	R3032-S2		32	R3032-S3		31	R3040-S3							49	R3050-S4	
				32	R3020-S2																					

Nominal torque	Open-close	3-point	Fail-safe function	Nominal voltage	Running time motor 90°	Running time emergency control function	Actuator type	DN 15 Δp_s [kPa]	DN 15 Δp_{max} [1] [kPa]	DN 20 Δp_s [kPa]	DN 20 Δp_{max} [1] [kPa]	DN 25 Δp_s [kPa]	DN 25 Δp_{max} [1] [kPa]	DN 32 Δp_s [kPa]	DN 32 Δp_{max} [1] [kPa]	DN 40 Δp_s [kPa]	DN 40 Δp_{max} [1] [kPa]	DN 50 Δp_s [kPa]	DN 50 Δp_{max} [1] [kPa]
Small and compact actuators																			
2 Nm	•	•		24 V	100 s		TR24 [2]	1400	350	1400	350								
	•	•		230 V	105 s		TR230-3	1400	350	1400	350								
Standard actuators																			
5 Nm	•	•		24 V	90 s		LR24A					1400	350						
	•	•		230 V			LR230A					1400	350						
10 Nm	•	•		24 V	90 s		NR24A							1400 [3]	350 [3]	1400	350	1400	350
	•	•		230 V			NR230A							1400 [3]	350 [3]	1400	350	1400	350
20 Nm	•	•		24 V	90 s		SR24A											1400	350
	•	•		230 V			SR230A											1400	350
Fast running actuators																			
4 Nm	•			24 V	9 s		LRQ24A	1400	350	1400	350	1400	350						
8 Nm	•			24 V	9 s		NRQ24A							1400 [3]	350 [3]	1400	350		
16 Nm	•			24 V	9 s		SRQ24A											1400	350
Actuators with fail-safe function																			
2.5 Nm	•		•	24 V	75 s	75 s	TRF24 [2]	1400	350	1400	350								
	•		•	230 V	75 s	75 s	TRF230 [2]	1400	350	1400	350								
4 Nm	•		•	24 V	<75 s	<20 s	LRF24 [2]					1400	350						
	•		•	230 V	<75 s	<20 s	LRF230 [2]					1400	350						
Actuators with fail-safe function																			
10 Nm	•		•	AC 24...240 V DC 24...125 V	90 s	<20 s	NRFA							1400 [3]	350 [3]	1400	350	1400	350
20 Nm	•		•	AC 24...240 V DC 24...125 V	90 s	<20 s	SRFA											1400	350

Actuator type without auxiliary switch	with auxiliary switch	DN 15 Δp_s [kPa]	DN 15 Δp_{max} [1] [kPa]	DN 20 Δp_s [kPa]	DN 20 Δp_{max} [1] [kPa]	DN 25 Δp_s [kPa]	DN 25 Δp_{max} [1] [kPa]	DN 32 Δp_s [kPa]	DN 32 Δp_{max} [1] [kPa]	DN 40 Δp_s [kPa]	DN 40 Δp_{max} [1] [kPa]	DN 50 Δp_s [kPa]	DN 50 Δp_{max} [1] [kPa]
Actuator type NC without auxiliary switches	**with auxiliary switch**												
TRF24 [2]	..-S	1400	350	1400	350								
TRF230 [2]	..-S	1400	350	1400	350								
LRF24 [2]	..-S					1400	350						
LRF230 [2]	..-S					1400	350						
Actuator type NC without auxiliary switches	**with 2 auxiliary switches**												
NRFA	..-S2							1400 [3]	350 [3]	1400	350	1400	350
SRFA	..-S2												1400	350



TR..

LR..
NR..
SR..



LRQ..
NRQ..
SRQ..



TRF..



LRF..



NRF..
SRF..

[1] Low-noise operation Δp_{max} = 200 kPa.
[2] If medium temperature ≥100°C, then the line and the valve must be insulated.
[3] Non-spring: using NR... series actuator for application >70°C.
Fast-running: using NRQ... series actuators for application > 70°C.
Spring return: using NFR... series actuators for application > 70°C.

Legend
Recommended model
Optional model

Ball valves
5

Subject to technical modifications

Shut-off and change-over ball valves
Flange / PN 16

DN 65 – 150

Media	Cold and hot water with up to max. 50% glycol
Medium temperature	–5...100°C
Pipe connection	Flange PN 16
Flow characteristic	A-AB, equal percentage
Leakage rate	Leakage rate A, tight (EN 12266-1)

Suitable Actuators



Closed water circuit

2-way

Nominal torque	Open-close	3-point	Fail-safe function	Nominal voltage AC/DC 24 V AC 230 V	Running time motor 90°	Running time emergency control function	Auxiliary switch SPDT	DN 65 k_{vs} [m³/h]	DN 65 Valve type	DN 80 k_{vs} [m³/h]	DN 80 Valve type	DN 100 k_{vs} [m³/h]	DN 100 Valve type	DN 125 k_{vs} [m³/h]	DN 125 Valve type	DN 150 k_{vs} [m³/h]	DN 150 Valve type
								120	R665AO	180	R680AO	230	R6100AO	390	R6125AO	570	R6150AO
Standard actuators								Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]
 SR..	20 Nm	•	•	24 V	90 s			SR24A-5	700	350	700	350						
		•	•	230 V				SR230A-5	700	350	700	350						
 GR..	40 Nm	•		24 V	150 s			GR24A-7					700	350	700	350	400	250
		•		230 V				GR230A-7					700	350	700	350	400	250
Fast running actuators								Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]
 SRQ..AX..	16 Nm	•			24 V	7..15 s		SRQ..AX..-5*	700	350								
Actuators with fail-safe function NC / NO								Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]	Δp_s [kPa]	Δp_{max} [1] [kPa]
 SRF..	20 Nm	•		•	230 V	<75 s	<20 s	SRFA-5	700	350	700	350						
 GRK..		•		•				2 SRFA-S2-5	700	350	700	350						
	40 Nm	•		•	24 V	150 s	35 s	GRK24A-7					700	350	700	350	400	250

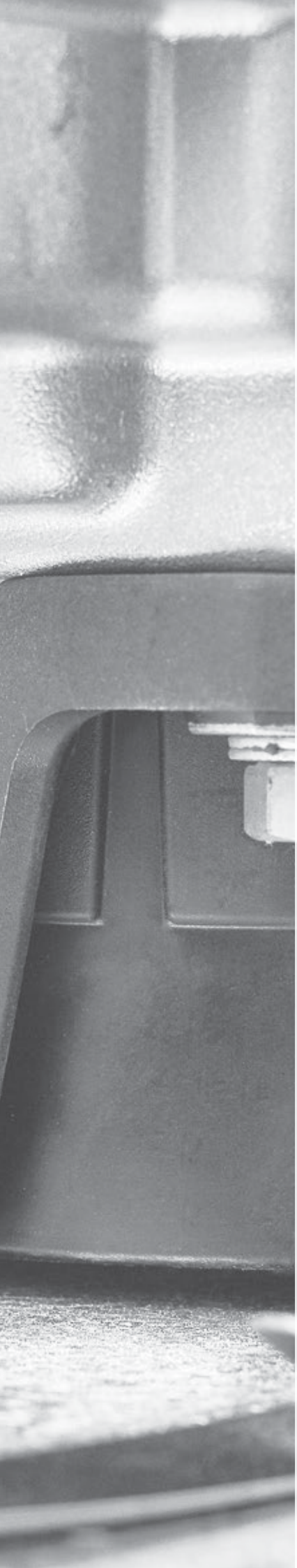
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* Only available via VC.
[1] Low-noise operation Δp_{max} = 200 kPa.

Ball valves
5

Subject to technical modifications



6

Butterfly valves

Open-close, change-over and control applications

2-way flange	Open-close and modulating control of cold and hot water applications	PN 6, 10, 16 / DN 25 – 300	46
		PN 10, 16 / DN 350 – 600	50
		PN 16 / DN 700 – 1200	52
2-way flange	Open-close and modulating control of cold and hot water applications	PN 25 / DN 50-500	54
2-way flange	Open-close and modulating control of sea water and brine applications	PN 16 / DN 50-600	56
2-way flange	Manual operation of cold and hot water applications	PN 6, 10, 16 / DN 25 – 300	60
		PN 10, 16 / DN 350 – 600	
		PN 25 / DN 50 – 500	
		PN 16 / DN 50 – 600	

Butterfly valves
Flange / PN 6, 10, 16

DN 25 – 300

Media	Cold and warm water, water with glycol up to max. 50% vol.
Medium temperature	–20...120°C
Pipe connection	Flange (ISO 7005-2 and EN 1092-2) D6..W / WL additionally: as per ISO 7005-1 and EN 1092-1
Leakage rate	A, tight (EN 12266-1)
PN 6, 10, 16	DN 25 – 300 wafer types
PN 10, 16	DN 25 – 150 lug types
PN 16	DN 200 – 300

		DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
For open-close applications	k_{vmax} [m³/h]	50	55	65	100	170	260	520	880	1400	2200	4200	5700
For control applications	k_{vs} [1] [m³/h]	24	25	27	30	50	75	150	200	400	820	1300	1740
With wafer type flanges		BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type
		D625N	D632N	D640N	D650N	D665N	D680N	D6100N	D6125N	D6150N	D6200W	D6250W	D6300W
With lug type flanges		BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type
		D625NL	D632NL	D640NL	D650NL	D665NL	D680NL	D6100NL	D6125NL	D6150NL	D6200WL	D6250WL	D6300WL

Suitable Actuators

Standard actuators

	Nominal torque	Open-close	3-point	Modulating	Terminal connection	Nominal voltage AC/DC 24 V AC 230 V	Running time motor 90°	Auxiliary switch SPDT	IP rating	Actuator type open-close / 3-point	Modulating (0/2...10 VDC)	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
 SR..	20 Nm	•	•	•		24 V	90 s		IP 54	SR24A-5	SR24A-SR-5	1200	1200	1200							
				•		230 V			IP 54	SR230A-5	SR230A-SR-5	1200	1200	1200							
				•		24 V			IP 66/67	SR24P-5	SR24P-SR-5	1200	1200	1200							
						230 V			IP 66/67	SR230P-5		1200	1200	1200							
 GR..	40 Nm	•		•		24 V	150 s		IP 54	GR24A-5	GR24A-SR-5	1200	1200	1200	1200						
						230 V			IP 54	GR230A-5		1200	1200	1200	1200						
						230 V			IP 54	GR230A-5-CA[2]						1000					
				•	•	24 V			IP 66/67	GR24G-T-5	GR24G-MF-T-5	1200	1200	1200	1200						
					•	230 V			IP 66/67	GR230G-T-5		1200	1200	1200	1200						
 DR..	<90 Nm	•		•		24 V	150 s		IP 54	DR24A-5	DR24A-SR-5 DR24A-MP-5				1200	1200					
						230 V			IP 54	DR230A-5					1200	1200					
				•	•	24 V			IP 66/67	DR24G-T-5	DR24G-MF-T-5				1200	1200					
					•	230 V			IP 66/67	DR230G-T-5					1200	1200					
				•		24 V			IP 54	DR24A-7	DR24A-SR-7 DR24A-MP-7						1200				
						230 V			IP 54	DR230A-7							1200				
						230 V			IP 54	DR230A-7-CA[2]								1000			
				•	•	24 V			IP 66/67	DR24G-T-7	DR24G-MF-T-7						1200				
					•	230 V			IP 66/67	DR230G-T-7							1200				

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[1] With opening angle 60%
[2] Cold water applications only

Butterfly valves
6

Subject to technical modifications

Butterfly valves
Flange / PN 6, 10, 16

DN 25 – 300

Media	Cold and warm water, water with glycol up to max. 50% vol.
Medium temperature	–20...120°C
Pipe connection	Flange (ISO 7005-2 and EN 1092-2) D6..W / WL additionally: as per ISO 7005-1 and EN 1092-1
Leakage rate	A, tight (EN 12266-1)
PN 6, 10, 16	DN 25 – 300 wafer types
PN 10, 16	DN 25 – 150 lug types
PN 16	DN 200 – 300

		DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
For open-close applications	k_{vmax} [m³/h]	50	55	65	100	170	260	520	880	1400	2200	4200	5700
For control applications	k_{vs}* [m³/h]	24	25	27	30	50	75	150	260	400	820	1300	1740
With wafer type flanges		BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type
		D625N	D632N	D640N	D650N	D665N	D680N	D6100N	D6125N	D6150N	D6200W	D6250W	D6300W
With lug type flanges		BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type	BV type
		D625NL	D632NL	D640NL	D650NL	D665NL	D680NL	D6100NL	D6125NL	D6150NL	D6200WL	D6250WL	D6300WL

Suitable Actuators

Fast Runners

	Nominal torque	Open-close	3-point	Modulating	Terminal connection	Fail-safe function	Nominal voltage	Running time motor 90°	Auxiliary switch SPDT	IP rating	Actuator type open-close / 3-point	Modulating (0/2...10 VDC)	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
 GRC..	40 Nm	•		•			24 V	35 s		IP 54	GRC24A-5		1200	1200	1200	1200	1200					
				•			230 V			IP 54	GRC230A-5	GRC230A-SR-TP-5	1200	1200	1200	1200						
				•	•		24 V			IP 66/67	GRC24G-5	GRC24G-MF-T-5 GRC24G-SZ-T-5	1200	1200	1200	1200						
				•			230 V			IP 66/67	GRC230G-5	GRC230G-SR-TP-5	1200	1200	1200	1200						
							230 V			IP 66/67	GRC230G-5-CA[9]						1000					
 DRC..							24 V			IP 54	DRC24A-5					1200	1200					
							230 V			IP 54	DRC230A-5					1200	1200					
				•	•		24 V			IP 66/67	DRC24G-5	DRC24G-MF-T-5				1200	1200					
							230 V			IP 66/67	DRC230G-5					1200	1200					
	<90 Nm	•					24 V	35 s		IP 54	DRC24A-7							1200				
							230 V			IP 54	DRC230A-7							1200				
				•	•		24 V			IP 66/67	DRC24G-7	DRC24G-MF-T-7						1200				
							230 V			IP 66/67	DRC230G-7							1200				
							230 V			IP 66/67	DRC230G-7-CA[9]								1000			
 PRCA..	160 Nm	•	•	•	•		AC 24…240 V DC 24…125 V	35 s	2	IP 66/67	PRCA-S2-T	PRCA-BAC-S2-T					1200 [1]	1200 [2]	1200 [2]			1400 [2]
							AC 24…240 V DC 24…125 V		2	IP 66/67	PRCA-S2-T-200	PRCA-BAC-S2-T-200								1400 [2]		
							AC 24…240 V DC 24…125 V		2	IP 66/67	PRCA-S2-T-250	PRCA-BAC-S2-T-250									1400 [2]	

Actuator with fail-safe function NC / NO

	Nominal torque	Open-close	3-point	Modulating	Terminal connection	Fail-safe function	Nominal voltage	Running time motor 90°	Auxiliary switch SPDT	IP rating	Actuator type open-close / 3-point	Modulating (0/2...10 VDC)	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
 SRFA..	20 Nm	•			•	•	24 V	75 s		IP 54	SRF24A-5	SRF24A-SR-5	1200	1200	1200							
					•	•	24 V		2	IP 54	SRF24A-S2-5	SRF24A-SR-S2-5	1200	1200	1200							
 GRK..						•	AC 24…240 V DC 24…125 V			IP 54	SRFA-5		1200	1200	1200							
						•	AC 24…240 V DC 24…125 V		2	IP 54	SRFA-S2-5		1200	1200	1200							
 DRK..	40 Nm	•		•		•	24 V	150 s		IP 54	GRK24A-5	GRK24A-MF-5	1200	1200	1200	1200						
	<90 Nm	•				•	24 V	150 s		IP 54	DRK24A-5					1200	1200					
											DRK24A-7							1200				
 PRKCA..	160 Nm	•	•	•	•	•	AC 24…240 V DC 24…125 V	35 s	2	IP 66/67	PRKCA-BAC-S2-T	PRKCA-BAC-S2-T					1200 [1]	1200 [2]	1200 [2]			1400 [2]
							AC 24…240 V DC 24…125 V		2	IP 66/67	PRKCA-BAC-S2-T-200	PRKCA-BAC-S2-T-200								1400 [2]		
							AC 24…240 V DC 24…125 V		2	IP 66/67	PRKCA-BAC-S2-T-250	PRKCA-BAC-S2-T-250									1400 [2]	

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[1] Linkage: ZPR03
[2] Linkage: ZPR01
[3] Linkage: ZSY-703
[4] Linkage: ZSY-401
[5] Linkage: ZSY-701
[6] Linkage: ZSY-702
[7] Linkage: ZSY-901
[8] Linkage: ZSY-902
[9] Cold water applications only

* With opening angle 60%

Butterfly valves
6

DN 350 – 600

Media	Cold and warm water, water with glycol up to max. 50% vol.
Medium temperature	–20...120°C
Pipe connection	Flange (ISO 7005-2 and EN 1092-2)
Leakage rate	A, tight (EN 12266-1)
PN 16	DN 350 – 600

		DN 350	DN 400	DN 450	DN 500	DN 600
For open-close applications	k_{vmax} [m³/h]	10300	14200	18800	24100	37300
For control applications	k_{vs}* [m³/h]	3010	4140	5490	7060	10900
With wafer type flanges		BV type D6350N	BV type D6400N	BV type D6450N	BV type D6500N	BV type D6600N
With lug type flanges		BV type D6350NL	BV type D6400NL	BV type D6450NL	BV type D6500NL	BV type D6600NL

Suitable Actuators

Fast runners	Nominal torque	Open-close	3-point	Modulating	Terminal connection	Nominal voltage 230 V AC	Running time motor 90°	Auxiliary switch SPDT	IP rating	Actuator type open-close / 3-point	Modulating (0/2...10 VDC)	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
SY..	650 Nm	•	•	•	•	230 V	31 s	2	IP 67	SY6-230-3-T	SY6U230-MF-T	600	600 [4]			
	1000 Nm	•	•	•	•	230 V	55 s	2	IP 67	SY7-230A-3-T	SY7-230A-MF-T	1200 [3]	1200 [5]	600 [6]		
	1500 Nm	•	•	•	•	230 V	55 s	2	IP 67	SY8-230A-3-T	SY8-230A-MF-T			1200 [6]	600 [6]	
	2000 Nm	•	•	•	•	230 V	70 s	2	IP 67	SY9-230A-3-T	SY9-230A-MF-T				1200 [7]	
	2500 Nm	•	•	•	•	230 V	70 s	2	IP 67	SY10-230A-3-T	SY10-230A-MF-T					600 [8]
	3500 Nm	•	•	•	•	230 V	70 s	2	IP 67	SY12-230A-3-T	SY12-230A-MF-T					1000 [8]

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* With opening angle 60%

[1] Linkage: ZPR03
[2] Linkage: ZPR01
[3] Linkage: ZSY-703
[4] Linkage: ZSY-401
[5] Linkage: ZSY-701
[6] Linkage: ZSY-702
[7] Linkage: ZSY-901
[8] Linkage: ZSY-902

Subject to technical modifications

Butterfly valves
Flange / PN 16

DN 700 – 1200

Media	Cold and warm water, water with glycol up to max. 50% vol.
Medium temperature	–20...120°C
Pipe connection	Flange (ISO 7005-2 and EN 1092-2)
Leakage rate	A, tight (EN 12266-1)
PN 16	DN 700 – 1200

Suitable Actuators

		DN 700	DN 800	DN 900	DN 1000	DN 1200
For open-close applications	k_{vmax} [m³/h]	63245	84970	97290	115770	177740
For control applications	k_{vs}* [m³/h]	9155	11510	16200	20325	29710
With wafer type flanges	BV type	EXT-HH-D6700D	EXT-HH-D6800D	EXT-HH-D6900D	EXT-HH-D61000D	EXT-HH-D61200D





EXT...

Fast runners	Nominal torque	Open-close	3-point	Modulating	Terminal connection	Nominal voltage	Running time motor 90°	Auxiliary switch SPDT	IP rating	Actuator type open-close / 3-point	Modulating (0/2...10 VDC)	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
	5000 Nm	•		•	•	AC 380 V	75 s	4	IP 67	EXT-HH-9032/4025	EXT-HH-9032CP/4025	1000				
	10000 Nm	•		•	•	AC 380 V	75 s	4	IP 67	EXT-HH-9033/4026	EXT-HH-9033CP/4026		1000			
	20000 Nm	•		•	•	AC 380 V	75 s	4	IP 67	EXT-HH-9034/4027	EXT-HH-9034CP/4027			1000	1000	1000

* With opening angle 60%

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Butterfly valves
6

Butterfly valves
Flange / PN 25

DN 50 – 500

Media	Cold and hot water with glycol up to max. 50% vol.
Medium temperature	–20...120°C
Pipe connection	Flange (ISO 7005-2)
Leakage rate	Rate A Bubble tight (ISO 5208)
PN 25	DN 50 – 500 lug types

Suitable Actuators

		DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500
For open-close applications	k_{vmax} [m³/h]	80	155	260	410	780	1350	2575	3825	6030	7505	9720	12775	16785
For control applications	k_{vs}* [m³/h]	60	95	145	160	345	540	865	1280	1815	2225	3205	4090	5180
With lug type flanges		BV type EXT-HH-D650H	BV type EXT-HH-D665H	BV type EXT-HH-D680H	BV type EXT-HH-D6100H	BV type EXT-HH-D6125H	BV type EXT-HH-D6150H	BV type EXT-HH-D6200H	BV type EXT-HH-D6250H	BV type EXT-HH-D6300H	BV type EXT-HH-D6350H	BV type EXT-HH-D6400H	BV type EXT-HH-D6450H	BV type EXT-HH-D6500H

Nominal torque	Open-close	3-point	Modulating	Terminal connection	Fail-safe function	Nominal voltage	Running time motor 90°	Auxiliary switch SPDT	IP Rate	Actuator type open-close / 3-point	Modulating (0/2...10 VDC)	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]
Standard actuators																						
40 Nm	•		•			24 V	150 s		IP 54	GR24A-5	GR24A-SR-5	2200	2200	2200	2200	2200	2200	2200	2200			
						230 V			IP 54	GR230A-5		2200	2200	2200	2200	2200	2200	2200	2200			
			•	•		24 V			IP 66/67	GR24G-T-5	GR24G-MF-T-5	2200	2200	2200	2200	2200	2200	2200	2200			
				•		230 V			IP 66/67	GR230G-T-5		2200	2200	2200	2200	2200	2200	2200	2200			
5000 Nm	•		•			AC 380 V	75 s	4	IP 67	EXT-HH-9032/4025	EXT-HH-9032CP/4025									2200	2200	
10000 Nm	•		•			AC 380 V	75 s	4	IP 67	EXT-HH-9033/4026	EXT-HH-9033CP/4026											2200
Fast runners										Actuator type open-close / 3-point	Modulating (0/2...10 VDC)	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]
40 Nm	•		•			24 V	35 s		IP 54	GRC24A-5		2200	2200	2200	2200	2200	2200	2200	2200			
			•			230 V			IP 54	GRC230A-5	GRC230A-SR-TP-5	2200	2200	2200	2200	2200	2200	2200	2200			
			•			24 V			IP 66/67	GRC24G-5	GRC24G-MF-T-5 GRC24G-SZ-T-5	2200	2200	2200	2200	2200	2200	2200	2200			
			•			230 V			IP 66/67	GRC230G-5	GRC230G-SR-TP-5	2200	2200	2200	2200	2200	2200	2200	2200			
160 Nm	•	•	•	•		AC 24…240 V DC 24…125 V	35 s	2	IP 66/67	PRCA-S2-T	PRCA-BAC-S2-T		2200 [1]	2200 [2]								
400 Nm	•	•	•	•		24 V	30 s	2	IP 67	SY4-24-3-T	SY4U24-MF-T				2200	2200						
650 Nm	•	•	•	•		230 V	18 s	2	IP 67	SY4-230-3-T	SY4U230-MF-T				2200	2200						
1500 Nm	•	•	•	•		230 V	31 s	2	IP 67	SY6-230-3-T	SY6U230-MF-T						2200					
2500 Nm	•	•	•	•		230 V	55 s	2	IP 67	SY8-230A-3-T	SY8-230A-MF-T							2200 [3]				
							70 s	2		SY10-230A-3-T	SY10-230A-MF-T								2200 [4]			
Actuators with fail-safe function NC / NO										Actuator type open-close / 3-point	Modulating (0/2...10 VDC)	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]	Δp$_s$ [kPa]
40 Nm	•		•		•	24 V	150 s		IP 54	GRK24A-5	GRK24A-MF-5	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
160 Nm	•	•	•	•	•	AC 24…240 V DC 24…125 V	35 s	2	IP 66/67	PRKCA-BAC-S2-T	PRKCA-BAC-S2-T		2200 [1]	2200 [2]								

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* With opening angle 60%
1) Linkage: ZPR03
2) Linkage: ZPR01
3) Linkage: ZSY-702
4) Linkage: ZSY-901

Butterfly valves
6

DN 50 – 600

Media	Sea water and brine
Medium temperature	Aluminium Bronze disc: -10...+80°C
Pipe connection	Flange (ISO 7005-2)
Leakage rate	Rate A Bubble tight (ISO 5208)
PN 16	DN 50 – 600 wafer types

Suitable Actuators



With wafer type flanges

Standard actuators

	Nominal torque	Open-close	3-point	Modulating	Terminal connection	Nominal voltage	Running time motor 90°	Auxiliary switch SPDT	IP Rate	Actuator type open-close / 3-point	Modulating (0/2...10 VDC)	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
										For open-close applications	k_{vmax} [m³/h]	85	170	280	535	750	1585	2645	4020	7355	7935	9735	12790	16800	26085
										For control applications	k_{vs}* [m³/h]	40	70	95	200	225	415	785	1340	1605	2215	3225	4100	5200	7615
											BV type	EXT-HH-D650AB	EXT-HH-D665AB	EXT-HH-D680AB	EXT-HH-D6100AB	EXT-HH-D6125AB	EXT-HH-D6150AB	EXT-HH-D6200AB	EXT-HH-D6250AB	EXT-HH-D6300AB	EXT-HH-D6350AB	EXT-HH-D6400AB	EXT-HH-D6450AB	EXT-HH-D6500AB	EXT-HH-D6600AB
												Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]	Δp_s [kPa]
 SR..	20 Nm	•	•	•		24 V	90 s		IP 54	SR24A-5	SR24A-SR-5	1200													
				•		230 V			IP 54	SR230A-5	SR230A-SR-5	1200													
				•		24 V			IP 66/67	SR24P-5	SR24P-SR-5	1200													
						230 V			IP 66/67	SR230P-5		1200													
 GR..	40 Nm	•		•		24 V	150 s		IP 54	GR24A-5	GR24A-SR-5		1200												
						230 V			IP 54	GR230A-5			1200												
				•	•	24 V			IP 66/67	GR24G-T-5	GR24G-MF-T-5		1200												
					•	230 V			IP 66/67	GR230G-T-5			1200												
 DR..	<90 Nm	•		•		24 V	150 s		IP 54	DR24A-5	DR24A-SR-5 DR24A-MP-5			1200	1200										
						230 V			IP 54	DR230A-5				1200	1200										
				•	•	24 V			IP 66/67	DR24G-T-5	DR24G-MF-T-5			1200	1200										
					•	230 V			IP 66/67	DR230G-T-5				1200	1200										
				•		24 V			IP 54	DR24A-7	DR24A-SR-7 DR24A-MP-7					1200									
						230 V			IP 54	DR230A-7						1200									
				•	•	24 V			IP 66/67	DR24G-T-7	DR24G-MF-T-7					1200									
					•	230 V			IP 66/67	DR230G-T-7						1200									
 EXT...	5000 Nm	•		•	•	AC 380 V	75 s	4	IP 67	EXT-HH-9032/4025	EXT-HH-9032CP/4025														1200

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* With opening angle 60%

Butterfly valves 6

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Butterfly valves
Flange / PN 16

DN 50 – 600

Media	Sea water and brine
Medium temperature	Aluminium Bronze disc: -10...+80°C
Pipe connection	Flange (ISO 7005-2)
Leakage rate	Rate A Bubble tight (ISO 5208)
PN 16	DN 50 – 600 wafer types

Suitable Actuators

		DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
For open-close applications	k_{vmax} [m³/h]	85	170	280	535	750	1585	2645	4020	7355	7935	9735	12790	16800	26085
For control applications	k_{vs}* [m³/h]	40	70	95	200	225	415	785	1340	1605	2215	3225	4100	5200	7615
With wafer type flanges		BV type EXT-HH-D650AB	BV type EXT-HH-D665AB	BV type EXT-HH-D680AB	BV type EXT-HH-D6100AB	BV type EXT-HH-D6125AB	BV type EXT-HH-D6150AB	BV type EXT-HH-D6200AB	BV type EXT-HH-D6250AB	BV type EXT-HH-D6300AB	BV type EXT-HH-D6350AB	BV type EXT-HH-D6400AB	BV type EXT-HH-D6450AB	BV type EXT-HH-D6500AB	BV type EXT-HH-D6600AB



Nominal torque	Open-close	3-point	Modulating	Terminal connection	Fail-safe function	Nominal voltage	Running time motor 90°	Auxiliary switch SPDT	IP Rate	Actuator type open-close / 3-point	Modulating (0/2...10 VDC)	Δps [kPa]	Δps [kPa]	Δps [kPa]	Δps [kPa]	Δps [kPa]	Δps [kPa]	Δps [kPa]	Δps [kPa]	Δps [kPa]	Δps [kPa]	Δps [kPa]	Δps [kPa]
Fast runners																							
20 Nm			•			24 V	35 s		IP 54		SRC24A-SR-5	1200											
40 Nm	•		•			24 V	35 s		IP 54	GRC24A-5			1200										
			•			230 V	35 s		IP 54	GRC230A-5	GRC230A-SR-TP-5		1200										
			•	•		24 V	35 s		IP 66/67	GRC24G-5	GRC24G-MF-T-5 GRC24G-SZ-T-5		1200										
			•			230 V	35 s		IP 66/67	GRC230G-5	GRC230G-SR-TP-5		1200										
<90 Nm	•					24 V	35 s		IP 54	DRC24A-5				1200									
						230 V	35 s		IP 54	DRC230A-5				1200									
			•	•		24 V	35 s		IP 66/67	DRC24G-5	DRC24G-MF-T-5			1200									
						230 V	35 s		IP 66/67	DRC230G-5				1200									
						24 V	35 s		IP 54	DRC24A-7					1200								
						230 V	35 s		IP 54	DRC230A-7					1200								
			•	•		24 V	35 s		IP 66/67	DRC24G-7	DRC24G-MF-T-7				1200								
						230 V	35 s		IP 66/67	DRC230G-7					1200								
160 Nm	•	•	•	•		AC 24…240 V DC 24…125 V	35 s	2	IP 66/67	PRCA-S2-T	PRCA-BAC-S2-T			1200 [1]	1200 [1]								
400 Nm	•	•	•	•		24 V	30 s	2	IP 67	SY4-24-3-T	SY4U24-MF-T					1200	1200						
						230 V	18 s	2	IP 67	SY4-230-3-T	SY4U230-MF-T					1200	1200						
1000 Nm	•	•	•	•		230 V	55 s	2	IP 67	SY7-230A-3-T	SY7-230A-MF-T							1200 [2]					
1500 Nm	•	•	•	•		230 V	55 s	2	IP 67	SY8-230A-3-T	SY8-230A-MF-T								1200 [3]				
2000 Nm	•	•	•	•		230 V	70 s	2	IP 67	SY9-230A-3-T	SY9-230A-MF-T									1200 [4]			
2500 Nm	•	•	•	•		230 V	70 s	2	IP 67	SY10-230A-3-T	SY10-230A-MF-T										1200 [4]		
Actuators with fail-safe function NC / NO																							
			•	•		24 V	75 s		IP 54	SRF24A-5	SRF24A-SR-5	1200											
			•	•		24 V	75 s	2	IP 54	SRF24A-S2-5	SRF24A-SR-S2-5	1200											
20 Nm	•			•		AC 24…240 V DC 24…125 V	75 s		IP 54	SRFA-5		1200											
				•		AC 24…240 V DC 24…125 V	75 s	2	IP 54	SRFA-S2-5		1200											
40 Nm	•		•	•		24 V	150 s		IP 54	GRK24A-5	GRK24A-MF-5		1200										
<90 Nm	•			•		24 V	150 s		IP 54	DRK24A-5				1200									
				•		24 V	150 s		IP 54	DRK24A-7					1200								
160 Nm	•	•	•	•	•	AC 24…240 V DC 24…125 V	35 s	2	IP 66/67	PRKCA-BAC-S2-T	PRKCA-BAC-S2-T			1200 [1]	1200 [1]								

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[1] Linkage: ZPR01
[2] Linkage: ZSY-703
[3] Linkage: ZSY-701
[4] Linkage: ZSY-901

* With opening angle 60%

Butterfly valves
6

Subject to technical modifications

DN 50 – 600

Media	Cold and warm water, water with glycol up to 50% vol.
Pipe connection	Flange (ISO 7005-2 and EN 1092-2) D6..W / WL additionally: as per ISO 7005-1 and EN 1092-1
Medium temperature	–20...120°C
Leakage rate	A, tight (EN 12266-1)
PN 6, 10, 16	DN 25 – 300 wafer types
PN 10, 16	DN 25 – 150 lug types
PN 16	DN 200 – 300





Suitable Manual Handles and Worm Gears	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
With wafer type flanges	D650N	D665N	D680N	D6100N	D6125N	D6150N	D6200W	D6250W	D6300W	D6350N	D6400N	D6450N	D6500N	D6600N
With lug type flanges	D650NL	D665NL	D680NL	D6100NL	D6125NL	D6150NL	D6200WL	D6250WL	D6300WL	D6350NL	D6400NL	D6450NL	D6500NL	D6600NL
Handle														
ZD6N-H100	•	•	•	•										
ZD6N-H150					•	•								
Worm Gear														
ZD6N-S100	•	•	•	•										
ZD6N-S150					•	•	•	•	•					
ZD6N-S350										•				
ZD6N-S400											•			
ZD6N-S450												•		
ZD6N-S500													•	
ZD6N-S600														•

DN 50 – 500

Media	Cold and hot water, Max. 50% glycol
Pipe connection	Flange (ISO 7005-2)
Medium temperature	–20...120°C
Leakage rate	Rate A Bubble tight (ISO 5208)
PN 25	DN 50 – 500 lug types





Suitable Manual Handles and Worm Gears	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500
With lug type flanges	EXT-HH-D650H	EXT-HH-D665H	EXT-HH-D680H	EXT-HH-D6100H	EXT-HH-D6125H	EXT-HH-D6150H	EXT-HH-D6200H	EXT-HH-D6250H	EXT-HH-D6300H	EXT-HH-D6350H	EXT-HH-D6400H	EXT-HH-D6450H	EXT-HH-D6500H
Handle													
ZD6N-H100	•	•	•	•									
ZD6N-H150					•	•							
Worm Gear													
ZD6N-S100	•	•	•	•									
ZD6N-S150					•	•	•	•	•				
ZD6N-S350										•			
ZD6N-S400											•		
ZD6N-S450												•	
ZD6N-S500													•
ZD6N-S600												•	•
ZN6N-S700													

DN 50 – 600

Media	Sea water and brine
Pipe connection	Flange (ISO 7005-2)
Medium temperature	Aluminium Bronze disc: -10...+80°C
Leakage rate	Rate A Bubble tight (ISO 5208)
PN 16	DN 50 – 600 wafer types





Suitable Manual Handles and Worm Gears	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
With lug type flanges	EXT-HH-D650AB	EXT-HH-D665AB	EXT-HH-D680AB	EXT-HH-D6100AB	EXT-HH-D6125AB	EXT-HH-D6150AB	EXT-HH-D6200AB	EXT-HH-D6250AB	EXT-HH-D6300AB	EXT-HH-D6350AB	EXT-HH-D6400AB	EXT-HH-D6450AB	EXT-HH-D6500AB	EXT-HH-D6600AB
Handle														
ZD6N-H100	•	•	•	•										
ZD6N-H150					•	•								
Worm Gear														
ZD6N-S100	•	•	•	•										
ZD6N-S150					•	•								
ZD6N-S350								•	•	•				
ZD6N-S400											•			
ZD6N-S450												•		
ZD6N-S500													•	
ZD6N-S600														•

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Subject to technical modifications

Subject to technical modifications

k_v

The flow coefficient k_v [m^3/h] is the specific volume flow of a valve at a defined positioning angle with reference to 100 kPa (1 bar). The k_v value changes, depending on the valve position.
The flow coefficient is determined at a water temperature of 5…40°C.

k_{vs}

The kv value in reference to the nominal positioning angle is referred to as the kvs value.
The nominal positioning angle defines the maximum valve opening and is specified by the manufacturer.

Characterised control valve (CCV):	Flow coefficient at 100% valve opening (90° angle of rotation)
Zone valve (QCV):	Flow coefficient at respective position of the end stop clip (adjustable)
Globe valves:	Flow coefficient at 100% valve opening
Butterfly valves:	Flow coefficient at 60% valve opening for standard application

$$k_{VS} = \frac{\dot{V}_{100}}{\sqrt{\frac{\Delta p_{v100}}{100}}}$$

Δp_{v100}	[kPa]
$\dot{V}_{100}$	[m^3/h]
k_{vs}	[m^3/h]

k_{vmax}

Flow coefficient for 100% opened butterfly valve for open-close and change-over application.

$\dot{V}_{nom}$

Greatest possible flow rate of a pressure-independent valve, catalogue value, status upon delivery.

$\dot{V}_{max}$

Maximum flow rate of a pressure-independent valve which has been set with the greatest positioning signal, e.g. 10 V.

Δp_{max}

Maximum permitted pressure difference for long service life across control path A-AB with respect to the whole range of opening.

Δp_s

Maximum closing pressure at which the valve can still seal the fitting tightly in terms of the respective leakage class.

Subject to technical modifications

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 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



BELIMO Actuators Ltd.
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EN – 06.2021 – Subject to technical modifications



Technology That Saves Lives.

Fire and Smoke Damper Actuators

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BELIMO

Belimo is the worldwide leader in fire and smoke actuation



Belimo is the global market leader in life safety actuators due to our industry expertise and continuous innovations that have increased safety levels in buildings over the past decades. Life safety actuators are UL tested and listed with all major damper manufacturers. They exceed required building codes resulting in reduced risk and ensuring proper protection.

- Lowest power consumption life safety actuators available in the market
- ISO 9001 certified quality control and a 5-year warranty assure reliable operation with exceptional customer support
- Complaint with life safety codes and standards



Protecting lives and assets

Effective fire protection saves lives in the case of emergency, helps minimize property damage, and secures continued operation. The best protection against the spread of fire and smoke through air ducts is provided by motorized fire and smoke dampers to create fire compartments. Belimo fire and smoke damper actuators automatically move into their safety positions to keep the dampers closed during a fire. Belimo fire and smoke damper actuators are designed for operation in smoke and combination fire and smoke dampers in ventilation and air conditioning systems with a torque range from 18 in-lbs to 180 in-lbs at 350°F. For maximum safety, fire and smoke actuators meet all codes for commercial buildings.

Proven Reliability

Built from the highest quality materials, Belimo fire and smoke actuators ensure reliable performance in extreme conditions.

Low Power Consumption

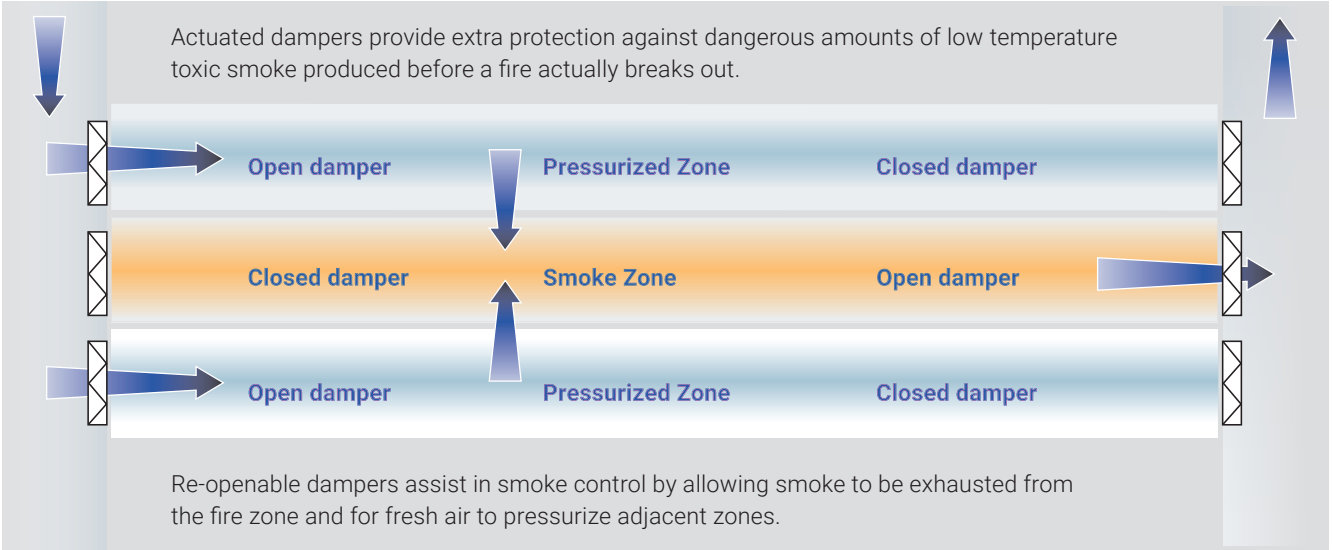
Belimo's microcontrollers allow motors to deliver high torque at low current draw while running cooler for a longer service life.

Optimized Functionality

Belimo actuators can be controlled from a central location and integrated into safety systems allowing for a relatively smoke free environment for occupants to efficiently exit and firefighters to enter.

"Belimo makes HVAC control devices that we can trust and provide a long lasting system for our clients."

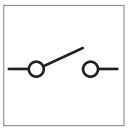
Matt Paonessa, Project Engineer
Andersen Construction, Seattle, WA



Optimized functionality for maximum safety



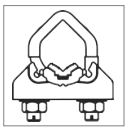
Steel spring assembly
Pretensioned, heat-resistant steel spring assembly closes damper without loss of torque at elevated temperatures.



Auxiliary switches
Available in various configurations, switches signal damper position for testing in smoke control systems and where indicator lights are required.



Linkage kit
Linkage supports indirect mounting or pneumatic retrofit projects.



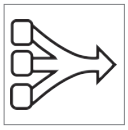
Steel-toothed, cold-weld clamp
Low thermal expansion coefficient steel clamp is the safest way to hold damper shafts without slipping.



UL certified
Actuators exceed all UL requirements and are tested and qualified according to UL 2043 for use in air plenums as per IMC 602.2 and NEC 300.22 (c).



Gear boxes
Reliable performance with no fretting, corrosion, or peeling in extreme conditions.



Modulating models
Allows three dampers to be replaced by one – fire, smoke, and control.



Long service life
Actuators are designed for 30,000 safety cycles at the rated load, exceeding the legal minimum requirements.



Testing
Life cycle tests with rated load, 250°F and 350°F cycle test, input voltage, and functional tests to ensure fail-safe operation.



Maintenance free
Actuator does not need to be periodically cycled.

Fire and smoke damper actuator specification

Smoke and combination fire and smoke actuators in section 233300, or equivalent

1. All smoke and combination fire and smoke dampers shall be provided with Belimo Aircontrols FS series actuators. Equivalents shall be approved before submission of bid. Acceptable actuators include FSTF, FSLF, FSNF, FSAF (A or B).
2. Actuators shall be UL 873 or UL 60730 listed.
3. Actuator and damper shall have UL 555 & UL 555S listing by the manufacturer for 250°F <350°F>.
4. Actuators shall be UL2043 listed for low smoke generation in environmental air spaces and air moving plenums as required by NFPA 70 Section 300.22 (C) and the International Mechanical Code Section 602. Housing shall be steel or plastic; aluminum is not permitted.
5. Actuators shall have a manufacturer's 5-year warranty and be manufactured under ISO 9001 quality control. For replacement of existing competitor motors, NYC OTCR or CSFM listing shall have been obtained.
6. Actuators shall have electronic or microcontroller-based motor control providing:
   a. Electronic cut off at full open so that no noise is generated while holding open. Holding noise level must be inaudible.
   b. Overload protection so that the actuators are incapable of burning out if stalled before reaching full rotation.
7. The actuators shall be directly coupled and employ a steel-toothed cold-weld V-bolt clamp for connecting to damper shafts. Aluminum clamps or set-screw attachment are not permitted.
8. Where direct coupling is impossible due to space constraints or geometry of damper installation, linkages designed specifically for the actuator shall be employed.
9. Dampers shall be installed straight and true, level in all planes, and square in all dimensions. Dampers shall move freely without undue stress due to twisting, racking, bowing, or other installation error. Do not install in areas where moisture can penetrate damper or actuator or where actuator temperature continuously exceeds 120°F.
10. Modulating or balancing damper actuators shall have FSAFB24-SR, 2-10V or 4-20mA control with an appropriate potentiometer or analog output from building automation system.

MASTER FORMAT

– Section 23 33 13.28 - Smoke Control Dampers

– Section 23 33 33.29 - Combination Fire and Smoke Dampers



Uncompromised safety

	Model #	Power Supply			Power Consumption	Running Time		Control Input	Auxiliary Switches	
		24 VAC/DC	120 VAC	230 VAC	VA Rating Running	Motor Drive	Fail-Safe	On/Off	2 SPST	2 SPDT
 FSAF*A Series 180 in-lbs [20 Nm] Approx. 18 sq. ft. @ 350°F	FSAF24A	■			32*	<25	<15	■		
	FSAF24A-S	■			32*	<25	<15	■	■	
	FSAF120A		■		38*	<25	<15	■		
	FSAF120A-S		■		38*	<25	<15	■	■	
	FSAF230A			■	37*	<25	<15	■		
	FSAF230A-S			■	37*	<25	<15	■	■	
 FSAFB Series 180 in-lbs [20 Nm] Approx. 18 sq. ft. @ 250°F	FSAFB24-SR	■			9	<75	<20	2-10 VDC		
	FSAFB24-SR-S	■			9	<75	<20	2-10 VDC		■
 FSNF Series 70 in-lbs [8 Nm] Approx. 12 sq. ft. @ 350°F	FSNF24 US	■			27*	<15	<15	■		
	FSNF24-S US	■			27*	<15	<15	■		■
	FSNF120 US		■		27*	<15	<15	■		
	FSNF120-S US		■		27*	<15	<15	■		■
	FSNF230 US			■	27*	<15	<15	■		
	FSNF230-S US			■	27*	<15	<15	■		■
 FSLF Series 30 in-lbs [3.5 Nm] Approx. 4 sq. ft. @ 350°F	FSLF24 US	■			15*	<15	<15	■		
	FSLF24-S US	■			15*	<15	<15	■	■	
	FSLF120 US		■		17*	<15	<15	■		
	FSLF120-S US		■		17*	<15	<15	■	■	
	FSLF230 US			■	17*	<15	<15	■		
	FSLF230-S US			■	17*	<15	<15	■	■	
 FSTF Series* 18 in-lbs [2 Nm] Approx. 1.5 sq. ft. @ 250°F	FSTF24 US	■			3	<75	<25	■		
	FSTF24-S US	■			3	<75	<25	■	■	
	FSTF120 US		■		3.5	<75	<25	■		
	FSTF120-S US		■		3.5	<75	<25	■	■	
	FSTF230 US			■	5.5	<75	<25	■		
	FSTF230-S US			■	5.5	<75	<25	■	■	

*See retrofit installation instructions for details.

Note: Damper sizes given at 2000 fpm [10 m/s].

FSTF actuators only for dampers less than 1.5 sq.ft. at 250°F.

FSLF for dampers 4 sq.ft. and less at 350°F. No linkages are currently available.

FSNF for dampers 4-12 sq.ft. at 350°F and use FSAF*A for larger dampers and multisection applications. Linkages are available for FSAF*A & FSAFB, FSNF, and FSTF.

* VA Rating Note: The FSAF*A, FSNF, and FSLF series actuators draw more current when driving against any stops. Neither UL nor Belimo require any local fusing or breakers. If used, see individual data sheets for end stop current draws and current limit values.

Fire and smoke damper actuator replacement solutions

Building and fire codes are confusing. With over 40 years of technical experience with fire marshals and building officials, Belimo can provide the training, code guidance, and replacement solutions needed for you to maintain a reliable, safe, and efficient building.

Instructions and additional resources on retrofitting the following fire and smoke damper actuators can be found online.

Air Balance, Inc.
Honeywell, MultiProducts, Siebe

Greenheck Dampers
MultiProducts, Siebe/ Barber Coleman, Siemens, Honeywell

Honeywell
Actuator Replacements

Nailor
Honeywell, Siebe, MultiProducts

Pneumatic Actuators
Competitor to Belimo

Pottorff
MultiProducts, Prefco

Ruskin
Honeywell, Siebe/Barber Coleman, MultiProducts, Negator, Phillips

Safe Air and Dowco
Honeywell, Imperial

Cross Reference
Competitor to Belimo



A comprehensive offering with extensive replacement instructions are located at www.belimo.us/firesmoke.



Sizing and selection made easy with SelectPro.

Exceptional service

For over 40 years, Belimo has successfully focused on the heating, ventilation, and air conditioning markets providing quality solutions that will increase energy efficiency and reduce installation costs with the fastest delivery times in the industry. Our innovative products have always been designed to help achieve objectives better, faster, and more economically. Investing in new technology is key to our success, and Belimo will continue to offer products to help businesses succeed.



- 5-year warranty
- Global support
- Tested quality
- On-time delivery
- Extensive service
- Complete product range

PF_05 – 05.2019 – Subject to technical modifications

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