



LUFBERG
CONSTRUCTIVE DECISIONS



ACTUATORS

2016

AIR CONTROL

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Lufberg's broad selection of actuators offers the optimal solution for designing automation systems. Lufberg provides a wide variety of actuator models with torque ranges from 2 Nm to 32 Nm. The actuators also offer additional functions used in today's technology and meet the highest quality standards. Reliability and simple installation and operation ensure maximum functionality and efficient work.

A wide array of actuators, technical excellence and continuous development are your quality guarantee. Lufberg actuators come **with a 5-year warranty**.

DESIGN



Our modern actuators combine sophistication, very compact dimensions, outstanding functionality and ease of operation. The actuator's cover of DA series actuators without spring return is easily detached, allowing easy access to the terminal plate and internal regulators. The actuators are equipped with a stop — a fixing point that does not allow the actuator to turn while it is operating.

MECHANICS

The universal actuators offer extensive torque while still fitting into a rather small space. If actuator has security function and electrical current fails, a special spring return ensures that damper or valve on which the actuator is mounted opens or closes safely.

ELECTRONICS

In addition to traditional technology, still other features are added. Those include automatic blocking on all models, which allows designers a new approach to actuator electrical connections. All actuators have over-voltage protection, do not need extra switches, shut off automatically when set end positions or mechanical limits are reached, and continue to maintain their control capabilities.

ADAPTER



Installation is simple, right at the damper shaft, employing a multi-use adapter. It can be used not only for connection to various shafts, but also as a position indicator or an angle-of-rotation stop.

USES FOR LUFBERG ACTUATORS



For air dampers



For water valves



For fire dampers

LUFBERG ACTUATOR CODES

DA08N24PI

BUILD-IN SWITCHES	S - Auxiliary Switch T - Thermoelectric tripping device No designation - without switches
CONTROLS	P - Modulating - voltage signal PI - Modulating - voltage signal/current signal No designation - 2/3 point controls
VOLTAGE	24 - 24V AC/DC 220 - 230V AC
TYPE	N - Actuator without spring return F - Fast running actuator without spring return S - Actuator with spring return
TORQUE	02 - 2 Nm (also available : 4, 5, 8, 10, 15, 16, 24, 30, 32 Nm)
ACTUATOR	DA - Actuator for air dampers and water valves FS - Actuator for fire and smoke dampers

Example: Model DA04N24PI - without spring return, 24V, modulating control - voltage signal/current signal

ACTUATOR WITHOUT SPRING RETURN

| DA02N... |



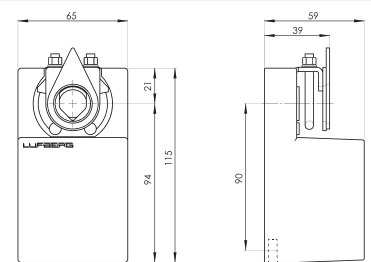
TYPE OVERVIEW						
Torque	Controls	Damper surface	Voltage	Auxiliary switches	Weight	Type
2 Nm	2/3-point	< 0,4 m ² *	24 V AC/DC	-	0,49 kg	DA02N24
				1 SPDT**	0,53 kg	DA02N24S
	Modulating			-	0,50 kg	DA02N24PI
				1 SPDT**	0,54 kg	DA02N24PIS
	2/3-point		230 V AC	-	0,51 kg	DA02N220
				1 SPDT**	0,55 kg	DA02N220S
	Modulating			-	0,51 kg	DA02N220PI
				1 SPDT**	0,55 kg	DA02N220PIS

TECHNICAL SPECIFICATION				
Type	DA02N24 (S)	DA02N24PI (S)	DA02N220 (S)	DA02N220PI (S)
Torque	2 Nm			
Running time - motor	15-25 s	20-35 s	15-25 s	20-35 s
Controls	2/3-point	0(2)-10V/ 0(4)-20mA	2/3-point	0(2)-10V/ 0(4)-20mA
Voltage	24 V AC/DC		230 V AC	
Frequency	50/60 Hz (AC)			
Power consumption				
- in operation	3,0W	3 W	3,0W	3,0W
- at rest	0,5W	0,5 W	0,7W	0,7W
- for wire sizing	3,0VA	3,0VA	3,0VA	3,0VA
Angle of rotation	0~90°			
- setting	0°~90° (stepless)			
Direction of rotation	direction of rotation chosen with a switch on the actuator			
Sound power level - motor	<45 dB(A)			
Feedback signal	-	0(2)-10V/ 0(4)-20mA	-	0(2)-10V
Electrical connection	actuator includes 1m cable(s)			
Auxiliary switches	3 (1.5) A, 230V			
Degree of protection	IP54			
Protection class	III low voltage		II	
Ambient humidity	95% RH, without condensation			
Ambient temperature	-30~+50 °C			
Non-operating temperature	-40~+70 °C			
Service life	60 000 full operating cycles			
Mechanical connection				
- round shaft	from $\varnothing 6$ to $\varnothing 16$ mm			
- square shaft	from 5x5 to 12x12 mm			
Manual override	gears disengaged using a button on the actuator cover			
Norms and standards	Declaration of conformity, ISO, CE, EAC			

* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).

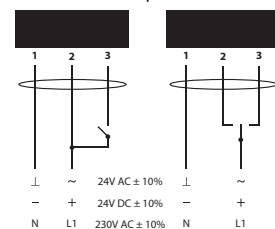
** SPDT (Single-Pole Double-Throw)

DIMENSIONS (mm)

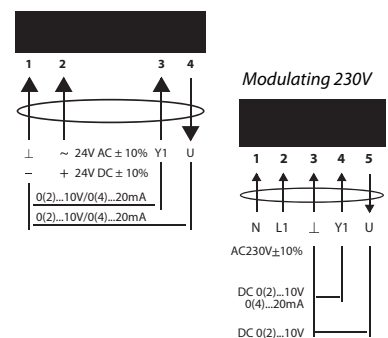


ELECTRIC INSTALLATION

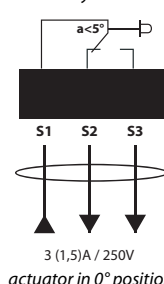
2/3-point



Modulating 24V



Auxiliary switches



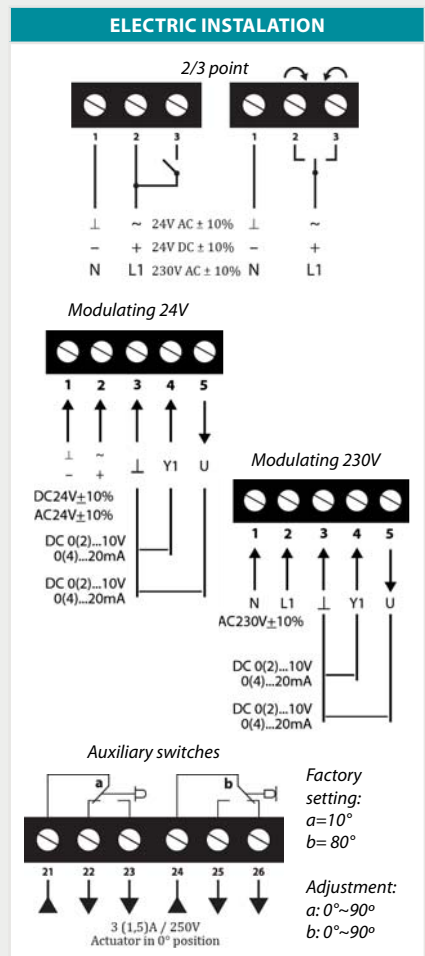
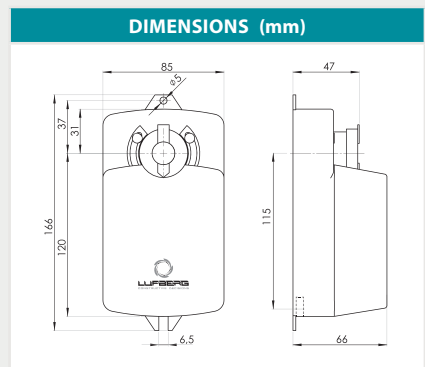
ACTUATOR WITHOUT SPRING RETURN

| DA04N... |



TYPE OVERVIEW						
Torque	Controls	Damper surface	Voltage	Auxiliary switches	Weight	Type
4 Nm	2/3 point	< 0,8 m ² *	24V AC/DC	-	0,73 kg	DA04N24
				2 SPDT**	0,74 kg	DA04N24S
	-			0,75 kg	DA04N24PI	
	2 SPDT**			0,76 kg	DA04N24PIS	
	2/3 point		230V AC	-	0,75 kg	DA04N220
				2 SPDT**	0,76 kg	DA04N220S
				-	0,76 kg	DA04N220PI
				2 SPDT**	0,77 kg	DA04N220PIS

TECHNICAL SPECIFICATION				
Type	DA04N24 (S)	DA04N24PI (S)	DA04N220 (S)	DA04N220PI (S)
Torque	4 Nm			
Running time - motor	35-60 s			
Controls	2/3 point	0(2)-10V / 0(4)-20mA	2/3 point	0(2)-10V / 0(4)-20mA
Voltage	24V AC/DC		230V AC	
Frequency	50/60 Hz (AC)			
Power consumption				
- in operation	3,0W	3,0W	3,0W	3,0W
- at rest	0,5W	0,5W	0,7W	0,7W
- for wire sizing	3,0VA	3,0VA	3,0VA	3,0VA
Angle of rotation	0~90°			
- setting	two end stops with setting from 0° to 30° and 60° to 90° (stepless)			
Direction of rotation	by switch on side of the actuator			
Sound power level - motor/springreturn	<45 dB(A)			
Position feedback	-	0(2)-10V / 0(4)-20mA	-	0(2)-10V / 0(4)-20mA
Electrical connection	terminal in actuator body			
Auxiliary switches	3 (1.5) A, 230V			
Degree of protection	IP54			
Protection class	III low voltage		II	
Ambient humidity	95% RH, without condensation			
Ambient temperature	-30~+50 °C			
Non-operating temperature	-40~+70 °C			
Service life	60 000 full operating cycles			
Mechanical connection				
- round shaft	from ø10 to ø16 mm			
- square shaft	from 9×9 to 12×12 mm			
Manual override	gears disengaged using a button on the actuator cover			
Norms and standards	Declaration of conformity, ISO, CE, EAC			



* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).
** SPDT (Single-Pole Double-Throw)

ACTUATOR WITHOUT SPRING RETURN

| DA08N..., DA16N..., DA24N... |



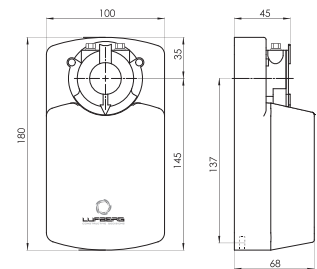
TYPE OVERVIEW							
Torque	Damper surface	Voltage	Auxiliary switches	Weight	2/3 point control type	Weight	Modulating control type
8 Nm	< 1,6m ² *	24V AC/DC	-	1,08 kg	DA08N24	1,08 kg	DA08N24PI
			2 SPDT**	1,09 kg	DA08N24S	1,09 kg	DA08N24PIS
		230V AC	-	1,08 kg	DA08N220	1,10 kg	DA08N220PI
			2 SPDT**	1,10 kg	DA08N220S	1,13 kg	DA08N220PIS
16 Nm	< 3,2m ² *	24V AC/DC	-	1,08 kg	DA16N24	1,08 kg	DA16N24PI
			2 SPDT**	1,09 kg	DA16N24S	1,11 kg	DA16N24PIS
		230V AC	-	1,09 kg	DA16N220	1,10 kg	DA16N220PI
			2 SPDT**	1,10 kg	DA16N220S	1,13 kg	DA16N220PIS
24 Nm	< 4,8m ² *	24V AC/DC	-	1,08 kg	DA24N24	1,09 kg	DA24N24PI
			2 SPDT**	1,09 kg	DA24N24S	1,12 kg	DA24N24PIS
		230V AC	-	1,09 kg	DA24N220	1,10 kg	DA24N220PI
			2 SPDT**	1,10 kg	DA24N220S	1,12 kg	DA24N220PIS

TECHNICAL SPECIFICATION				
Type	DAxxN24 (S)	DAxxN220 (S)	DAxxN24PI (S)	DAxxN220PI (S)
Torque	8 Nm / 16 Nm / 24 Nm			
Running time - motor	30-40s / 70-95s / 115-160s			
Controls	2/3 point		0(2)-10V / 0(4)-20 mA	
Voltage	24V AC/DC	230V AC	24V AC/DC	230V AC
Frequency	50/60 Hz (AC)			
Power consumption				
- in operation	4,5W	4,5W	4,5W	4,5W
- at rest	0,3W	0,5W	0,5W	0,5W
- for wire sizing	4,5VA	4,5VA	4,5VA	4,5VA
Angle of rotation	0~90°			
- setting	5°~85° (5° step)			
Direction of rotation	by switch inside of the actuator			
Sound power level - motor	<45 dB(A)			
Position feedback	-		0(2)-10V / 0(4)-20mA	
Electrical connection	terminal in actuator body			
Auxiliary switches	3 (1.5) A, 230V			
Degree of protection	IP54			
Protection class	III low voltage	II	III low voltage	II
Ambient humidity	95% RH, without condensation			
Ambient temperature	-30~+50 °C			
Non-operating temperature	-40~+70 °C			
Service life	60 000 full operating cycles			
Mechanical connection				
- round shaft	from ø10 to ø20 mm			
- square shaft	from 10×10 to 16×16 mm			
Manual override	gears disengaged using a button on the actuator cover			
Norms and standards	Declaration of conformity, ISO, CE, EAC			

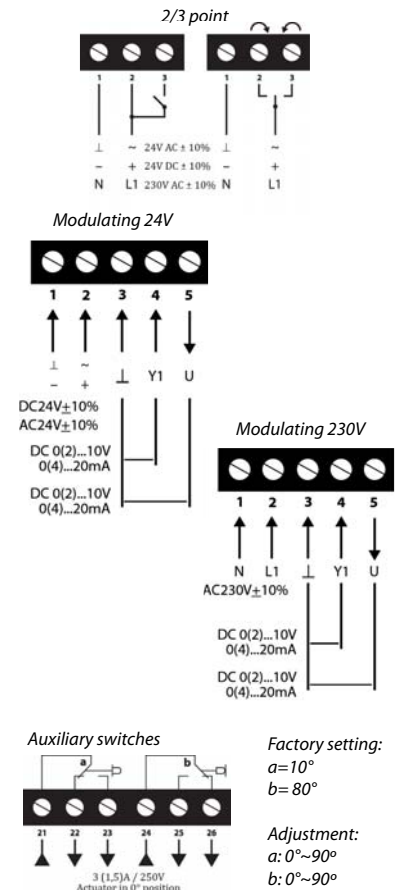
* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).

** SPDT (Single-Pole Double-Throw)

DIMENSIONS (mm)



ELECTRIC INSTALLATION



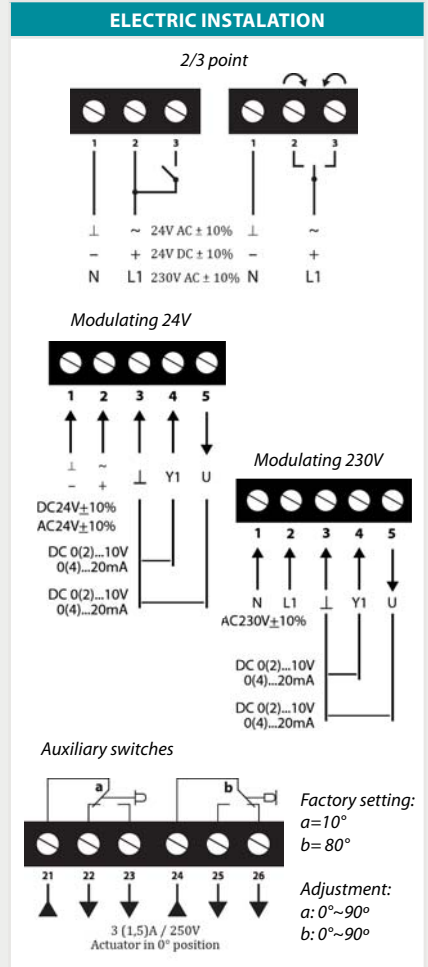
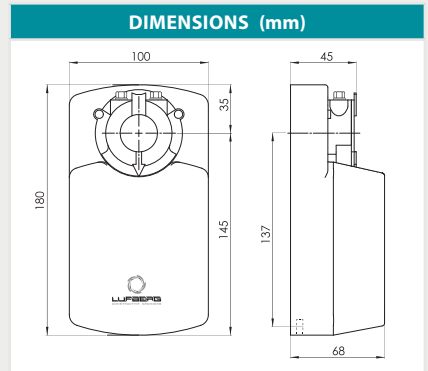
ACTUATOR WITHOUT SPRING RETURN

| DA32N... |



TYPE OVERVIEW						
Torque	Controls	Damper surface	Voltage	Auxiliary switches	Weight	Type
32 Nm	2/3 point	< 6,4 m ² *	24V AC/DC	-	1,09 kg	DA32N24
				2 SPDT**	1,1 kg	DA32N24S
	-			1,09 kg	DA32N24PI	
	2 SPDT**			1,12 kg	DA32N24PIS	
	230V AC		2/3 point	-	1,1 kg	DA32N220
				2 SPDT**	1,11 kg	DA32N220S
			Modulating	-	1,1 kg	DA32N220PI
				2 SPDT**	1,13 kg	DA32N220PIS

TECHNICAL SPECIFICATION				
Type	DA32N24 (S)	DA32N220 (S)	DA32N24PI (S)	DA32N220PI (S)
Torque	32 Nm			
Running time - motor	135-185s			
Controls	2/3 point		0(2)-10V/0(4)-20mA	
Voltage	24V AC/DC	230V AC	24V AC/DC	230V AC
Frequency	50/60Hz (AC)			
Power consumption				
- in operation	4,5W	4,5W	4,5W	4,5W
- at rest	0,3W	0,5W	0,5W	0,5W
- for wire sizing	4,5VA	4,5VA	4,5VA	4,5VA
Angle of rotation	0~90°			
- setting	5°~85° (5° step)			
Direction of rotation	by switch inside of the actuator			
Sound power level - motor/springreturn	<45 dB(A)			
Position feedback	-	0(2)-10V/0(4)-20mA		
Electrical connection	terminal in actuator body			
Auxiliary switches	3 (1.5) A, 230V			
Degree of protection	IP54			
Protection class	III low voltage	II	III low voltage	II
Ambient humidity	95% RH, without condensation			
Ambient temperature	-30~+50 °C			
Non-operating temperature	-40~+70 °C			
Service life	60 000 full operating cycles			
Mechanical connection				
- round shaft	from ø10 to ø20 mm			
- square shaft	from 10x10 to 16x16 mm			
Manual override	gears disengaged using a button on the actuator cover			
Norms and standards	Declaration of conformity, ISO, CE, EAC			



* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).

** SPDT (Single-Pole Double-Throw)

FAST RUNNING ACTUATOR WITHOUT SPRING RETURN

| DA08F..., DA16F..., DA24F... |

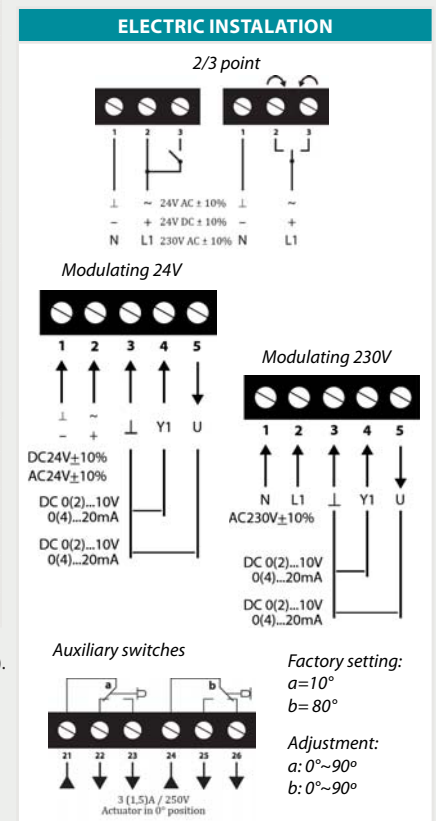
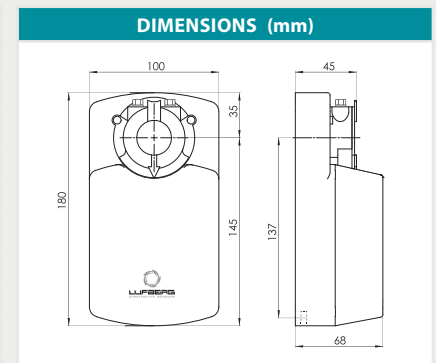


TYPE OVERVIEW							
Torque	Damper surface	Voltage	Auxiliary switches	Weight	2/3 point control type	Weight	Modulating control type
8Nm	< 1,6m ² *	24V AC/DC	-	1,08 kg	DA08F24	1,09 kg	DA08F24PI
			2 SPDT**	1,09 kg	DA08F24S	1,11 kg	DA08F24PIS
		230V AC	-	1,09 kg	DA08F220	1,1 kg	DA08F220PI
			2 SPDT**	1,1 kg	DA08F220S	1,12 kg	DA08F220PIS
16Nm	< 3,2m ² *	24V AC/DC	-	1,08 kg	DA16F24	1,09 kg	DA16F24PI
			2 SPDT**	1,09 kg	DA16F24S	1,11 kg	DA16F24PIS
		230V AC	-	1,09 kg	DA16F220	1,1 kg	DA16F220PI
			2 SPDT**	1,1 kg	DA16F220S	1,12 kg	DA16F220PIS
24Nm	< 4,8m ² *	24V AC/DC	-	1,09 kg	DA24F24	1,09 kg	DA24F24PI
			2 SPDT**	1,1 kg	DA24F24S	1,11 kg	DA24F24PIS
		230V AC	-	1,1 kg	DA24F220	1,1 kg	DA24F220PI
			2 SPDT**	1,11 kg	DA24F220S	1,12 kg	DA24F220PIS

TECHNICAL SPECIFICATION				
Type	DAxxF24x	DAxxF220x	DAxxF24PIx	DAxxF220PIx
Torque	8Nm / 16Nm / 24Nm			
Running time - motor	8s / 16s / 45s			
Controls	2/3 point		0(2)-10V/0(4)-20mA	
Voltage	24V AC/DC	230V AC	24V AC/DC	230V AC
Frequency	50/60 Hz (AC)			
Power consumption				
- in operation	12,0W	12,0W	12,0W	10,0W
- at rest	0,3W	0,5W	0,5W	0,5W
- for wire sizing	12,0VA	12,0VA	12,0VA	12,0VA
Angle of rotation	0~90°			
- setting	5°~85° (5° step)			
Direction of rotation	by switch inside of the actuator			
Sound power level - motor	<55 dB(A)			
Position feedback	-		0(2)-10V/0(4)-20mA	
Electrical connection	terminal in actuator body			
Auxiliary switches	3 (1.5) A, 230V			
Degree of protection	IP54			
Protection class	III low voltage	II	III low voltage	II
Ambient humidity	95% RH, without condensation			
Ambient temperature	-30~+50 °C			
Non-operating temperature	-40~+70 °C			
Service life	60 000 full operating cycles			
Mechanical connection				
- round shaft	from ø10 to ø20 mm			
- square shaft	from 10×10 to 16×16 mm			
Manual override	gears disengaged using a button on the actuator cover			
Norms and standards	Declaration of conformity, ISO, CE, EAC			

* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).

** SPDT (Single-Pole Double-Throw)



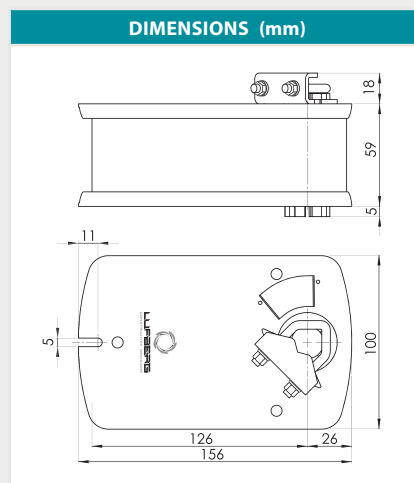
ACTUATOR WITH SPRING RETURN

| DA05S... |



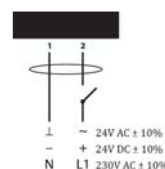
TYPE OVERVIEW						
Torque	Controls	Damper surface	Voltage	Auxiliary switches	Weight	Type
5Nm	On/off	< 1,0m ² *	24V AC/DC	-	1,58 kg	DA05S24
				2 SPDT**	1,68 kg	DA05S24S
	Modulating			-	1,54 kg	DA05S24P
				2 SPDT**	1,64 kg	DA05S24PS
	On/off		230V AC	-	1,58 kg	DA05S220
				2 SPDT**	1,68 kg	DA05S220S

TECHNICAL SPECIFICATION			
Type	DA05S24 (S)	DA05S24P (S)	DA05S220 (S)
Torque	5Nm		
Running time - motor/spring return	70 s / < 20 s	150 s / < 20 s	70 s / < 20 s
Controls	on/off	0-10V	on/off
Voltage	24V AC/DC	24V AC/DC	230V AC
Frequency	50/60Hz (AC)		
Power consumption			
- in operation	5,0W	5,0W	5,0W
- at rest	3,0W	2,0W	3,0W
- for wire sizing	5,0VA	10,0VA	5,0VA
Angle of rotation	-5°~90°		
- setting	5°~85° (5° step)		
Direction of rotation	can be selected by mounting L/R		
Sound power level - motor/spring return	<45 dB(A) / <62 dB(A)		
Position feedback	-	0 - 10V DC	-
Electrical connection	1 m cable		
Auxiliary switches	3 (1.5) A, 230V		
Degree of protection	IP54		
Protection class	III low voltage	III low voltage	II
Ambient humidity	95% RH, without condensation		
Ambient temperature	-30~+50 °C		
Non-operating temperature	-40~+70 °C		
Service life	60 000 emergency positions		
Mechanical connection			
- round shaft	from ø10 to ø16 mm		
- square shaft	from 7×7 to 11×11 mm		
Manual override	not possible		
Norms and standards	Declaration of conformity, ISO, CE, EAC		

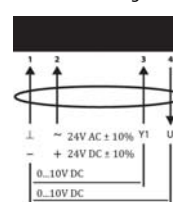


ELECTRIC INSTALLATION

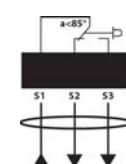
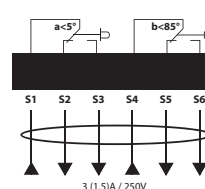
On/off



Modulating



Auxiliary switches



* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).

** SPDT (Single-Pole Double-Throw)

ACTUATOR WITH SPRING RETURN

| DA10S... |

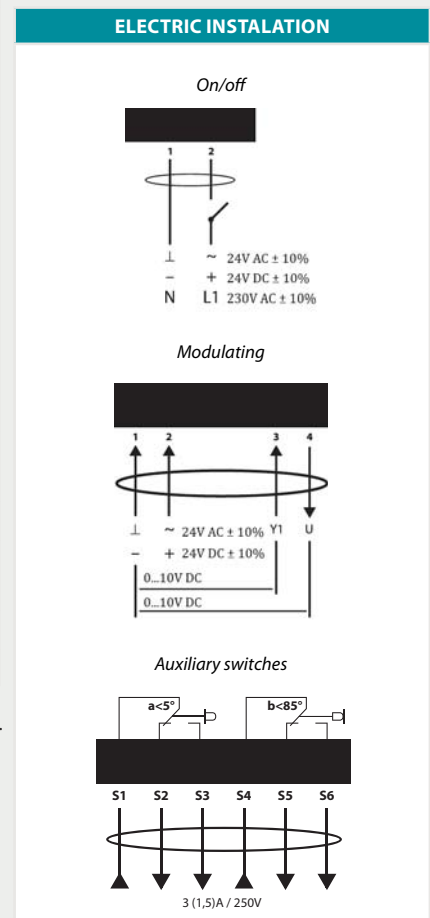
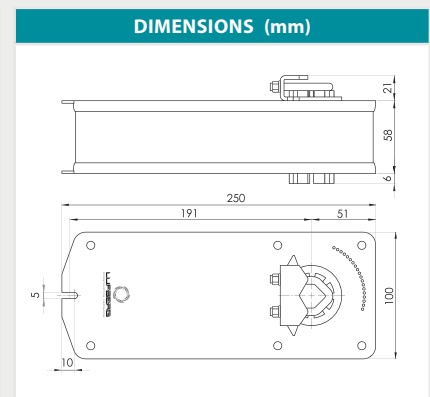


TYPE OVERVIEW						
Torque	Controls	Damper surface	Voltage	Auxiliary switches	Weight	Type
10Nm	On/off	< 2,0m ² *	24V AC/DC	-	2,24 kg	DA10S24
				2 SPDT**	2,37 kg	DA10S24S
	Modulating			-	2,30 kg	DA10S24P
				2 SPDT**	2,42 kg	DA10S24PS
	On/off		230V AC	-	2,24 kg	DA10S220
				2 SPDT**	2,37 kg	DA10S220S

TECHNICAL SPECIFICATION			
Type	DA10S24 (S)	DA10S24P (S)	DA10S220 (S)
Torque	10Nm		
Running time - motor/spring return	80 s / < 25s	150 s / < 20 s	80 s / < 25 s
Controls	on/off	0 - 10V	on/off
Voltage	24V AC/DC	24V AC/DC	230V AC
Frequency	50/60 Hz (AC)		
Power consumption			
- in operation	5,0W	2,5W	5,0W
- at rest	3,0W	0,4W	3,0W
- for wire sizing	5,0VA	10,0VA	5,0VA
Angle of rotation	-5°~90°		
- setting	5°~85° (5° step)		
Direction of rotation	can be selected by mounting L/R		
Sound power level - motor/spring return	<50 dB(A) / <62 dB(A)		
Position feedback	-	0 - 10V DC	-
Electrical connection	1 m cable		
Auxiliary switches	3 (1.5) A, 230V		
Degree of protection	IP54		
Protection class	III low voltage	III low voltage	II
Ambient humidity	95% RH, without condensation		
Ambient temperature	-30~+50 °C		
Non-operating temperature	-40~+70 °C		
Service life	60 000 emergency positions		
Mechanical connection			
- round shaft	from ø10 to ø19 mm		
- square shaft	from 10×10 to 16×16 mm		
Manual override	by crank handle		
Norms and standards	Declaration of conformity, ISO, CE, EAC		

* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).

** SPDT (Single-Pole Double-Throw)



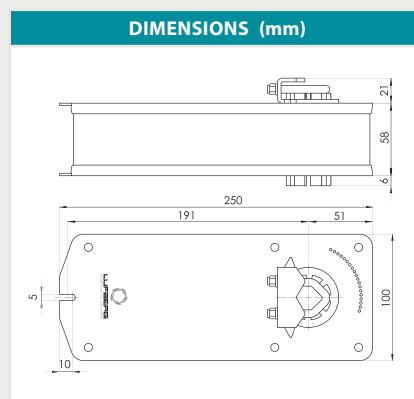
ACTUATOR WITH SPRING RETURN

| DA15S... |



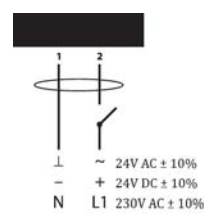
TYPE OVERVIEW						
Torque	Controls	Damper surface	Voltage	Auxiliary switches	Weight	Type
15 Nm	On/off	< 3,0m ² *	24V AC/DC	-	2,37 kg	DA15S24
				2 SPDT**	2,54 kg	DA15S24S
	Modulating			-	2,41 kg	DA15S24P
				2 SPDT**	2,55 kg	DA15S24PS
	On/off		230V AC	-	2,58 kg	DA15S220
				2 SPDT**	2,72 kg	DA15S220S

TECHNICAL SPECIFICATION			
Type	DA15S24 (S)	DA15S24P (S)	DA15S220 (S)
Torque	15 Nm		
Running time - motor/spring return	180s / < 30s		
Controls	on/off	0 - 10V	on/off
Voltage	24V AC/DC	24V AC/DC	230V AC
Frequency	50/60 Hz (AC)		
Power consumption			
- in operation	6,5W	3,5W	6,5W
- at rest	2,5W	1,2W	2,5W
- for wire sizing	10,0VA	10,0VA	10,0VA
Angle of rotation	-5°~90°		
- setting	5°~85° (5° step)		
Direction of rotation	can be selected by mounting L/R		
Sound power level - motor/spring return	<50 dB(A) / <62 dB(A)		
Position feedback	-	0 - 10V DC	-
Electrical connection	1 m cable		
Auxiliary switches	3 (1.5) A, 230V		
Degree of protection	IP54		
Protection class	III low voltage	III low voltage	II
Ambient humidity	95 % RH, without condensation		
Ambient temperature	-30~+50 °C		
Non-operating temperature	-40~+70 °C		
Service life	60 000 emergency positions		
Mechanical connection			
- round shaft	from ø10 to ø19 mm		
- square shaft	from 10×10 to 16×16 mm		
Manual override	not possible		
Norms and standards	Declaration of conformity, ISO, CE, EAC		

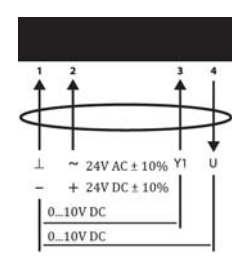


ELECTRIC INSTALLATION

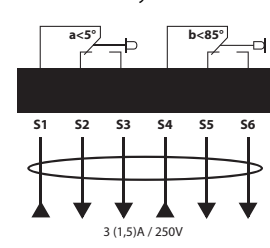
On/off



Modulating



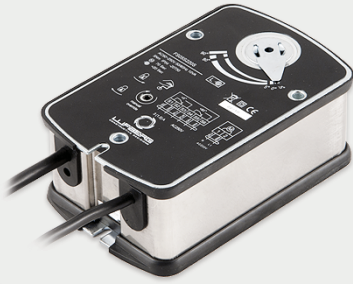
Auxiliary switches



* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).
 ** SPDT (Single-Pole Double-Throw)

ACTUATOR FOR FIRE AND SMOKE DAMPERS WITH SPRING RETURN

| FS05S... |

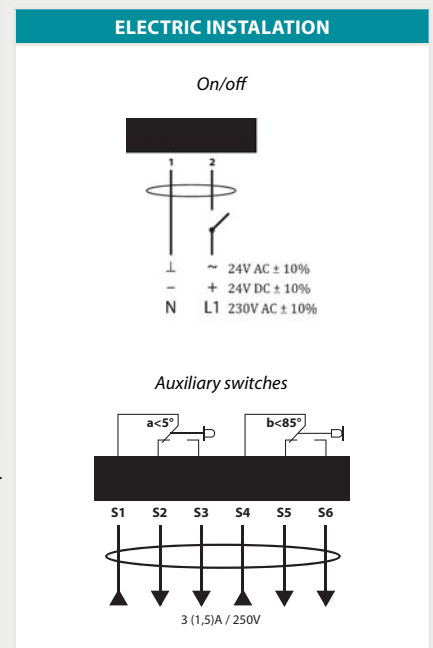
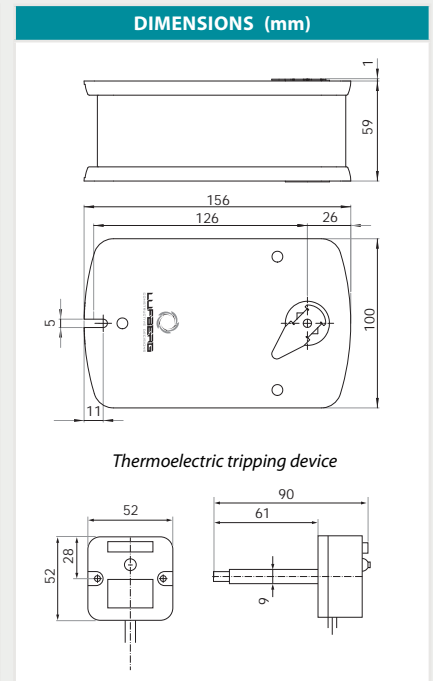


TYPE OVERVIEW						
Torque	Controls	Damper surface	Voltage	Thermoelectric tripping device	Weight	Type
5 Nm	On/off	< 1,0 m ² *	24V AC/DC	-	1,69 kg	FS05S24S
				yes	1,77 kg	FS05S24ST
			230V AC	-	1,75 kg	FS05S220S
				yes	1,83 kg	FS05S220ST

TECHNICAL SPECIFICATION		
Type	FS05S24S (T)	FS05S220S (T)
Torque	5 Nm	
Running time - motor/spring return	70s / < 20s	
Controls	on/off	
Voltage	24V AC/DC	230V AC
Frequency	50/60 Hz (AC)	
Power consumption		
- in operation	5,0W	5,0W
- at rest	3W	3W
- for wire sizing	5,0VA	5,0VA
Angle of rotation	-5°~90°	
- setting	-	
Direction of rotation	can be selected by mounting L/R	
Sound power level - motor/spring return	<50 dB(A) / <62 dB(A)	
Position feedback	-	
Electrical connection	1 m cable	
Auxiliary switches	2x SPDT**; 3 (1.5) A, 230V	
Degree of protection	IP54	
Protection class	III low voltage	II
Ambient humidity	95% RH, without condensation	
Ambient temperature	-30~+50 °C	
Non-operating temperature	-40~+70 °C	
Service life	60 000 emergency positions	
Mechanical connection		
- round shaft	-	
- square shaft	12x12 mm	
Manual override	by crank handle	
Thermoelectric tripping device	switching off at temperature >72°C (only FS...T types)	
Norms and standards	Declaration of conformity, ISO, CE, EAC	

* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).

** SPDT (Single-Pole Double-Throw)



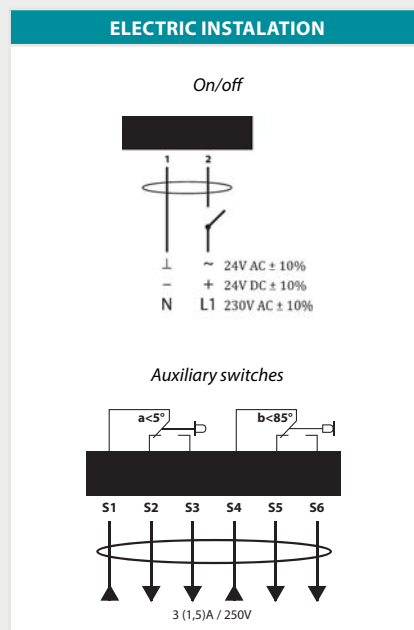
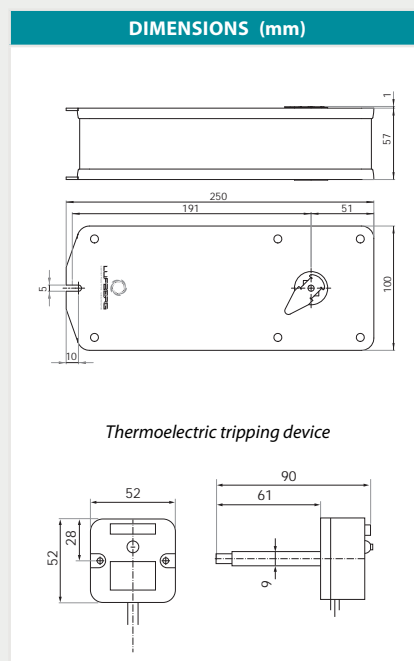
ACTUATOR FOR FIRE AND SMOKE DAMPERS WITH SPRING RETURN

| FS10S..., FS15S... |



TYPE OVERVIEW						
Torque	Controls	Damper surface	Voltage	Thermoelectric tripping device	Weight	Type
10Nm	On/off	< 2,0m ² *	24V AC/DC	-	2,50 kg	FS10S24S
				yes	2,58 kg	FS10S24ST
			230V AC	-	2,51 kg	FS10S220S
				yes	2,59 kg	FS10S220ST
15Nm	On/off	< 3,0m ² *	24V AC/DC	-	2,55 kg	FS15S24S
				yes	2,76 kg	FS15S24ST
			230V AC	-	2,88 kg	FS15S220S
				yes	3,00 kg	FS15S220ST

TECHNICAL SPECIFICATION				
Type	FS10S24S (T)	FS10S220S (T)	FS15S24S (T)	FS15S220S (T)
Torque	10Nm		15Nm	
Running time - motor/spring return	80s / < 25 s		180s / < 30s	
Controls	on/off			
Voltage	24V AC/DC	230V AC	24V AC/DC	230V AC
Frequency	50/60 Hz (AC)			
Power consumption				
- in operation	5,0W	5,0W	6,5W	6,5W
- at rest	3,0W	3,0W	2,5W	2,5W
- for wire sizing	5,0VA	5,0VA	10,0VA	10,0VA
Angle of rotation	-5°~90°			
- setting	-			
Direction of rotation	can be selected by mounting L/R			
Sound power level - motor/spring return	<50 dB(A) / <62 dB(A)			
Position feedback	-			
Electrical connection	1 m cable			
Auxiliary switches	2x SPDT**, 3 (1.5) A, 230V			
Degree of protection	IP54			
Protection class	III low voltage	II	III low voltage	II
Ambient humidity	95 % RH, without condensation			
Ambient temperature	-30~+50 °C			
Non-operating temperature	-40~+70 °C			
Service life	60 000 emergency positions			
Mechanical connection				
- round shaft	-			
- square shaft	12x12 mm			
Manual override	by crank handle			
Thermoelectric tripping device	switching off at temperature >72°C (only FS...T types)			
Norms and standards	Declaration of conformity, ISO, CE, EAC			



* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).

** SPDT (Single-Pole Double-Throw)

SMOKE CONTROL DAMPER ACTUATOR WITHOUT SPRING RETURN

| FS10N... |

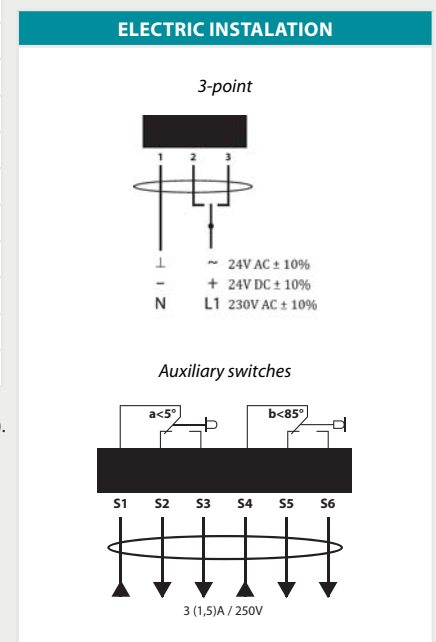
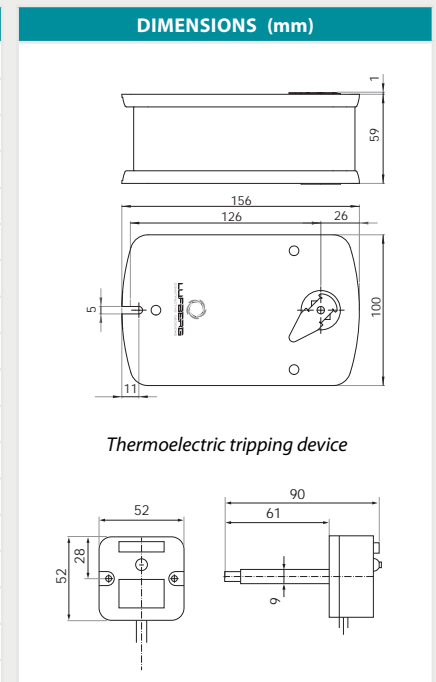


TYPE OVERVIEW						
Torque	Controls	Damper surface	Voltage	Thermoelectric tripping device	Weight	Type
10Nm	3-point	< 2,0 m ² *	24V AC/DC	-	1,55 kg	FS10N24S
				yes	1,74 kg	FS10N24ST
			230V AC	-	1,56 kg	FS10N220S
				yes	1,74 kg	FS10N220ST

TECHNICAL SPECIFICATION		
Type	FS10N24S (T)	FS10N220S (T)
Torque	10Nm	
Running time - motor	45 s	
Controls	3- point	
Voltage	24V AC/DC	230V AC
Frequency	50/60 Hz (AC)	
Power consumption		
- in operation	4,0W	4,0W
- at rest	1,0W	1,0W
- for wire sizing	5,0VA	5,0VA
Angle of rotation	-5°~90°	
- setting	-	
Direction of rotation	can be selected by mounting L/R	
Sound power level - motor	<50 dB(A)	
Position feedback	-	
Electrical connection	1 m cable	
Auxiliary switches	2x SPDT**, 3 (1.5) A, 230V	
Degree of protection	IP54	
Protection class	III low voltage	II
Ambient humidity	95 % RH, without condensation	
Ambient temperature	-30~+50 °C	
Non-operating temperature	-40~+70 °C	
Service life	60 000 emergency positions	
Mechanical connection		
- round shaft	-	
- square shaft	12x12 mm	
Manual override	by crank handle	
Thermoelectric tripping device	switching off at temperature >72 °C (only FS...T types)	
Norms and standards	Declaration of conformity, ISO, CE, EAC	

* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).

** SPDT (Single-Pole Double-Throw)



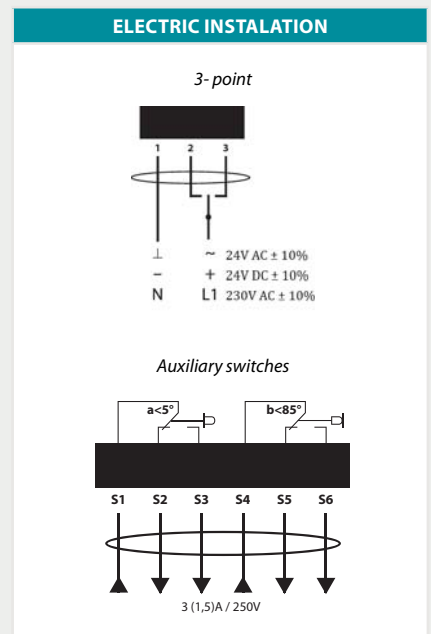
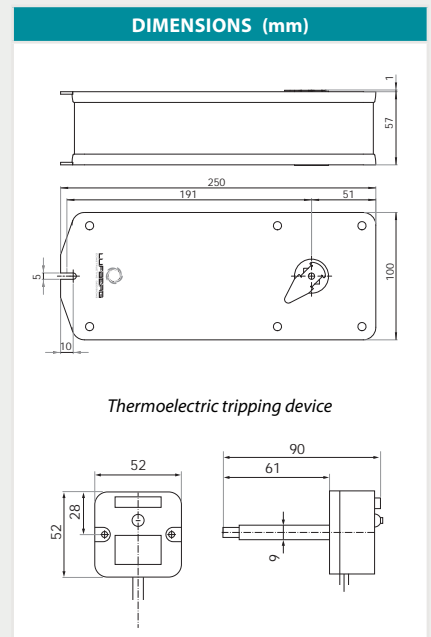
SMOKE CONTROL DAMPER ACTUATOR WITHOUT SPRING RETURN

| FS30N... |



TYPE OVERVIEW						
Torque	Controls	Damper surface	Voltage	Thermoelectric tripping device	Weight	Type
30Nm	3-point	< 6,0m ² *	24V AC/DC	-	2,19 kg	FS30N24S
				yes	2,75 kg	FS30N24ST
			230V AC	-	2,19 kg	FS30N220S
				yes	2,75 kg	FS30N220ST

TECHNICAL SPECIFICATION		
Type	FS30N24S (T)	FS30N220S (T)
Torque	30Nm	
Running time - motor	120s	
Controls	3-point	
Voltage	24V AC/DC	230V AC
Frequency	50/60 Hz (AC)	
Power consumption		
- in operation	6,0W	6,0W
- at rest	0,5W	0,5W
- for wire sizing	10,0VA	10,0 VA
Angle of rotation	-5°~90°	
- setting	-	
Direction of rotation	can be selected by mounting L/R	
Sound power level - motor	<50 dB(A)	
Position feedback	-	
Electrical connection	1 m cable	
Auxiliary switches	2x SPDT**, 3 (1.5) A, 230V	
Degree of protection	IP54	
Protection class	III low voltage	II
Ambient humidity	95% RH, without condensation	
Ambient temperature	-30~+50 °C	
Non-operating temperature	-40~+70 °C	
Service life	60 000 emergency positions	
Mechanical connection		
- round shaft	-	
- square shaft	12x12mm	
Manual override	by crank handle	
Thermoelectric tripping device	switching off at temperature >72 °C (only FS...T types)	
Norms and standards	Declaration of conformity, ISO, CE, EAC	



* Maximum damper surface is calculated for optimum conditions (without the influence of air flow, pressure difference, etc.).

** SPDT (Single-Pole Double-Throw)

CONTROL BALL VALVES

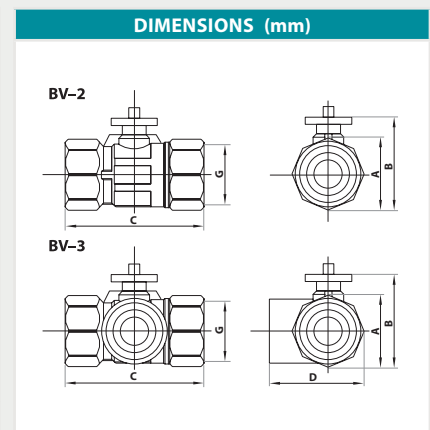
| BV |



Series BV ball regulator valves are intended for regulating flow of hot or cold water, controlled by a Lufberg series DA actuator, which itself is controlled by a signal from the HVAC system's heat regulator.

TYPE OVERVIEW						
Construction	Dimension	Kvs	By-pass Kvs	Control torque	Weight	Type
2-way	DN15	1,6	-	4 Nm	0,23 kg	BV-2-15-1,6
		2,5	-		0,22 kg	BV-2-15-2,5
	DN20	4	-		0,30 kg	BV-2-20-4
		6,3	-		0,31 kg	BV-2-20-6,3
	DN25	10	-		0,45 kg	BV-2-25-10
		16	-		0,46 kg	BV-2-25-16
	DN32	25	-		0,76 kg	BV-2-32-25
DN40		25	-	1,05 kg	BV-2-40-25	
		40	-	1,03 kg	BV-2-40-40	
DN50	63	-	1,70 kg	BV-2-50-63		
	3-way	DN15	1,6	0,8	4 Nm	0,26 kg
2,5			1,6	0,25 kg		BV-3-15-2,5
DN20		4	2,5	0,38 kg		BV-3-20-4
		6,3	4	0,38 kg		BV-3-20-6,3
DN25		10	6,3	0,65 kg		BV-3-25-10
		16	10	0,64 kg		BV-3-25-16
DN32		25	12,5	0,94 kg		BV-3-32-25
	DN40	25	16	1,27 kg	BV-3-40-25	
40		20	1,25 kg	BV-3-40-40		
DN50	63	31,5	2,19 kg	BV-3-50-63		

TECHNICAL SPECIFICATION	
Medium	Water, glycol fluid up to 50 % concentration
Nominal diameter	DN15, DN20, DN25, DN32, DN40, DN50
Types	2-way or 3-way
Controls	
Voltage	
Power consumption	depend on actuator choice
Degree of protection	
Running time	
Connection	internal NPT thread
Body	brass
Valve stem	brass with 2 EPDM o-ring
Ball	chromed brass with PTFE seat
Max. medium pressure	2,0 MPa
Max. differential pressure	1,4 MPa
Installation environment temp.	from 5 °C to 50 °C
Medium temperature	from -5 °C to 120 °C



CAUTION: When using a BV valve with a series DA actuator, a special BV-BR adapter must be ordered.

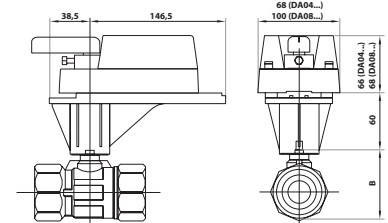
BV-2	G	C	B	A
DN15	1/2"	61	47	27
DN20	3/4"	69	52	36
DN25	1"	89	60	42
DN32	1 1/4"	104	70	52
DN40	1 1/2"	113	79	60
DN50	2"	128	91	74

dimensions in mm

BV-3	G	C	D	B	A
DN15	1/2"	61	47	47	27
DN20	3/4"	69	49	52	36
DN25	1"	89	65	60	42
DN32	1 1/4"	99	75	70	52
DN40	1 1/2"	107	81	79	60
DN50	2"	123	103	90	71

dimensions in mm

ADAPTER



BV valve +
BV-BR adapter +
series DA actuator

ZONE VALVES WITH ACTUATOR ZV

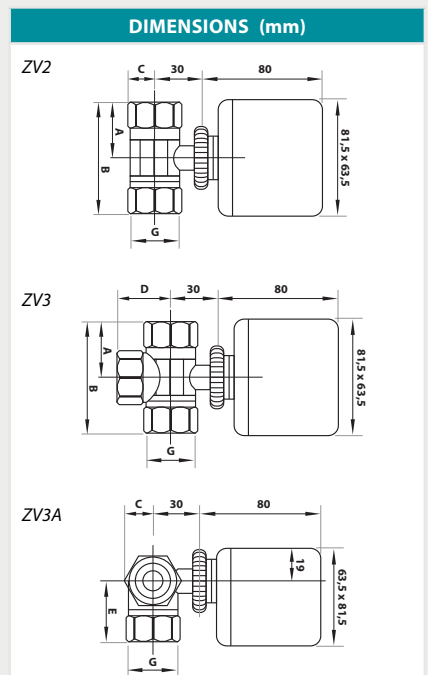
| ZV |



ZV zone valves have broad use in heating and cooling systems. ZV type valves are intended for precisely regulating the flow of cold or hot water, depending on the required room temperature.

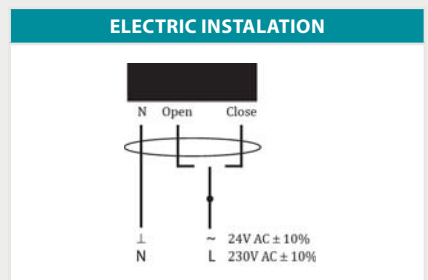
TYPE OVERVIEW						
Construction	Dimension	Kvs	Voltage	Weight	Type	
2-way	DN15	4,62	230V	0,67 kg	ZV2-15-5-230	
	DN20	7,50		0,69 kg	ZV2-20-8-230	
	DN25	13,02		0,86 kg	ZV2-25-13-230	
	DN32	25,97		1,07 kg	ZV2-32-26-230	
	DN15	4,62	24V	0,65 kg	ZV2-15-5-24	
	DN20	7,50		0,67 kg	ZV2-20-8-24	
	DN25	13,02		0,83 kg	ZV2-25-13-24	
	DN32	25,97		1,05 kg	ZV2-32-26-24	
3-way „vertical“	DN15	4,62	230V	0,70 kg	ZV3-15-5-230	
	DN20	7,50		0,75 kg	ZV3-20-8-230	
	DN25	13,02		0,95 kg	ZV3-25-13-230	
	DN15	4,62	24V	0,68 kg	ZV3-15-5-24	
	DN20	7,50		0,72 kg	ZV3-20-8-24	
	DN25	13,02		0,92 kg	ZV3-25-13-24	
	DN15	4,62		0,75 kg	ZV3A-15-5-230	
	DN20	7,5		0,77 kg	ZV3A-20-8-230	
3-way „horizontal“	DN25	13,02	230V	0,99 kg	ZV3A-25-13-230	
	DN15	4,62		24V	0,72 kg	ZV3A-15-5-24
	DN20	7,5			0,74 kg	ZV3A-20-8-24
	DN25	13,02	0,96 kg		ZV3A-25-13-24	

TECHNICAL SPECIFICATION	
Medium	Water, glycol fluid up to 60% concentration
Nominal diameter	DN15, DN20, DN25, DN32
Types	2-way or 3-way
Controls	3-point
Voltage	230 V AC or 24 V AC
Power consumption	5 W (in operation)
Degree of protection	IP65
Running time	15 sec
Connection	internal NPT thread
Body	brass
Valve stem	brass with 2 EPDM o-ring
Ball	stainless steel with PTFE seat
Max. medium pressure	2,0 MPa
Max. differential pressure	1,0 MPa
Installation environment temp.	from 5 °C to 50 °C
Medium temperature	from 1 °C to 95 °C



SIZE	G	A	B	C	D	E
DN15	1/2"	33,5	67	15,5	34	34
DN20	3/4"	33	66	18	36	36
DN25	1"	44	88	20	40	38
DN32	1 1/4"	50	100	25	-	-

dimensions in mm, accuracy ± 1 mm



ZONE VALVES WITH SPRING RETURN ACTUATOR

| ZV-S |



ZV-S zone valves are recommended for all heating and cooling systems with requirement on safety function in case electricity supply interruption. Spring will safely close valve in this case.

TYPE OVERVIEW					
Construction	Dimension	Kvs	Voltage	Weight	Type
2-way	DN15	2,2	230V	0,79 kg	ZV2-S-15-2-230
	DN20	3,0		0,80 kg	ZV2-S-20-4-230
	DN25	6,9		0,88 kg	ZV2-S-25-8-230
3-way	DN15	2,2		0,80 kg	ZV3-S-15-3-230
	DN20	3,0		0,84 kg	ZV3-S-20-4-230
	DN25	6,9		0,99 kg	ZV3-S-25-8-230

TECHNICAL SPECIFICATION	
Medium	water, glycol fluid up to 50% concentration
Nominal diameter	DN15, DN20, DN25,
Types	2-way or 3-way
Controls	open/close
Voltage	230 V AC
Power consumption	7 W (in operation)
Degree of protection	IP20
Running time	25 sec (open), 10 sec (close)
Connection	internal NPT thread
Body	brass
Valve stem	brass with EPDM sealing
Ball	NBR - Nitrile butadiene rubber
Max. medium pressure	1,6 MPa
Max. differential pressure	DN15 = 0,2 MPa; DN20 = 0,18 MPa; DN25 = 0,15 MPa
Installation environment temp.	from 5 °C to 60 °C
Medium temperature	from 5 °C to 90 °C

DIMENSIONS (mm)	

ZV2-S	G	A	B	C
DN15	1/2"	70	86	22,5
DN20	3/4"	79	90	22,5
DN25	1"	88	95	22,5

dimensions in mm, accuracy ± 1 mm

ZV3-S	G	A	B	D
DN15	1/2"	70	86	31,5
DN20	3/4"	79	90	34
DN25	1"	88	95	42

dimensions in mm, accuracy ± 1 mm

ELECTRIC INSTALLATION

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International Sales offices: Lufberg s.r.o., Czech Republic

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info@lufberg.eu

Stamp dealer:



LUFBERG
CONSTRUCTIVE DECISIONS