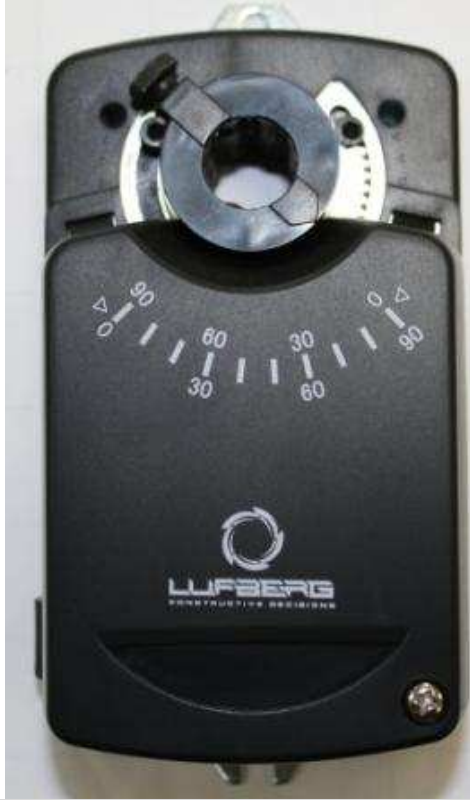


Actuators for air shutters 4Nm 2-3 points control



- Lufberg presents actuators with torque 4Nm for using in heating, air conditioning and cooling systems.
- High quality level DA04N serie are intended for small and middle size shutters controlling and water shutters also (with special adapter)
- Their small size and clever design guarantee ideal solution for application in small spaces.

Advantages:

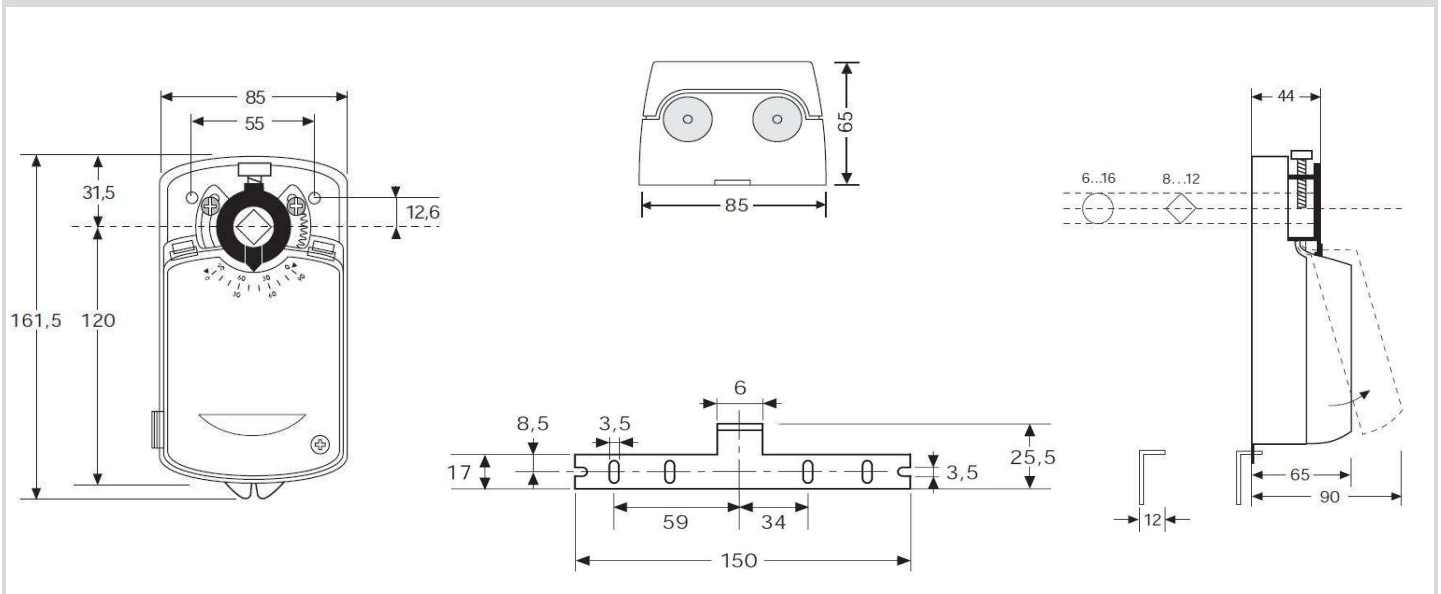
- 2 or 3 points control
- Independent opening time when loaded
- Possibility to connect up to five actuators in parallel connection
- Shaft locking by screw
- Simply application by multi-purpose adaper for:
 - Round bars with diameter 6-16mm;
 - Square bars with diameter 8-12 mm
- Low level of noise in operation
- Mechanical locking of rotation angle
- Outlet of gearing by switch on the cover
- Two auxiliary switches possible
- Low energy intensity in the final position
- Equipped by chock for protection of engine body overturning

Selection model table

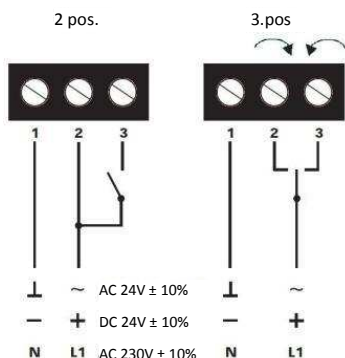
Torque	Runing time	Shutter´s area	Voltage	Auxiliary switches	Model
4 Nm	35sec	max 0.8 m ²	24V AC/DC	No	DA04N24
				2 SPDT*	DA04N24S
			230V AC	No	DA04N220
				2 SPDT*	DA04N220S

*SPDT (Single-Pole Double-Throw) – monopolar group of switching contacts

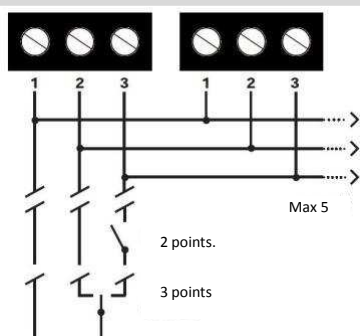
Dimensions and connecting dimension (mm)



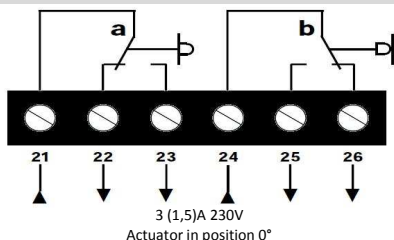
Wiring diagram



Parallel connection



Auxiliary switches



Technical specification

Model	DA04N24	DA04N220
Torque	4 Nm	4 Nm
Shutter's area	max 0.8 m ²	max 0.8 m ²
Runing time	35 sec	35 sec
Voltage	24V AC/DC	230V AC
Frequency	50/60 Hz	50/60 Hz
Required performance:		
- turning:	2.5 W	4.1 W
- extreme points	0.85 W	3.0 W
Computation power	4.1 VA	5.0 VA
Weight	1.0 kg	1.0 kg
Noise (at work), 1m	<45 dB(A)	<45 dB(A)
Turning angle	0~90° (93° mechanically)	0~90° (93° mechanically)
Maximal angle rotation	0°~30° and 90°~60°	0°~30° and 90°~60°
Adjustment of angle	5°~85° (5° step)	5°~85° (5° step)
Control signal	2-3 points	2-3 points
Feedback signal	no	no
Connecting cable	1 m	1 m
Reqired voltage for auxiliary switches	3 (1.5)A/230V	3 (1.5)A/230V
Life cycles	60000 cycles	60000 cycles
Level of protection	IP54	IP54
Protection class	III	II
Outside temperature	-30~+50 °C	-30~+50 °C
Suitable humidity	5~95%, Without condenastion	5~95%, Without condenastion
Storage temperature	-40~+70 °C	-40~+70 °C
Standards	CE, ISO9000, GOST	CE, ISO9000, GOST
Assembling methods	Non specified	Non specified



- When torque calculated is necessary to consider the technical information from producer of the air shutter especially voltage, type and place of installation, technical requirements of flowing air.
- Actuator is allowed to be mounded and used with voltage condition only when all requirements mentioned in charter have met.
- Actuator Is allowed to used only with conditions met in the class of protection required by producer.

Auxiliary switches regulation and adjustment of rotated direction

Indicate of angle position can be changed by switches **a** + **b** as needed

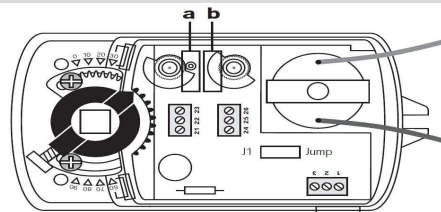
Deatful adjustment:

Switch **a** -> 10° Switch **b** -> 80°

Direction of rotation can be changed by **J1** conector

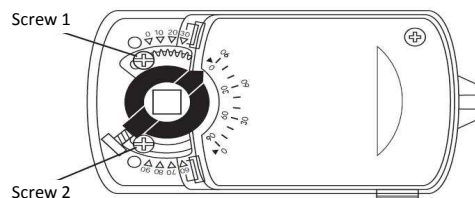
Deatful adjustment:

- Anti-clockwise.



Regulation of the rotation angle boundaries

Working range 90° can be reduced to 30° per end position by screws 1 and 2.



Actuators for air shutters 8Nm, 16Nm, 24Nm 2-3 points control



- Lufberg presents actuators with torque 8Nm, 16Nm, 24Nm for using in heating, air conditioning and cooling systems.
- High quality level DA08N, DA16N, DA24N serie are intended for small and middle size shutters controlling and water shutters also (with special adapter)

Advantages:

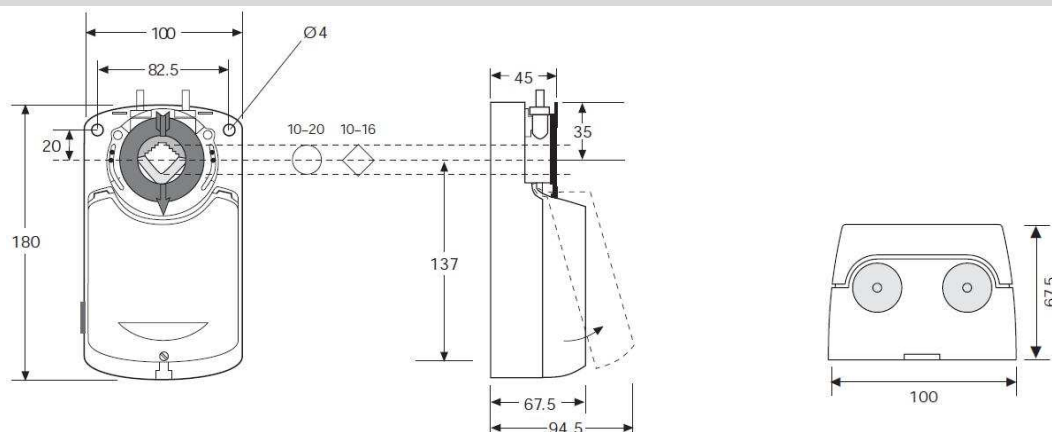
- 2 or 3 points control
- Independent opening time when loaded
- Possibility to connect up to five actuators in parallel connection
- Multi-purpose adapter for direct mounting
- Simply application by multi-purpose adapter for:
 - Round bars with diameter 10 - 20 mm;
 - Square bars with diameter 10 - 16 mm.
- Low level of noise in operation
- Selection of the rotation
- Mechanical locking of rotation angle
- Outlet of gearing by switch on the cover
- Two auxiliary switches possible
- Low energy intensity in the final position
- Equipped by chock for protection of engine body overturning

Selection model table

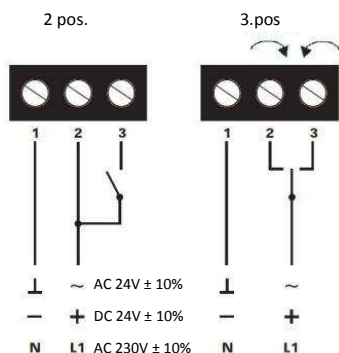
Torque	Runing time	Shutter ´s area	Voltage	Auxiliary switches	Model
8 Nm	30sec	max 1.5m ²	24V AC/DC	no 2 SPDT*	DA08N24 DA08N24S
			230V AC	no 2 SPDT*	DA08N220 DA08N220S
16 Nm	80sec	max 3.0m ²	24V AC/DC	no 2 SPDT*	DA16N24 DA16N24S
			230V AC	no 2 SPDT*	DA16N220 DA16N220S
24 Nm	125sec	max 4.5m ²	24V AC/DC	no 2 SPDT*	DA24N24 DA24N24S
			230V AC	no 2 SPDT*	DA24N220 DA24N220S

*SPDT (Single-Pole Double-Throw) – monopolar group of switching contacts

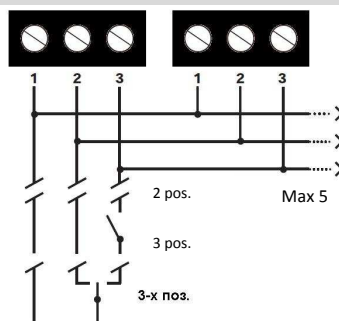
Dimensions and connecting dimension (mm)



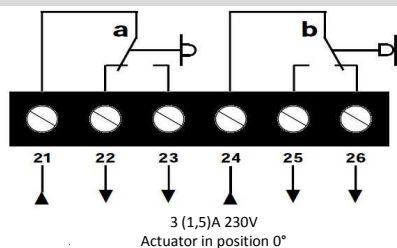
Wiring diagram



Parallel connection



Auxiliary switches



Technical specification

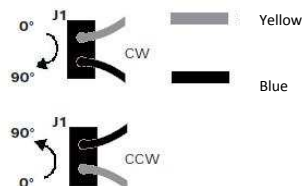
Model	DA..N24P	DA..N24I
Torque	10 Nm/16Nm/24Nm	10 Nm/16Nm/24Nm
Shutter 's area	1.5m ² /3.0m ² /4.5m ²	1.5m ² /3.0m ² /4.5 ²
Runing time	30/80/125	30/80/125
Voltage	24V AC/DC	230V AC
Frequency	50/60 Hz	50/60 Hz
Required performance:		
- turning	3.9 W	4.8 W
- extreme points	0.4 W	1.2 W
Computation power	6.5 VA	6.5 VA
Weight	1.26 kg	1.26 kg
Noise (at work), 1m	<45 dB(A)	<45 dB(A)
Turning angle	0~95° (93° mechanically)	0~95° (93° mechanically)
Adjustment of angle	5°~85° (5° step)	5°~85° (5° step)
Control signal	2-3 points	2-3 points
Feedback signal	no	no
Connecting cable	1 m	1 m
Reqired voltage for auxiliary switches	3 (1.5)A/230V	3 (1.5)A/230V
Life cycles	60000 cycles	60000 cycles
Level of protection	IP54	IP54
Protection class	III	II
Outside temperature	-30~+50 °C	-30~+50 °C
Suitable humidity	5~95%, Without condenastion	5~95%, Without condensation
Storage temperature	-40~+70 °C	-40~+70 °C
Standards	CE, ISO9000, GOST	CE, ISO9000, GOST
Assembling methods	Non specified	Non specified



- When torque calculated is necessary to consider the technical information from producer of the air shutter especially voltage, type and place of installation, technical requirements of flowing air.
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- Actuator Is allowed to used only with conditions met in the class of protection required by producer

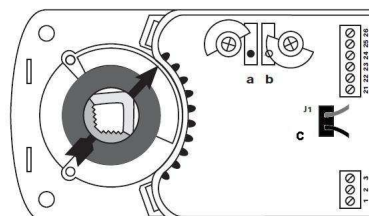
Selection of the rotation

Direction of rotation can be changed by connector J1
Deatful adjustment:
- clockwise.

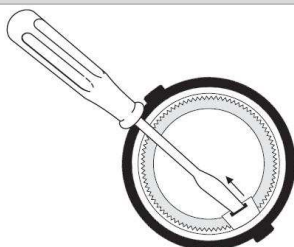


Regulation of the auwiliary switches

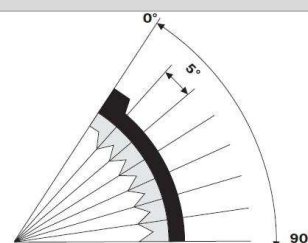
Indication of angle position can be changed by two auxiliary switches a and b
Deatful adjustment:
Switch a - 10° switch b - 80°



Releasing the adapter



Change of the angle of rotation



Actuators for air shutters 8Nm, 16Nm, 24Nm 2-3 points control



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- High quality level DA08N, DA16N, DA24N serie are intended for small and middle size shutters controlling and water shutters also (with special adapter)

Advantages:

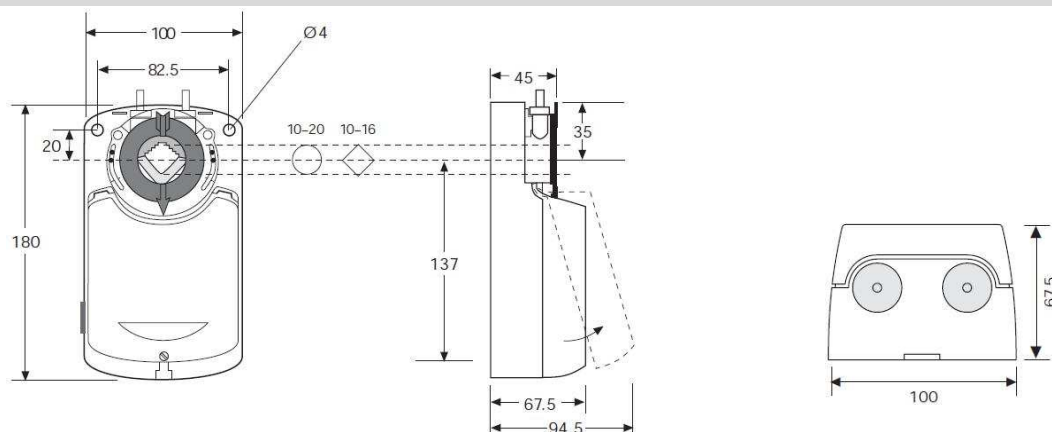
- 2 or 3 points control
- Independent opening time when loaded
- Possibility to connect up to five actuators in parallel connection
- Multi-purpose adapter for direct mounting
- Simply application by multi-purpose adapter for:
 - Round bars with diameter 10 - 20 mm;
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- Selection of the rotation
- Mechanical locking of rotation angle
- Outlet of gearing by switch on the cover
- Two auxiliary switches possible
- Low energy intensity in the final position
- Equipped by chock for protection of engine body overturning

Selection model table

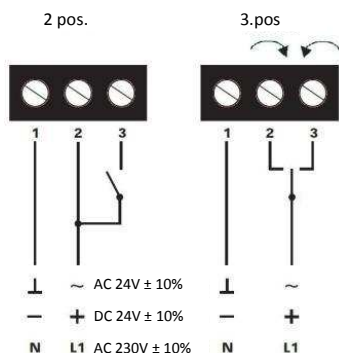
Torque	Runing time	Shutter ´s area	Voltage	Auxiliary switches	Model
8 Nm	30sec	max 1.5m ²	24V AC/DC	no 2 SPDT*	DA08N24 DA08N24S
			230V AC	no 2 SPDT*	DA08N220 DA08N220S
16 Nm	80sec	max 3.0m ²	24V AC/DC	no 2 SPDT*	DA16N24 DA16N24S
			230V AC	no 2 SPDT*	DA16N220 DA16N220S
24 Nm	125sec	max 4.5m ²	24V AC/DC	no 2 SPDT*	DA24N24 DA24N24S
			230V AC	no 2 SPDT*	DA24N220 DA24N220S

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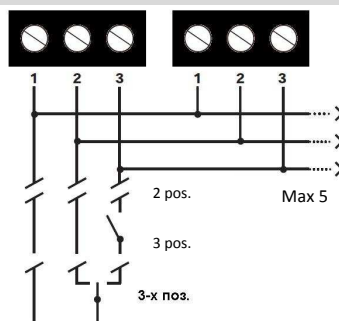
Dimensions and connecting dimension (mm)



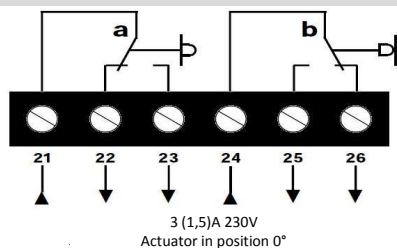
Wiring diagram



Parallel connection



Auxiliary switches



Technical specification

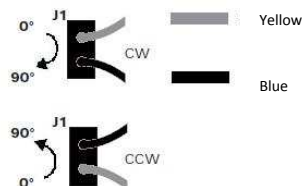
Model	DA..N24P	DA..N24I
Torque	10 Nm/16Nm/24Nm	10 Nm/16Nm/24Nm
Shutter 's area	1.5m ² /3.0m ² /4.5m ²	1.5m ² /3.0m ² /4.5 ²
Runing time	30/80/125	30/80/125
Voltage	24V AC/DC	230V AC
Frequency	50/60 Hz	50/60 Hz
Required performance:		
- turning	3.9 W	4.8 W
- extreme points	0.4 W	1.2 W
Computation power	6.5 VA	6.5 VA
Weight	1.26 kg	1.26 kg
Noise (at work), 1m	<45 dB(A)	<45 dB(A)
Turning angle	0~95° (93° mechanically)	0~95° (93° mechanically)
Adjustment of angle	5°~85° (5° step)	5°~85° (5° step)
Control signal	2-3 points	2-3 points
Feedback signal	no	no
Connecting cable	1 m	1 m
Reqired voltage for auxiliary switches	3 (1.5)A/230V	3 (1.5)A/230V
Life cycles	60000 cycles	60000 cycles
Level of protection	IP54	IP54
Protection class	III	II
Outside temperature	-30~+50 °C	-30~+50 °C
Suitable humidity	5~95%, Without condenastion	5~95%, Without condensation
Storage temperature	-40~+70 °C	-40~+70 °C
Standards	CE, ISO9000, GOST	CE, ISO9000, GOST
Assembling methods	Non specified	Non specified



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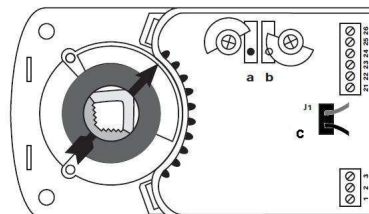
Selection of the rotation

Direction of rotation can be changed by connector J1
Deatful adjustment:
- clockwise.

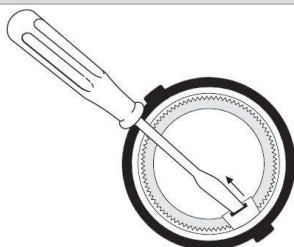


Regulation of the auwiliary switches

Indication of angle position can be changed by two auxiliary switches a and b
Deatful adjustment:
Switch a - 10° switch b - 80°



Releasing the adapter



Change of the angle of rotation

