



ACTUATORS

*Control mechanisms for air shutters
and HVAC systems.*

For use in building automation, thermal equipment in HVAC systems, heating, ventilation and air conditioning.



2010

The wide range of actuators LUFBERG offers an optimal solution for design automation systems. LUFBERG offers broad choice actuators with torque of 2 - 32 Nm and a lot of additional functions which are used in current technologies and meet only the highest quality standards. Reliability, easy installation and operation guarantee at the most functionality and labor economics. The comprehensive range of actuators, process the excellence and continual development - this is your quality guaranteed brand of LUFBERG actuators.



Design

All our modern actuators, connecting elegance, compact size, high level of functionality and easy use. The cover of actuator can be taken off very simply and it allows get in to reach the terminals and internal regulators. All actuators are invested with chocks – fixed point, which does not allow to move the actuator during the working time.

Mechanism

Multipurpose actuators offer a large torque as well as easy lay-out in a sufficiently small space. In case of power cut the shutter will be closed/opened by special return spring.



Electronics

Another features are added in combination with the traditional technical solutions. For example the automatic blockage installed in all models allows designers a new approach to provide electrical connection of the actuators. Actuators are invested with overvoltage protection. They do not need any other switches, they are turned off automatically when they reach a set point or mechanical limitation and they still keep their ability for further control.

Auxiliary switches

Microswitches might be mounted on the motherboard when is required to indicate the location of actuator along regulation distance. Points for switching can be adjusted easily in any position of range 0 - 90° by simple turn of regulators. This function is another advantage of LUFBERG's actuators.



Adapter

Simple adjustment between supply and control element, it is mounted directly to the shutter's shaft by multifunction adapter which is not intended only for connection of various shafts (thread). Adapter can be used as an indicator of position or chock of angle rotation also.

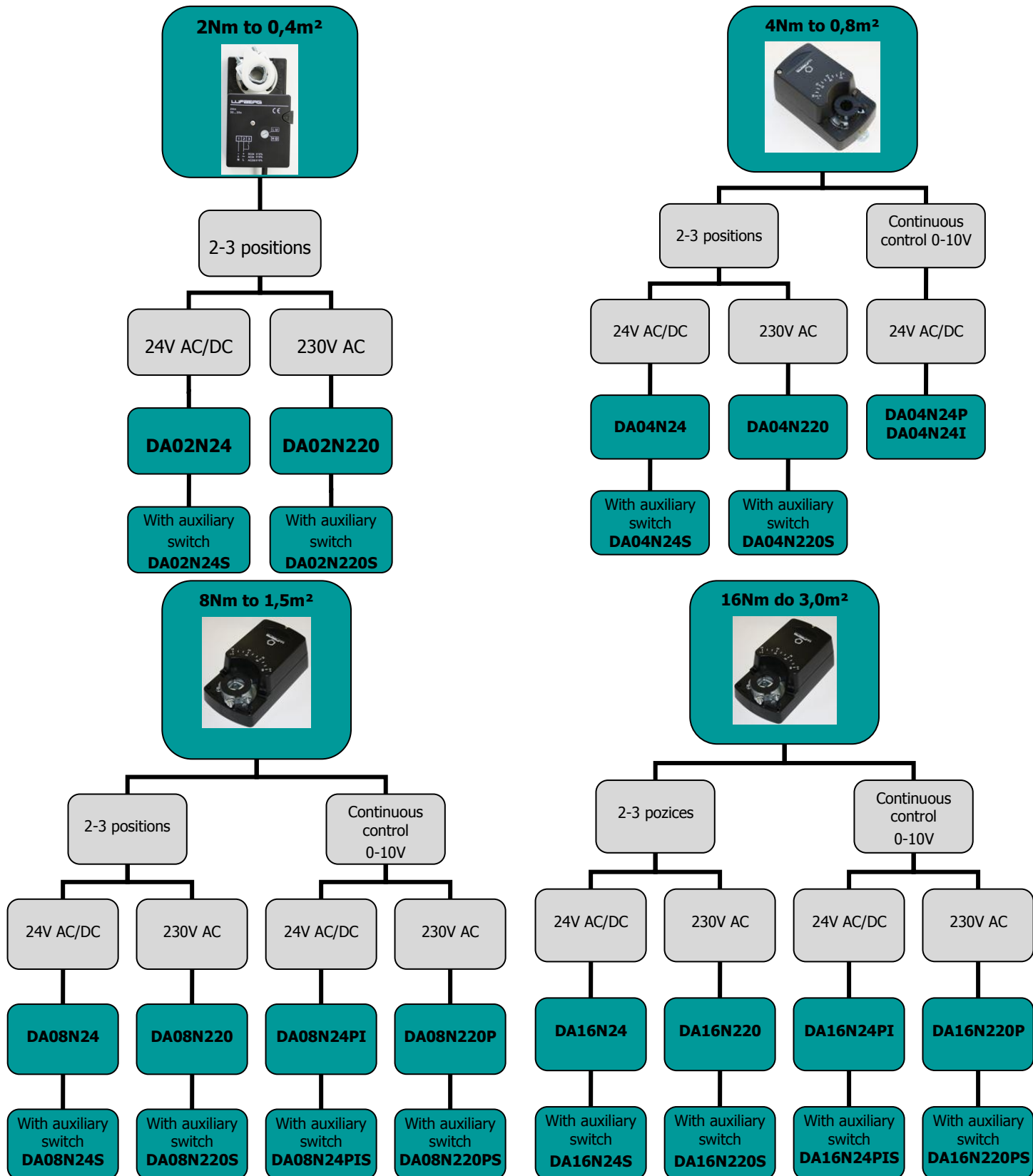
CODING OF LUFBERG ACTUATORS

Code description would help you to find your required model.

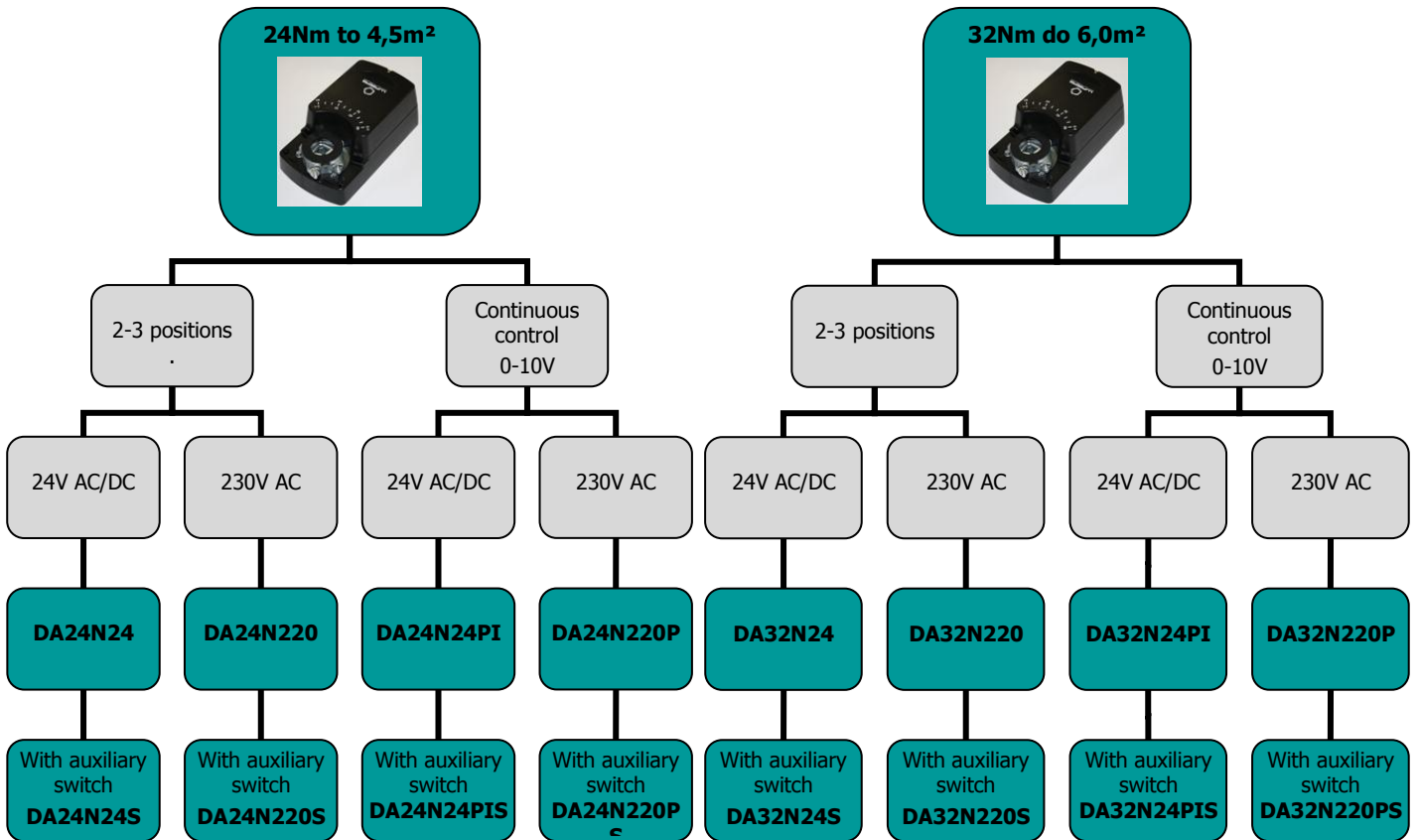
ACTUATOR	DA – Damper actuator FS – Actuator for fire and smoke shutters
TORQUE	02 – 2 Nm (also possible 4, 5, 8,10, 16, 24, 32Nm)
TYPE	N – Normal (without Spring Return) F – Fast running S – Spring return
POWER SUPPLY	24 – 24V 220 – 230V ±10%
CONTROLLING	P – Proportional 0-10V I – Proportional 4-20mA PI – Proportional 0-10V/4-20mA Unmarked 2-x/3-x control position
BUILT-IN SWITCHES	S – Auxilary Switch T – Thermal Sensor If no switches -> no mark.

METHODOLOGY OF SELECTION LUFBERG'S ACUTATOR for air shutters control

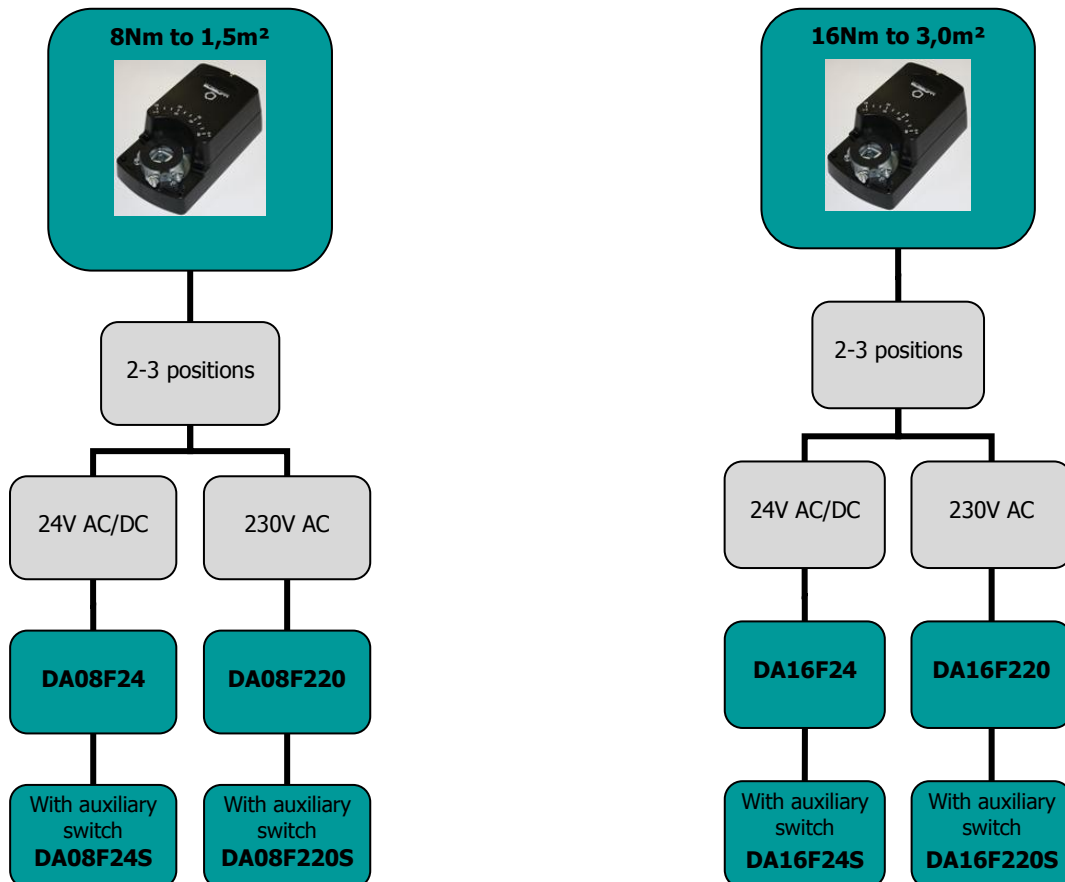
NON SPRING RETURN ACTUATORS



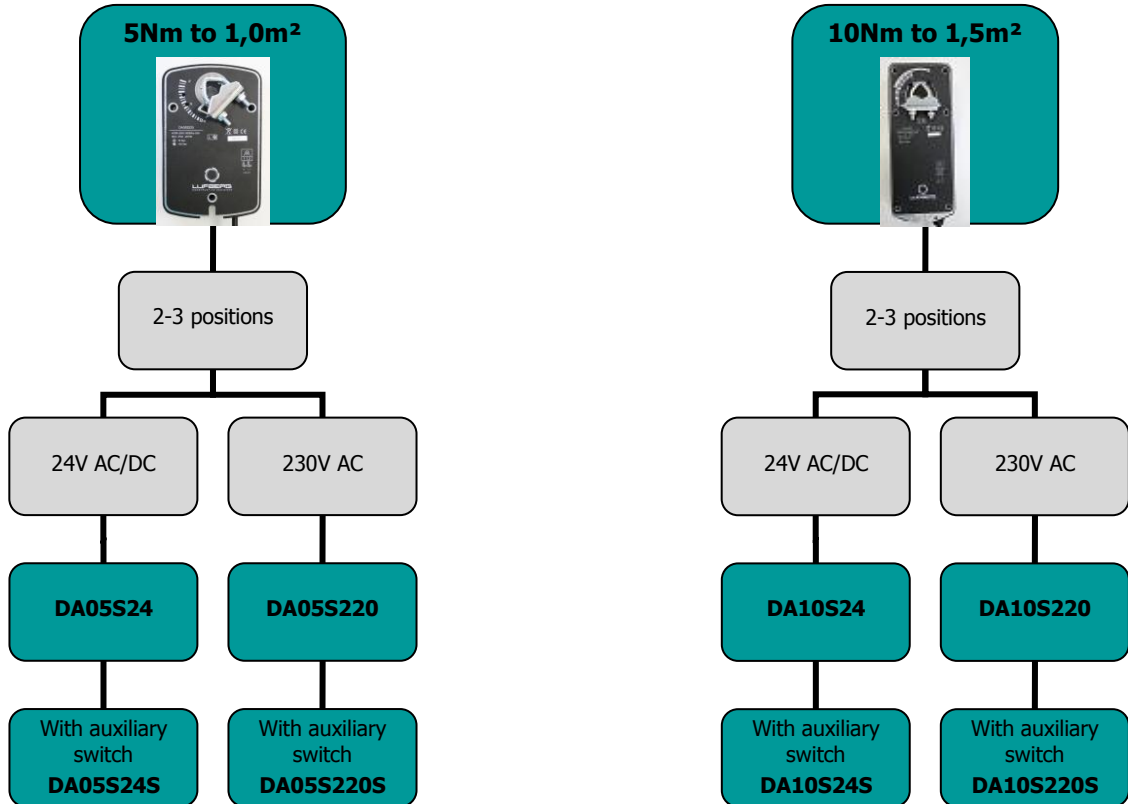
NON SPRING RETURN ACTUATORS



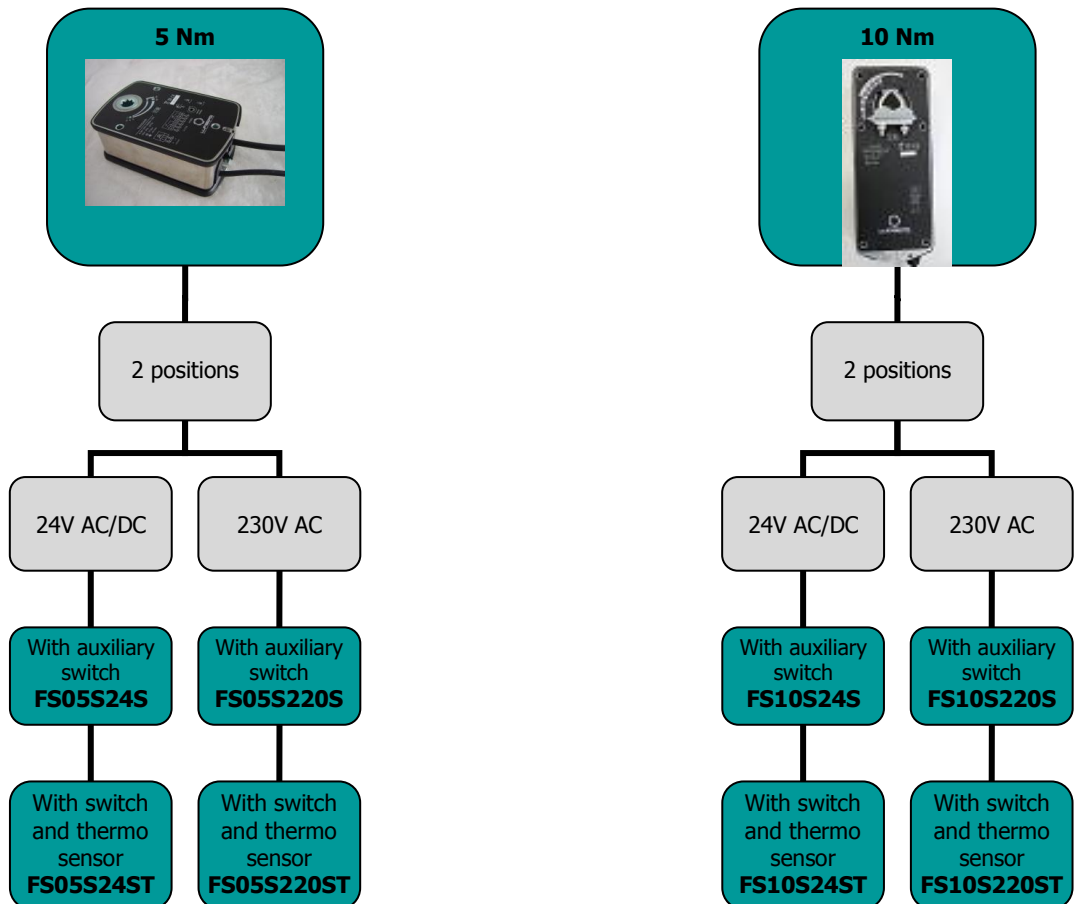
FAST RUNING NON SPRING RETURN ACTUATORS



SPRING RETURN ACTUATORS



ACTUATORS FOR FIRE AND SMOKE SHUTTERS

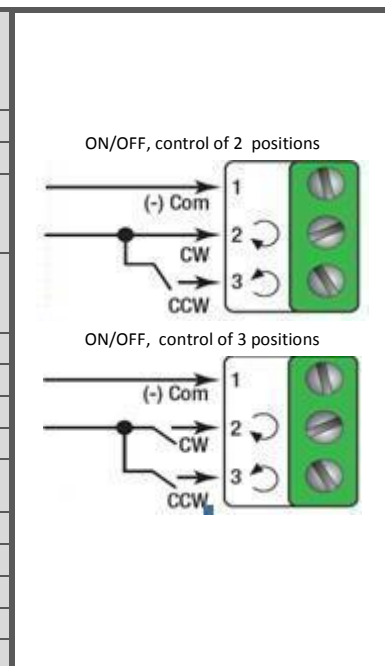


Actuators for air shutters 2Nm

Non spring return

DA02N..(S) TECHNICAL SPECIFICATIONS

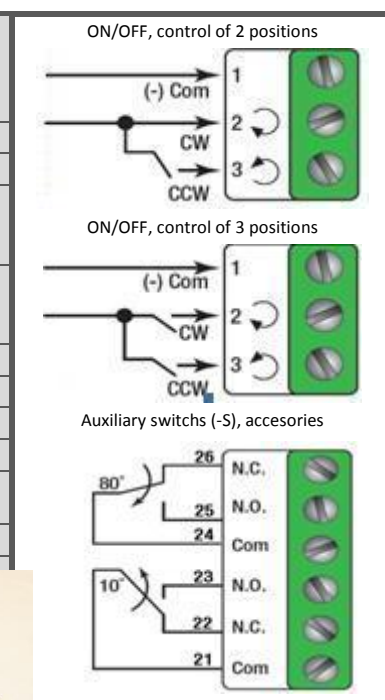
Power supply	Voltage: 24V AC/DC, 50/60 Hz or 230V AC, 50/60 Hz Power: 2 W (3 VA) or 1,5 W (1,5 VA)
Torque	2 Nm (max 0,4 m ²)
Runing time	25-35 seconds/0-90°
Auxiliary switches -(S)	1 controllible SPDT 1.5 A inductive load, 2,5 A resistant load 35 VA maximum for switch
Rotation angle	0~95° (93° mechanically), adjustment 5°~85° (5° step) Restriction 0°~30° и 90°~60° Direction of rotation might be selected on motherboard
Way out of gear	Button on the cover of the actuator
Mechanical connection	Circular shaft 6 – 16 mm, square shaft 8 – 12 mm
Electric connection	M16 x 1.5 screws of terminal 2.5mm ²
Protection level	IP54, actuator cover ABS
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation
Standards	CE a ISO 9000
Life cycle	60 000 rotation
Noise level	<45 dB(A) / 1 meter
Dimensions (HxWxD)	116 mm x 66,2 mm x 59 mm
Weight	0.6 kg



Actuators for air shutters 4Nm

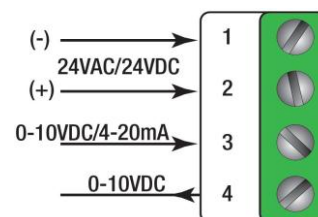
Non spring return

Power supply	Voltage: 24V AC/DC, 50/60 Hz or 230V AC, 50/60 Hz Power: 2.5 W (4.1 VA) or 4.1 W (5.0 VA)
Torque	4 Nm (max 0,8 m ²)
Runing time	35 seconds/0-90°
Auxiliary switches -(S)	2 controllible SPDT 1.5 A inductive load, 3 A resistant load 35 VA maximum for switch
Rotation angle	0~90(93° mechanically), adjustment 5°~85° (5° step) Restriction 0°~30° и 90°~60° Direction of rotation might be selected on motherboard
Way out of gear	Button on the cover of the actuator
Mechanical connection	Circular shaft 6 – 16 mm, square shaft 8 – 12 mm
Electric connection	M16 x 1.5 screws of terminal 2.5mm ²
Protection level	IP54, actuator cover ABS
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation
Standards	CE a ISO 9000
Life cycle	60 000 rotation
Noise level	<45 dB(A) / 1 meter
Dimensions (HxWxD)	146 mm x 85 mm x 65 mm
Weight	1.0 kg



DA04N24-P-I TECHNICAL SPECIFICATIONS

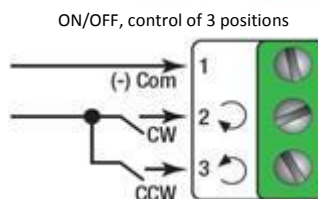
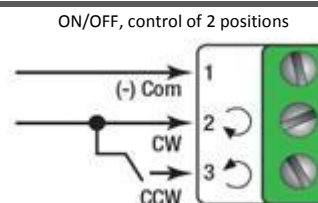
Power supply	Voltage: 24V AC/DC, 50/60 Hz Power: 2.5 W (4.1 VA)
Input signal	Proportional: 0 – 10 V DC or 4 – 20 mA
Feedback signal	Proportional: 0 – 10 V DC
Torque	4Nm (do 0,8 m ²)
Runing time	25-35 seconds/0-90°
Rotation angle	0~90° (93° mechanically), adjustment 5°~85° (5° step) Restriction 0°~30° и 90°~60° Direction of rotation might be selected on motherboard
Way out of gear	Button on the cover of the actuator
Mechanical connection	Circular shaft 6 - do 16mm, square shaft 8 - 12 mm
Electric connection	M16 x 1.5 screws of terminal 2.5mm ²
Protection level	IP54, actuator cover ABS
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation
Standards	CE a ISO 9000
Life cycle	60 000 rotation
Noise level	<45 dB(A) / 1 meter
Dimensions (HxWxD)	146 mm x 85 mm x 65 mm
Weight	1.0 kg



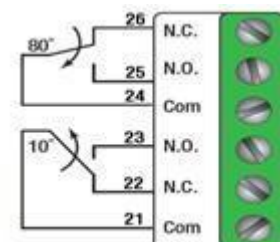
Actuators for air shutters 8Nm, 16Nm, 24Nm Non spring return

DA08/16/24N..(S) TECHNICAL SPECIFICATIONS

Power supply	Voltage: 24V AC/DC, 50/60 Hz or 230V AC, 50/60 Hz Power: 3.9 W (6.5 VA) or 4.8 W (6.5 VA)
Torque	8Nm(max 1,5 m ²); 16Nm (max 3,0m ²); 24Nm (max 4,5 m ²)
Runing time	8 Nm - 30 seconds /0-90° 16 Nm - 80 seconds /0-90° 24 Nm - 125 seconds /0-90°
Auxiliary switches -(S)	2 controllable SPDT 1.5 A inductive load, 3 A resistant load 35 VA maximum for switch
Rotation angle	0~90° (93° mechanically), adjustment 5°~85° (5° step) Direction of rotation might be selected on motherboard
Way out of gear	Button on the cover of the actuator
Mechanical connection	Circular shaft 10 - 20 mm, square shaft 10 - 16 mm
Electric connection	M16 x 1.5 screws of terminal 2.5mm ²
Protection level	IP54, actuator cover ABS
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation
Standards	CE a ISO 9000
Life cycle	60 000 rotation
Noise level	<45 dB(A) / 1 meter
Dimensions (HxWxD)	180 mm x 100 mm x 68 mm
Weight	1.26 kg

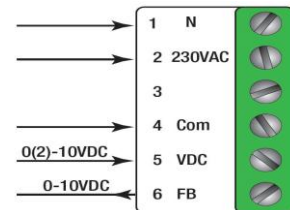
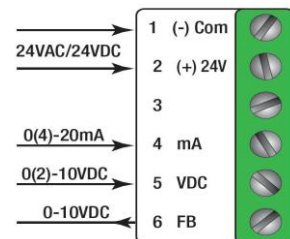


Auxiliary switches -(S), accessories

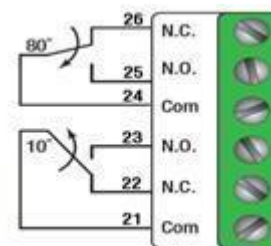


DA08/16/24N..-P-PI-(S) TECHNICAL SPECIFICATIONS

Power supply	Voltage: 24V AC/DC, 50/60 Hz or 230V AC, 50/60 Hz Power: 4.0 W (6.5 VA) or 4.8 W (6.5 VA)
Input signal	Proportional: 0(2) – 10 V DC (Ri 100 k Ω) or (0)4 – 20 mA (Ri 500 Ω) Option of various switches on the motherboard.
Feedback signal	Proportional: 0(2) – 10 V DC Resistive load >50 k Ω
Torque	8Nm (max 1,5 m ²); 16Nm(max 3,0 m ²); 24Nm (max 4,5 m ²)
Runing time	8 Nm - 30 seconds/0-90° 16 Nm - 80 seconds/0-90° 24 Nm - 125 seconds /0-90°
Auxiliary switches -(S)	2 controllable SPDT 1.5 A inductive load, 3 A resistant load 35 VA maximum for switch
Rotation angle	0~90° (93° mechanically), adjustment 5°~85° (5° step) Direction of rotation might be selected on motherboard
Way out of gear	Button on the cover of the actuator
Mechanical connection	Circular shaft 10 - 20 mm, square shaft 10 - 16 mm
Electric connection	M16 x 1.5 screws of terminal 2.5mm ²
Protection level	IP54, actuator cover ABS
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation
Standards	CE a ISO 9000
Life cycle	60 000 rotation
Noise level	<45 dB(A) / 1 meter
Dimensions (HxWxD)	180 mm x 100 mm x 68 mm
Weight	1.26 kg



Auxiliary switches -(S), accesories

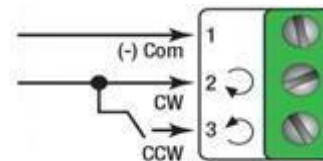


Actuators for air shutters 32Nm Non spring return

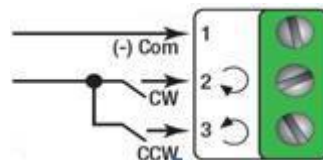
DA32N..(S) TECHNICAL SPECIFICATIONS

Power supply	Voltage: 24V AC/DC, 50/60 Hz or 230V AC, 50/60 Hz Power: 3.9W (6.5 VA) or 4.8 W (6.5 VA)
Torque	32Nm (do 6,0 m ²);
Runing time	150 seconds/0-90°
Auxiliary switches -(S)	2 controllable SPDT 1.5 A inductive load, 3 A resistant load 35 VA maximum for switch
Rotation angle	0~90° (93° mechanically), adjustment 5°~85° (5° step) Direction of rotation might be selected on motherboard
Way out of gear	Button on the cover of the actuator
Mechanical connection	Circular shaft 10 - 20 mm, square shaft 10 - 16 mm
Electric connection	M16 x 1.5 screws of terminal 2.5mm ²
Protection level	IP54, actuator cover ABS
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation
Standards	CE a ISO 9000
Life cycle	60 000 rotation
Noise level	<45 dB(A) / 1 meter
Dimensions (HxWxD)	180 mm x 100 mm x 68 mm
Weight	1.26 kg

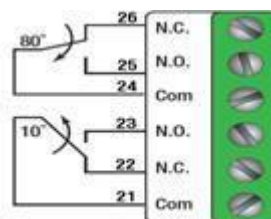
ON/OFF, control of 2 positions



ON/OFF, control of 3 positions

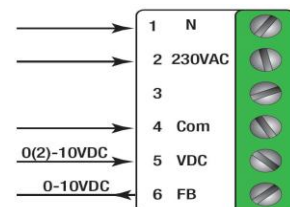
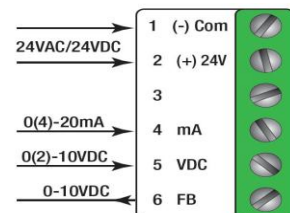


Auxiliary switches -(S), accesories

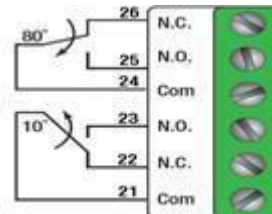


DA32N..-P-PI-(S) TECHNICAL SPECIFICATIONS

Power supply	Voltage: 24V AC/DC, 50/60 Hz or 230V AC, 50/60 Hz Power: 4.0 W(6.5 VA) or 4.8 W (6.5 VA)
Input signal	Proportional: 0(2) – 10 V DC (Ri 100 kOm) or (0)4 – 20 mA(Ri 500 Om) Option of various switches on the motherboard
Feedback signal	Proportional: 0(2) – 10 V DC Resistive load >50 kOm
Torque	32Nm (max 6,0 m ²)
Runing time	150 seconds/0-90°
Auxiliary switches -(S)	2 adjustable SPDT 1.5 A inductive load, 3 A resistant load 35 VA maximum for switch
Rotation angle	0~90° (93° mechanically), adjustment 5°~85° (5° step) Direction of rotation might be selected on motherboard
Way out of gear	Button on the cover of the actuator
Mechanical connection	Circular shaft 10 - 20 mm, square shaft 10 - 16 mm
Electric connection	M16 x 1.5 screws of terminal 2.5mm ²
Protection level	IP54, actuator cover ABS
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation
Standards	CE a ISO 9000
Life cycle	60 000 rotation
Noise level	<45 dB(A) / 1 meter
Dimensions (HxWxD)	180 mm x 100 mm x 68 mm
Weight	1.27 kg



Auxiliary switches -(S), accessories

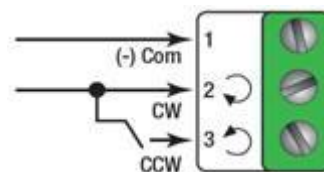


Actuators for air shutters 8Nm, 16Nm
Fast running non spring return actuators

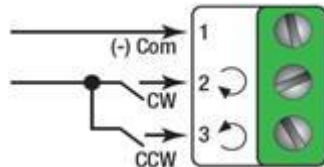
DA08/16F..(S) TECHNICAL SPECIFICATIONS

Power supply	Voltage: 24V AC/DC, 50/60 Hz or 230V AC, 50/60 Hz Power: 3.9 W (6.5 VA) or 4.8 W (6.5 VA)
Torque	8Nm(max 1,5 m ²); 16Nm (max 3,0mm ²)
Runing time	8 Nm - 8 seconds/0-90° 16 Nm - 16 seconds/0-90°
Auxiliary switches -(S)	2 adjustable SPDT 1.5 A inductive load, 3 A resistant load 35 VA maximum for switch
Rotation angle	0~90° (93° mechanically), adjustment 5°~85° (5° step) Direction of rotation might be selected on motherboard
Way out of gear	Button on the cover of the actuator
Mechanical connection	Circular shaft 10 - 20 mm, square shaft 10 - 16 mm
Electric connection	M16 x 1.5 screws of terminal 2.5mm ²
Protection level	IP54, actuator cover ABS
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation
Standards	CE a ISO 9000
Life cycle	60 000 rotation
Noise level	<45 dB(A) / 1 meter
Dimensions (HxWxD)	180 mm x 100 mm x 68 mm
Weight	1.2 kg

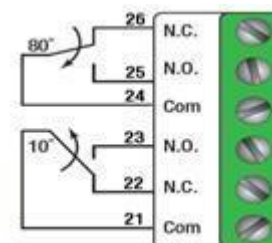
ON/OFF, control of 2 positions



ON/OFF, control of 3 positions



Auxiliary switches -(S), accessories



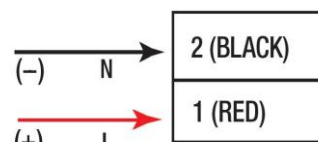
DA05S..(S)

TECHNICAL SPECIFICATIONS

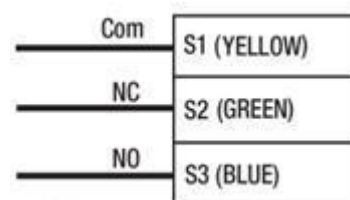
Power supply	Voltage:	24V AC/DC, 50/60 Hz;	230V AC, 50/60 Hz
	Power		
	Stand by	7.2 W / 2.5 W	4.2 W / 2.5 W
	For wire sizing:	10.0 VA	10.0 VA
Torque	5Nm (max 1,0 m ²)		
Runing time	50..70 seconds/0-90°		
	Spring return <20 seconds /0-90°		
Auxiliary switches -(S)	1.5 A inductive load, 3 A resistant load		
	35 VA maximum for switch		
	Adjustment 0~90° on the cover		
Rotation angle	-5~90° (95° mechanically), adjustment 5°~85° (5° step) Selectable direction of rotation by reversing actuator		
Way out of gear	No		
Mechanical connection	Circular shaft 10 - 16 mm; square shaft 7 - 11 mm Minimal height of the piston rod: 40 mm		
Electric connection	Supplied with connecting cable lenght 1 m		
Protection level	IP54		
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation		
Standards	CE a ISO 9000		
Life cycle	60 000 rotation		
Noise level	<45 dB(A) / 1 meter		
Dimensions (HxWxD)	156 mm x 98 mm x 84 mm		
Weight	1.9 kg		



24 VAC/DC, 230VAC



Auxiliary switches -(S), accessories



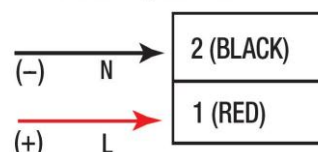
DA10S..(S)

TECHNICAL SPECIFICATIONS

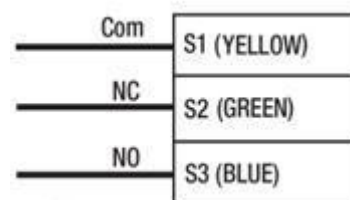
Power supply	Voltage:	24V AC/DC, 50/60 Hz;	230V AC, 50/60 Hz
	Power		
	Stand by	7.0 W / 2.0 W	8.0 W / 5.5 W
	For wire sizing:	10.0 VA	10.0 VA
Torque	10Nm (max 1,5 m ²)		
Runing time	70 seconds/0-90°		
	Spring return <25 seconds/0-90°		
Auxiliary switches -(S)	1.5 A inductive load, 3 A resistant load		
	35 VA maximum for switch		
	Adjustment 0~90° on the cover		
Rotation angle	-5~90° (95° mechanically), adjustment 5°~85° (5° step) Selectable direction of rotation by reversing actuator Manual fixation is possible in any position		
Way out of gear	No.		
Mechanical connection	Circular shaft 8 - 21 mm; square shaft 6 - 15 mm Minimal height of the piston rod: 40 mm		
Electric connection	Supplied with connecting cable lenght: 1 m		
Protection level	IP54		
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation		
Standards	CE a ISO 9000		
Life cycle	60 000 rotation		
Noise level	<45 dB(A) / 1 meter		
Dimensions (HxWxD)	249,5 mm x 101 mm x 78 mm		
Weight	2,7 kg		



24 VAC/DC, 230VAC



Auxiliary switches -(S), accessories



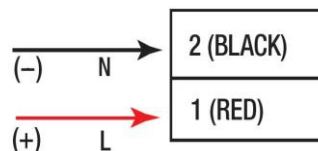
Actuators for fire and smoke shutters 05Nm
Spring return actuators

FS05S..(ST)

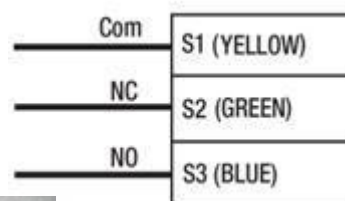
TECHNICAL SPECIFICATIONS

Power supply	Voltage:	24V AC/DC, 50/60 Hz;	230V AC, 50/60 Hz
	Power:		
	Operating:	7.2 W / 2.5 W	4.2 W / 2.5 W
	For wire sizing:	10.0 VA	10.0 VA
Torque	5Nm		
Runing time	50..70 seconds /0-90°		
	Spring return <20 seconds/0-90°		
Auxiliary switches -(S)	2 adjustable SPDT		
	1.5 A inductive load, 3 A resistant load		
	35 VA maximum for switch		
	Adjustment 0~90° on the cover Thermal sensor		
Rotation angle	-5~90° (95° mechanically) Selectable direction of rotation by reversing actuator		
Way out of gear	ON/OFF		
Mechanical connection	No		
Electric connection	Supplied with connecting cable lenght: 1 m		
Protection level	IP54		
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation		
Standards	CE a ISO 9000		
Life cycle	60 000 rotation		
Noise level	<45 dB(A) / 1 meter		
Dimensions (HxWxD)	156 mm x 98 mm x 59 mm		
Weight	1.9 kg		

24 VAC/DC, 230VAC



Auxiliary switches -(S), accessories



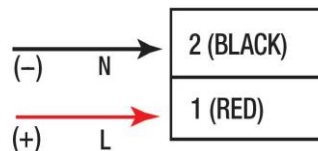
Actuators for fire and smoke shutters 10Nm
Spring return actuators

FS10S..(ST)

TECHNICAL SPECIFICATIONS

Power supply	Voltage:	24V AC/DC, 50/60 Hz;	230V AC, 50/60 Hz
	Power:		
	Operating:	6,5 W / 2.5 W	5,0 W / 2,0 W
	For wire sizing:	10.0 VA	10.0 VA
Torque	10Nm		
Runing time	100 seconds/0-90°		
	Spring return <20 seconds/0-90°		
Auxiliary switches -(S)	2 adjustable SPDT		
	1.5 A inductive load, 3 A resistant load		
	35 VA maximum for switch		
	Adjustment 0~90° on the cover Thermal sensor		
Rotation angle	-5~90° (95° mechanically) Selectable direction of rotation by reversing actuator		
Way out of gear	ON/OFF		
Mechanical connection	No		
Electric connection	Supplied with connecting cable lenght: 1 m		
Protection level	IP54		
Conditions	Labour temperature from -20 to 50°C; 5 - 95% RH, without condensation Storage temperature from -40 to 70°C; 5 - 95% RH, without condensation		
Standards	CE a ISO 9000		
Life cycle	60 000 rotation		
Noise level	<45 dB(A) / 1 meter		
imensions (HxWxD)	250 mm x 98 mm x 78 mm		
Weight	2.7 kg		

24 VAC/DC, 230VAC



Auxiliary switches -(S), accessories



Next offer for you from Lufberg s.r.o.

FV - 2-way and 3-way ball valves for fan-coil with actuator

- nominal diametr: from DN15, DN20
- temperature: from 5 to 95 C
- protection: IP40



FV - 2-way and 3-way zone valve with actuator

- nominal diametr: DN15, DN20, DN 25, DN32
- temperature: from 1 to 95 C
- protection: IP65

BV –2-way and 3-way ball valve

- Nominal diametr: from DN15 to DN50
- Temperature: from -5 to 120 C



Sample of using BV ball valve with damper actuator DA by adapter BR



Thermostats for Fan-coils and next installation



We can offer full range of electronics and digital thermostats for fan-coils and all heating systems (adjustable, non-adjustable thermostat, PID temperature regulators, thermostats with LCD display etc.