



DAMPER ACTUATORS, 2-, 3-POINT AND PROPORTIONAL CONTROL (2 Nm)

DAK, DMK

FUNCTION

2- and 3-point or modulating 2...10 Vdc damper control.

APPLICATIONS

Designed for applications with small dampers (0.5 m²) of ventilation and air handling units.

FEATURES

- universal adapter for easy direct mounting
- shaft dimension Ø 6...16 mm / 5...11 mm square
- 40 mm minimum shaft length
- anti-rotation bracket
- manual override by push button when required
- selectable direction of rotation
- adjustable angle of rotation, mechanical end stops
- 1 adjustable SPDT auxiliary switches on request

TYPE	POWER SUPPLY	SIGNAL CONTROL
DAK24	24 Vac/dc	2-, 3-point
DAK24S	24 Vac/dc	2-, 3-point
DAK230	230 Vac	2-, 3-point
DAK230S	230 Vac	2-, 3-point
DMK24	24 Vac/dc	2...10 Vdc

S models with 1 fixed auxiliary switch positioned on 10°

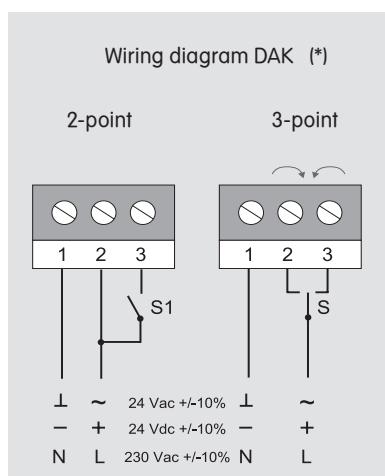
Actuator	DAK24	DAK230	DMK24
Damper area (*)	m ²	0.5	0.5
Torque	Nm	2	2
Power supply		24 Vac/Vdc	24 Vac/Vdc
Frequency	Hz	50...60	50...60
Power consumption			
W		2.0	2.5
VA		3.0	4.5
Stroke time	s	35...45	35...45
Weight	g	600	600
Control signal		2-, 3-point	2-, 3-point
Aux. switch rating (only DAK...S)		1x SPDT 5 (2.5) A / AC 250 V	1x SPDT 5 (2.5) A / AC 250 V
Rotation angle:		95°	95°
Protection class		III	II
Degree of protection		IP54	IP54
Room temperature		-20...+50°C	-20...+50°C
Room humidity		5...95% r.h.	5...95% r.h.
Noise level		max 45 dB	max 45 dB
Standards		CE	CE

(*) the indication of the damper area is not significant, the data that must be taken into account is the value of the torque in Nm.



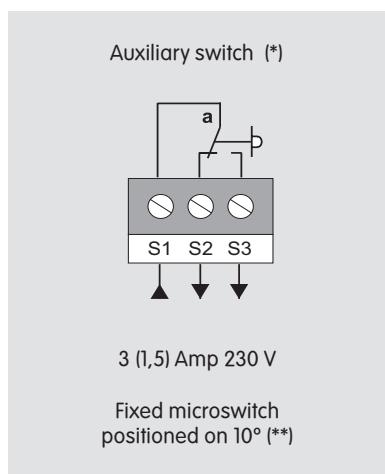
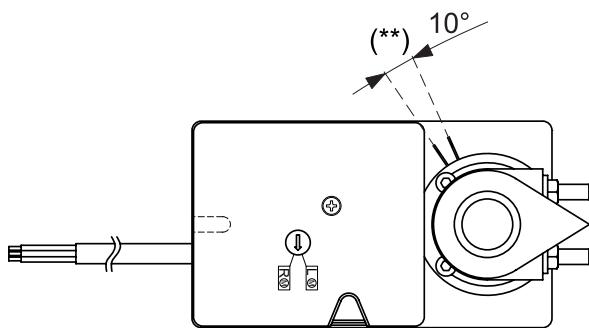
DAMPER ACTUATORS, 2-, 3-POINT AND PROPORTIONAL CONTROL (2 Nm)

DAK , DMK



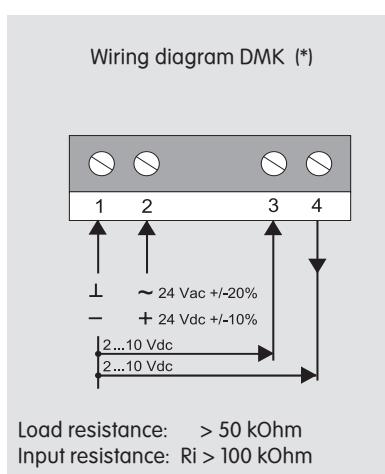
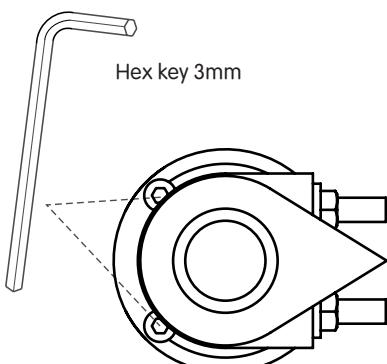
Direction of rotation setting

The direction of rotation can be changed by moving the switch to the position L or R.



Limitation of rotation angle

1. Loosen the screw of the mechanical limiter
2. Move the limiter to the appropriate position
3. Tighten the screw

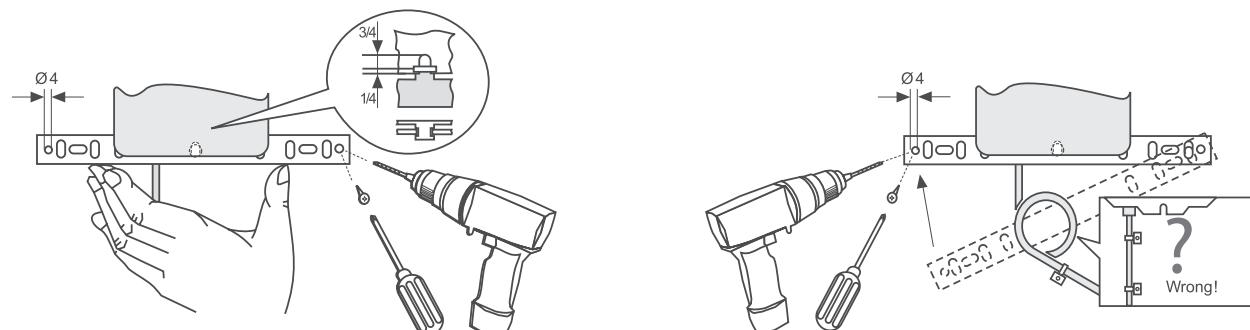


(*) Refer to the cable numbering

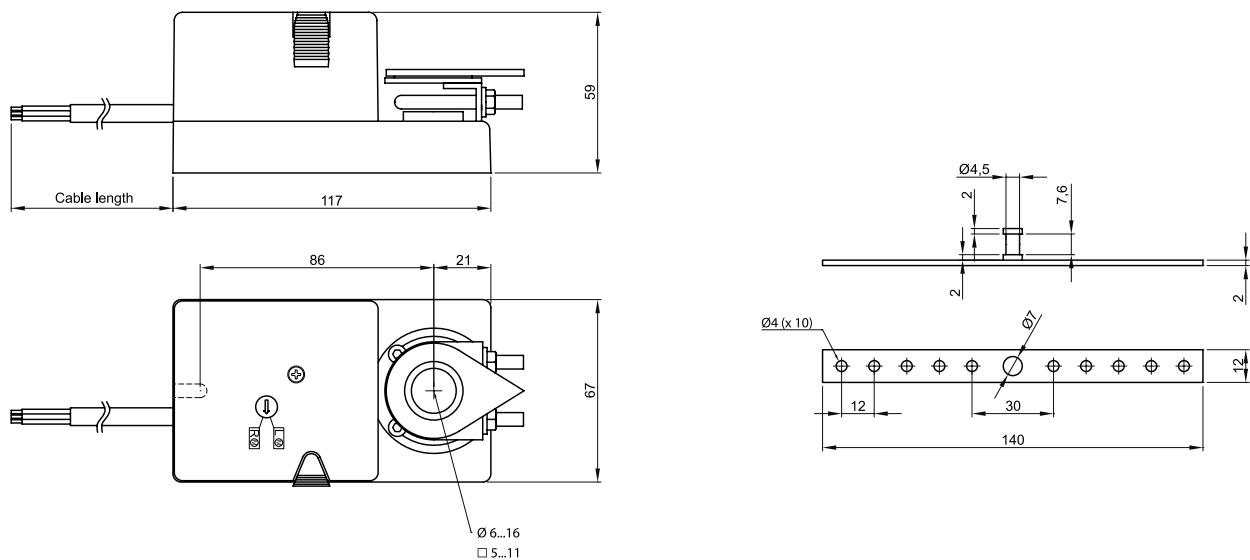
DAMPER ACTUATORS, 2-, 3-POINT AND PROPORTIONAL CONTROL (2 Nm)

DAK, DMK

INSTALLATION



DIMENSIONS (mm)





DAMPER ACTUATORS, 2-, 3-POINT AND PROPORTIONAL CONTROL (4 Nm)

DAN, DMN

FUNCTION

2- and 3-point or proportional damper control.

APPLICATIONS

Well-suited for applications with small dampers (up to 0.8 m²) in ventilation and air handling units.

FEATURES

- universal adapter for easy mounting
- shaft dimensions Ø 10...16 mm / 10...12 mm square
- minimum shaft length 50 mm
- anti-rotation bracket
- manual override with push-button
- direction of rotation selectable
- angle of rotation adjustable
- 2 microswitches SPDT
- power saving at end stops

TYPE	POWER SUPPLY	SIGNAL CONTROL
DAN24	24 Vac/dc	2-, 3-point
DAN24S	24 Vac/dc	2-, 3-point
DAN230	230 Vac	2-, 3-point
DAN230S	230 Vac	2-, 3-point
DMN24	24 Vac/dc	0...10V dc

S models with 2 auxiliary switches

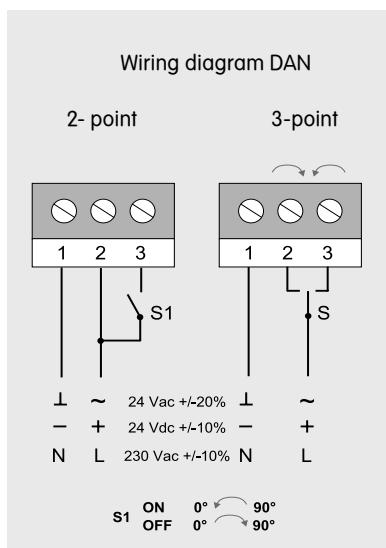
Actuator	DAN24	DAN230	DMN24
Damper area (*)	m ²	1	1
Torque	Nm	4	4
Power supply		24 Vac/Vdc	230 Vac
Frequency	Hz	50...60	50...60
Power consumption			
- operating	W	2.5	4.0
- at end stops	W	0.85	3.0
For wire sizing	VA	4.1	5.0
Stroke time	s	35	35
Weight	g	900	1000
Control signal		2-, 3-point	2-, 3-point
Aux. switch rating		3(1.5) A / AC 230 V	3(1.5) A / AC 230 V
Rotation angle:			
- operating		90°	90°
- limitation		5...85° with 5° steps	5...85° with 5° steps
Protection class		III	II
Degree of protection		IP54	IP54
Room temperature		-20 ... +50 °C	-20 ... +50 °C
Room humidity		5...95% r.h.	5...95% r.h.
Noise level		max 45 dB	max 45 dB
Standards		CE	CE

(*) the indication of the damper area is not significant, the data that must be taken into account is the value of the torque in Nm.



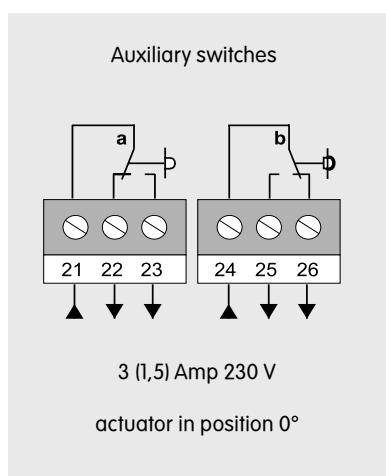
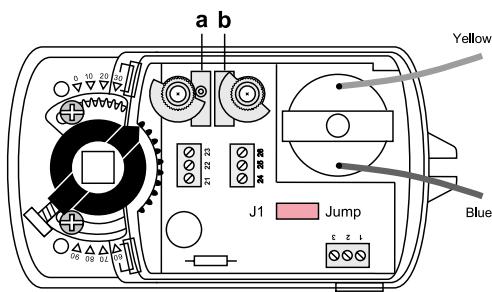
DAMPER ACTUATORS, 2-, 3-POINT AND PROPORTIONAL CONTROL (4 Nm)

DAN , DMN



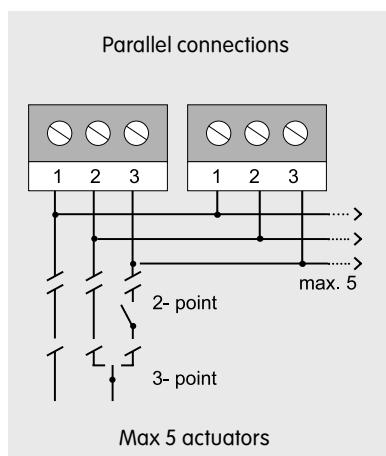
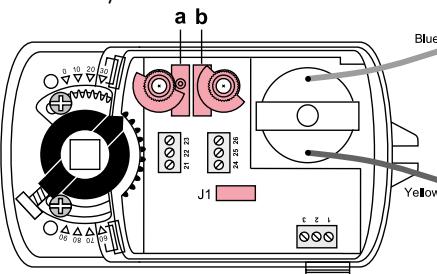
Direction of rotation setting

The direction of rotation can be changed by reversing jumper J1.



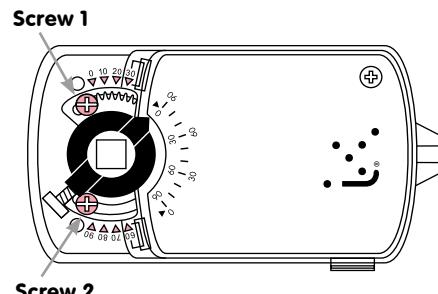
Auxiliary switches setting

Factory setting:
switch a at 10°
switch b at 80°
The switching position can be changed manually.



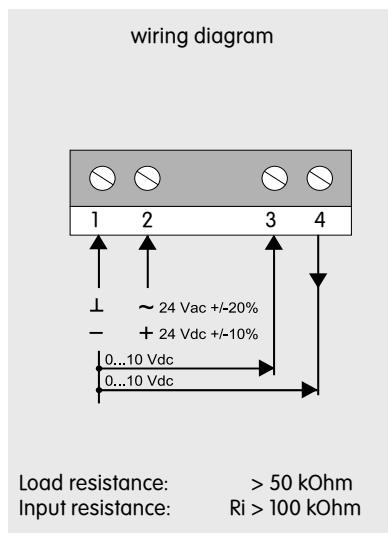
Limitation of rotation angle

The range of working angle (90°) can be reduced up to 30° from each end stop by screw 1 and 2.

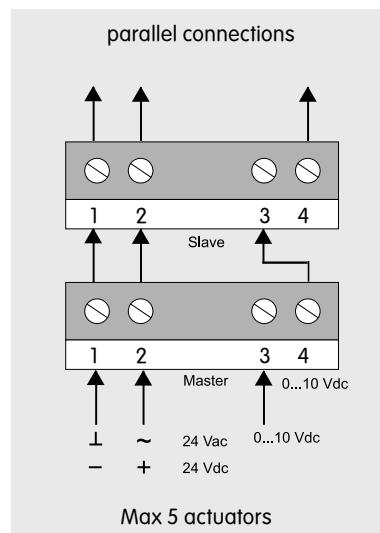


DAMPER ACTUATORS, 2-, 3-POINT AND PROPORTIONAL CONTROL (4 Nm)

DAN, DMN



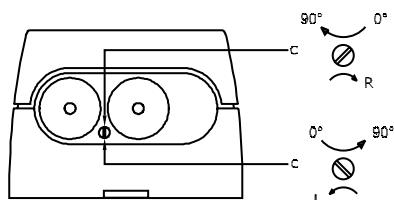
DMN



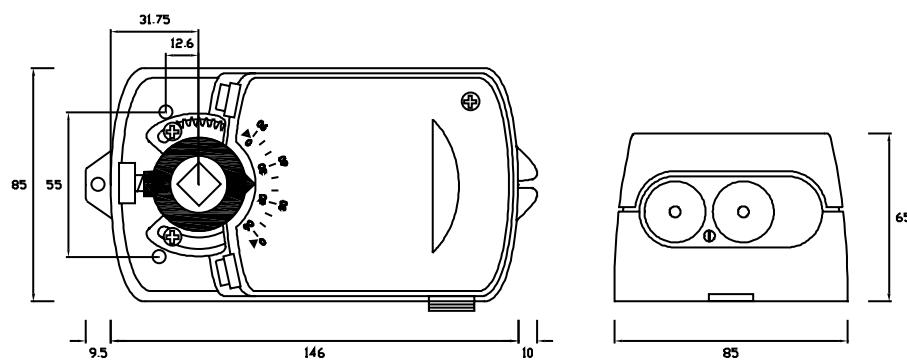
DMN

Direction of rotation setting for DMN

R = factory setting



DIMENSIONS (mm)





DAMPER ACTUATORS, 2-, 3-POINT CONTROL (8, 16, 24 Nm)

DAS, DA, DAL

FUNCTION

2- and 3-point damper control.

APPLICATIONS

Well-suited for applications with dampers (2, 4, 6 m²) in ventilation and air handling units.

CHARACTERISTICS

- universal adapter for easy mounting
- shaft dimensions Ø 10...20 mm / 10...16 mm square
- minimum shaft length 50 mm
- anti-rotation bracket
- manual override with push-button
- direction of rotation selectable
- angle of rotation adjustable
- parallel connection up to 10 actuators
- 2 auxiliary microswitches SPDT when requested
- power saving at end stops

TYPE	POWER SUPPLY	TORQUE
DAS24	24 Vac/dc	8 Nm
DAS24S	24 Vac/dc	8 Nm
DAS230	230 Vac	8 Nm
DAS230S	230 Vac	8 Nm
DA24	24 Vac/dc	16 Nm
DA24S	24 Vac/dc	16 Nm
DA230	230 Vac	16 Nm
DA230S	230 Vac	16 Nm
DAL24	24 Vac/dc	24 Nm
DAL24S	24 Vac/dc	24 Nm
DAL230	230 Vac	24 Nm
DAL230S	230 Vac	24 Nm

S models with 2 auxiliary switches

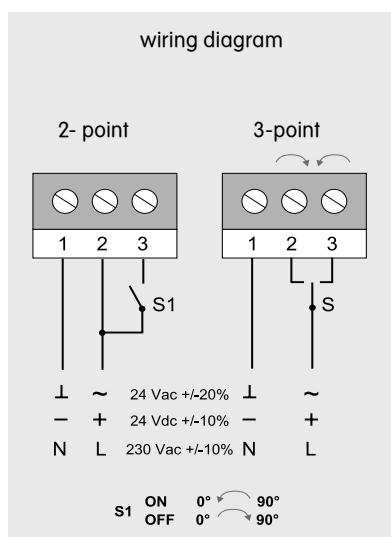
Actuator	DAS24	DA24	DAL24	DAS230	DA230	DAL230
Damper area (*)	m ²	2	4	6	2	4
Torque	Nm	8	16	24	8	16
Stroke time	s	30	80	125	30	80
Power supply	24 Vac/dc	24 Vac/dc	24 Vac/dc	230 Vac	230 Vac	230 Vac
Frequency	Hz	50...60	50...60	50...60	50...60	50...60
Power consumption						
- operating	W	3.9	3.9	3.9	4.8	4.8
- at end stops	W	0.4	0.4	0.4	1.2	1.2
For wire sizing	VA	6.5	6.5	6.5	6.5	6.5
Weight	g	1200	1200	1200	1200	1200
Signal control	2-, 3-point	2-, 3-point	2-, 3-point	2-, 3-point	2-, 3-point	2-, 3-point
Aux. switches rating				3(1.5) A 230 Vac		
Rotation angle						
- operating				90° (93° mechanical)		
- limitation				5...85° in 5° steps		
Protection class	II	II	II	II	II	II
Degree of protection				IP44 or IP54 with cable glands		
Room temperature	-20 ... +50°C	-20 ... +50°C	-20 ... +50°C	-20 ... +50°C	-20 ... +50°C	-20 ... +50°C
Room humidity	5...95% r.h.	5...95% r.h.	5...95% r.h.	5...95% r.h.	5...95% r.h.	5...95% r.h.
Noise level				max 45 dB		
Standards	CE	CE	CE	CE	CE	CE

(*) the indication of the damper area is not significant, the data that must be taken into account is the value of the torque in Nm.



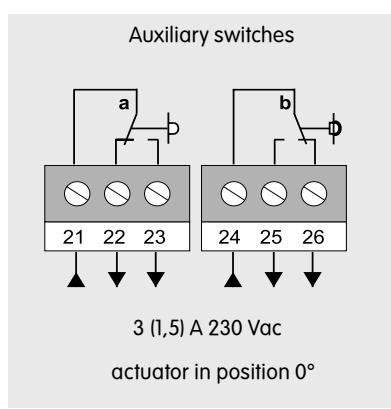
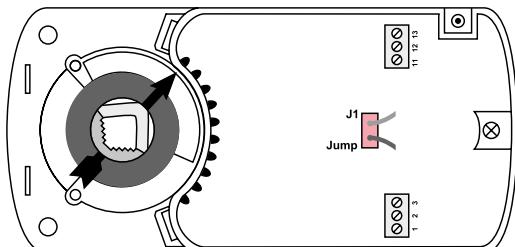
DAMPER ACTUATORS, 2-, 3-POINT CONTROL (8, 16, 24 Nm)

DAS, DA, DAL



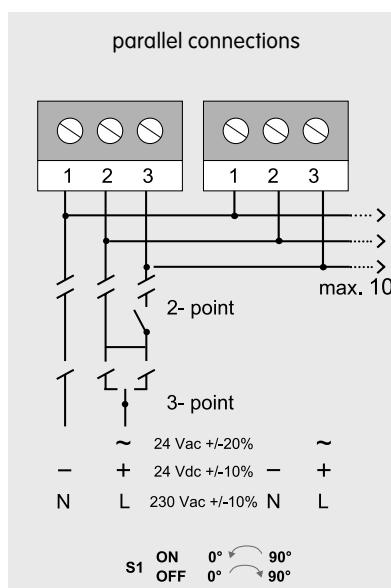
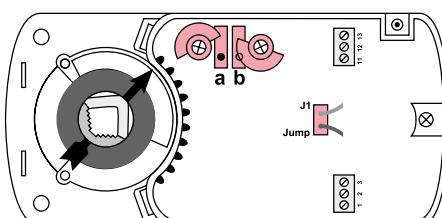
Direction of rotation setting

The direction of rotation can be changed by reversing Jumper J1.

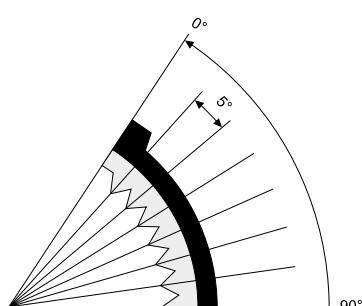


Auxiliary switches setting

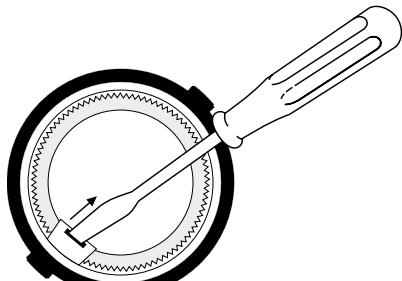
Factory setting:
switch a at 10°
switch b at 80°
The switching position can be changed manually.



Limitation of rotation angle



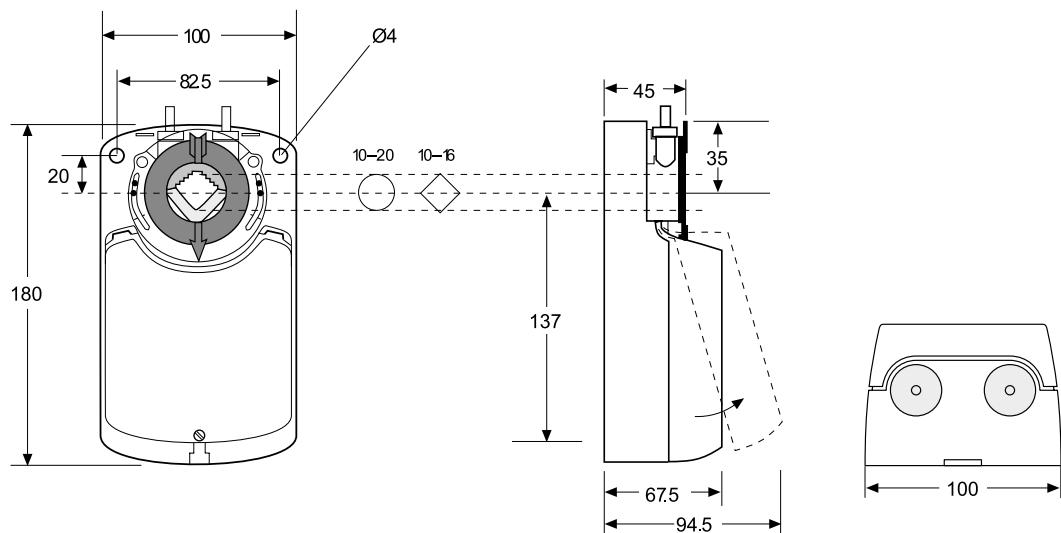
Adapter release



DAMPER ACTUATORS, 2-, 3-POINT CONTROL (8, 16, 24 Nm)

DAS, DA, DAL

DIMENSIONS (mm)





DAMPER ACTUATORS, PROPORTIONAL CONTROL (8, 16 ,24 Nm)

DMS, DM, DML

FUNCTION

0(2)...10 Vdc or 0(4)...20 mA damper proportional control.

APPLICATIONS

Well-suited for applications with dampers (2, 4, 6 m²) in ventilation and air handling units.

CHARACTERISTICS

- universal adapter for easy mounting
- shaft dimensions Ø 10...20 mm / 10...20 mm square
- anti-rotation bracket provided for stability
- manual override by push-button
- adjustable angle of rotation
- selectable direction of rotation
- 0(2)...10 Vdc input signal 0(4)...20 mA
- 0...10 Vdc output signal
- parallel connection up to 10 actuators
- 2 adjustable SPDT auxiliary switches when requested
- power saving at end stops

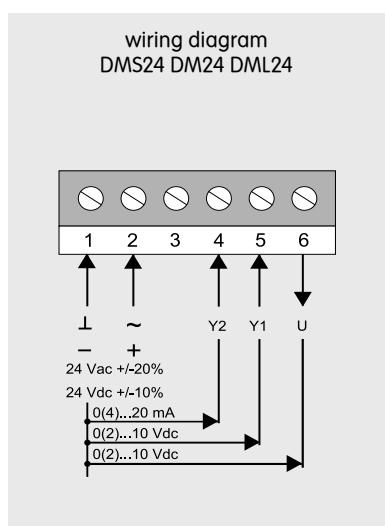
TYPE	POWER SUPPLY	TORQUE
DMS24	24 Vac/dc	8 Nm
DMS24S	24 Vac/dc	8 Nm
DMS230	230 Vac	8 Nm
DMS230S	230 Vac	8 Nm
DM24	24 Vac/dc	16 Nm
DM24S	24 Vac/dc	16 Nm
DM230	230 Vac	16 Nm
DM230S	230 Vac	16 Nm
DML24	24 Vac/dc	24 Nm
DML24S	24 Vac/dc	24 Nm
DML230	230 Vac	24 Nm
DML230S	230 Vac	24 Nm

S models with 2 auxiliary switches

Actuator	DMS24	DM24	DML24	DMS230	DM230	DML230
Damper area (*)	m ²	2	4	6	2	4
Torque	Nm	8	16	24	8	16
Stroke time	s	30	80	125	30	80
Power supply	24 Vac/dc	24 Vac/dc	24 Vac/dc	230 Vac	230 Vac	230 Vac
Frequency	Hz	50...60	50...60	50...60	50...60	50...60
Power consumption						
- operating	W	4.0	4.0	4.0	4.8	4.8
- at end stops	W	0.7	0.7	0.7	1.0	1.0
For wire sizing	VA	6.5	6.5	6.5	7.5	7.5
Weight	g	1200	1200	1200	1200	1200
Control signal	Y1	0(2)...10 Vdc	0(2)...10 Vdc	0(2)...10 Vdc	0(2)...10 Vdc	0(2)...10 Vdc
Control signal	Y2	0(4)...20 mA	0(4)...20 mA	0(4)...20 mA	-	-
Feedback signal	U	0(2)...10 Vdc	0(2)...10 Vdc	0(2)...10 Vdc	0(2)...10 Vdc	0(2)...10 Vdc
Aux. switches rating				3(1.5) A 230 Vac		
Rotation angle:				90° (93° mechanical)		
- operating				5...85° in 5° steps		
- limitation						
Protection class	II	II	II	II	II	II
Degree of protection				IP44 or IP54 with cable glands		
Room temperature	-20...+50°C	-20...+50°C	-20...+50°C	-20...+50°C	-20...+50°C	-20...+50°C
Room humidity	5...95% r.h.	5...95% r.h.	5...95% r.h.	5...95% r.h.	5...95% r.h.	5...95% r.h.
Noise level				max 45 dB		
Standards	CE	CE	CE	CE	CE	CE

(*) the indication of the damper area is not significant, the data that must be taken into account is the value of the torque in Nm.

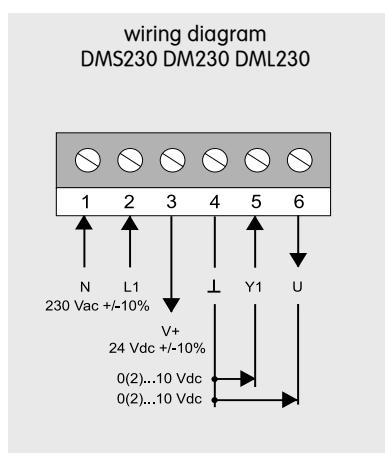
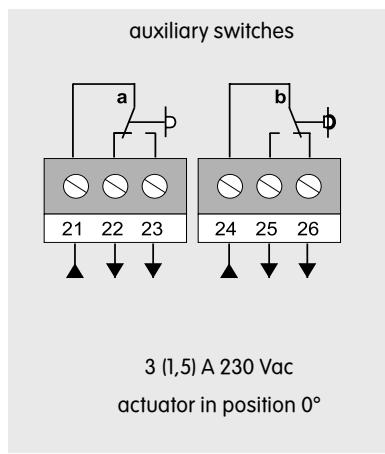
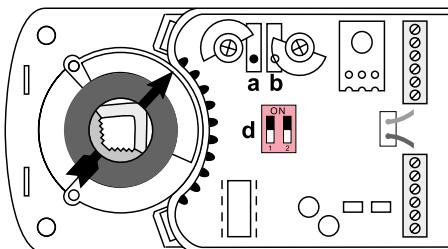
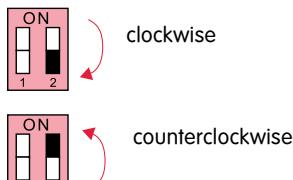


**Control signal setting**

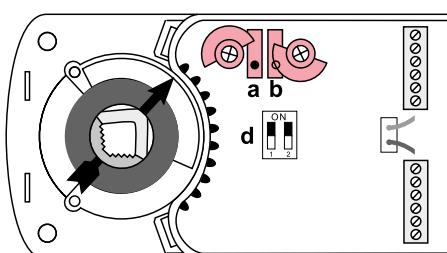
Control signal Y1:
Input resistance: 0(2)...10 Vdc
R_i 100 kOhm Y1: 0...10 Vdc

Control signal Y2:
Input resistance: 0(4)...20 mA
R_i 500 Ohm Y2: 0...20 mA

Feedback signal U:
Load resistance: 0(2)...10 Vdc
Y1: 2...10 Vdc
Y2: 4...20 mA
> 50 kOhm

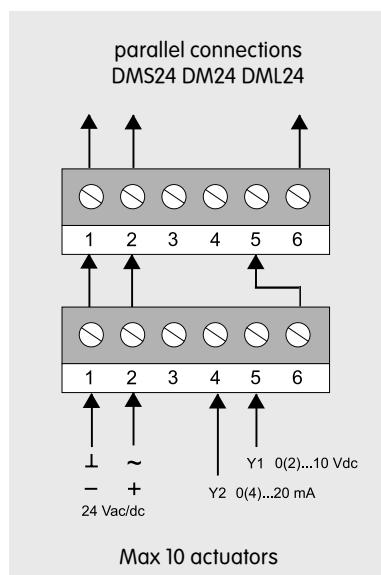
**Direction of rotation setting****Microswitch d****Auxiliary switches setting**

Factory setting:
Switch a at 10°
Switch b at 80°
The switching position can be changed manually.

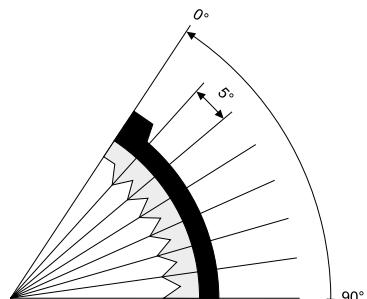


DAMPER ACTUATORS, PROPORTIONAL CONTROL (8, 16, 24 Nm)

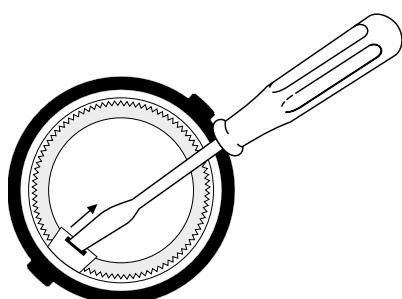
DMS, DM, DML



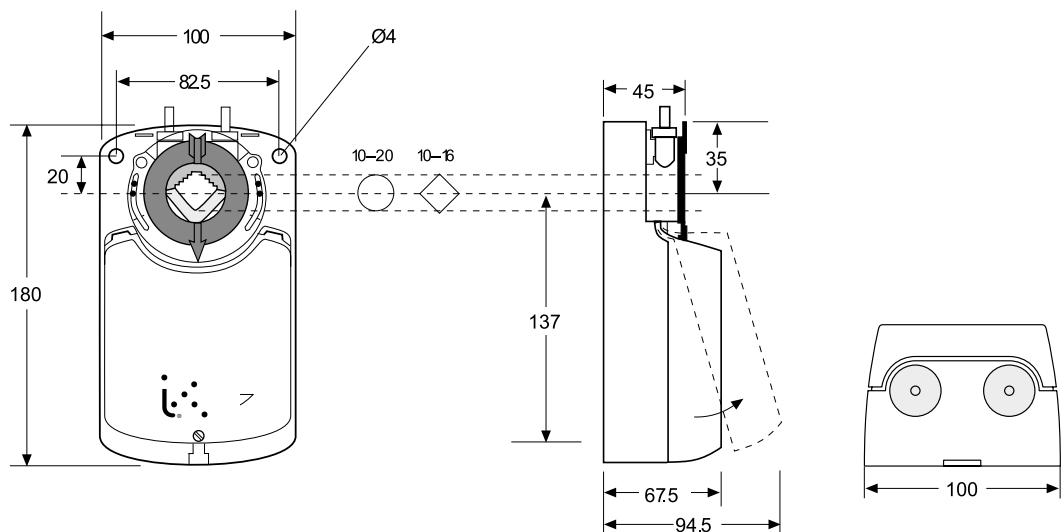
Limitation of rotation angle



Adapter release



DIMENSIONS (mm)





DAMPER ACTUATORS, 2-, 3-POINT AND PROPORTIONAL CONTROL (32 Nm)

DAG, DMG

FUNCTION

2- and 3-point or modulating damper and VF series valve control.

APPLICATIONS

Well-suited for applications with medium or large dampers of ventilation and air handling systems.

TYPE	TORQUE Nm	POWER SUPPLY	RUNNING TIME sec.	POWER CON- SUMPTION W (**)	ACTION
DAG24	32	24 Vac/dc	160	4,0 (0,5)	2-, 3-point
DAG24S	32	24 Vac/dc	160	4,0 (0,5)	2-, 3-point
DAG230	32	230 Vac	160	4,8 (1,2)	2-, 3-point
DAG230S	32	230 Vac	160	4,8 (1,2)	2-, 3-point
DMG24	32	24 Vac/dc	240	2,5 (0,3)	0(2)...10 Vdc - (0)4...20 mA
DMG24S	32	24 Vac/dc	240	2,5 (0,3)	0(2)...10 Vdc - (0)4...20 mA

(**) inside bracketed power consumption at the end stops

S models with 2 SPDT auxiliary switches 3 (1.5) A 230 Vac

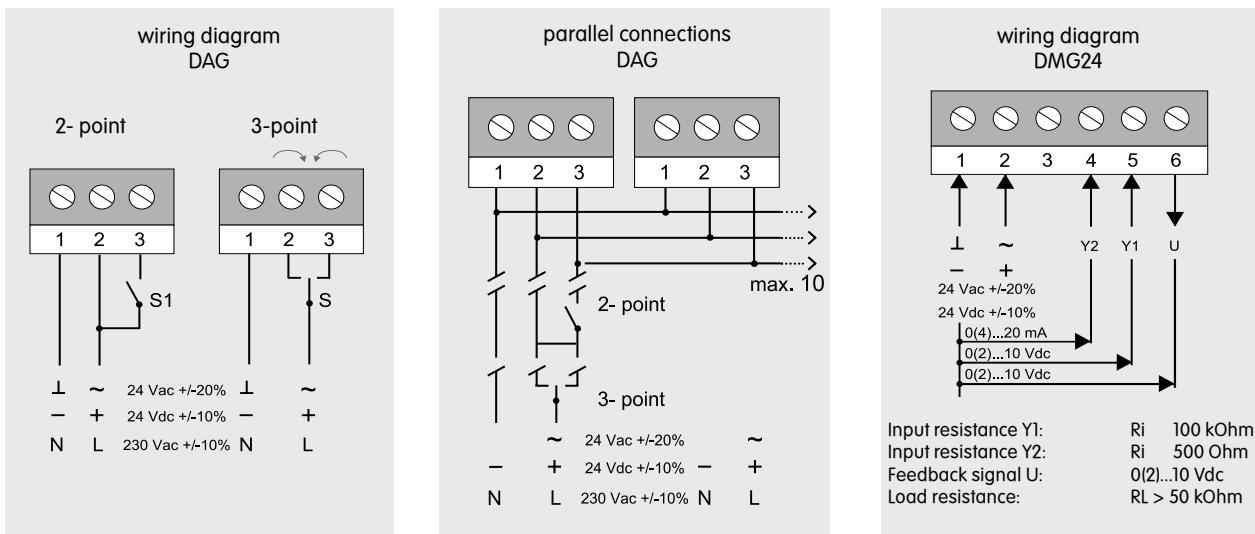
Actuator	DAG24	DAG230	DMG24
Damper area (*)	m ²	8	8
Torque	Nm	32	32
Stroke time	s	160	160
Power supply		24 Vac/dc	230 Vac
Frequency	Hz	50..60	50..60
Power consumption			
- operating	W	4.0	4.8
- at end stops	W	0.5	1.2
Cable connection		0.75 mm ²	0.75 mm ²
Weight	g	1100	1200
Control signal	Y1	2-, 3-point	2-, 3-point
Control signal	Y2	-	-
Feedback signal	U	-	-
Aux. switches rating		3(1,5) A 230 Vac	0(2)...10 Vdc
Rotation angle:			
- operating		0...90°	
- limitation		5...85° in 5° steps	
Protection class	II	II	II
Degree of protection		IP44 or IP54 with cable glands	
Room temperature		-20...+50°C	-20...+50°C
Room humidity		5...95% r.h.	5...95% r.h.
Noise level		max 45 dB	
Standards	CE	CE	CE

(*) the indication of the damper area is not significant, the data that must be taken into account is the value of the torque in Nm.

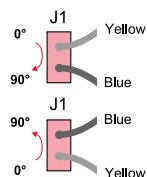


DAMPER ACTUATORS, 2-, 3-POINT AND PROPORTIONAL CONTROL (32 Nm)

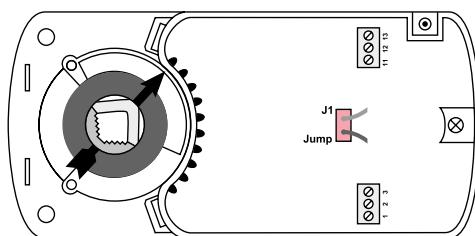
DAG, DMG



Direction of rotation setting DAG



The direction of rotation can be changed by reversing Jumper J1.



Control signal setting DMG

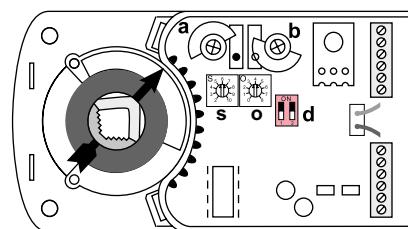
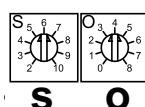
Trimmer **O** adjustment low point
Trimmer **S** adjustment high point

Examples: Input 0...10 V
O=0 e **S**=10

Input 2...10 V
O=2 e **S**=8

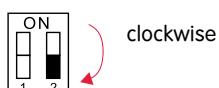
Input 0...20 mA
O=0 e **S**=10

Input 4...20 mA
O=2 e **S**=8

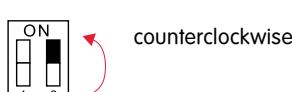


Direction of rotation setting DMG

Microswitch **d** position 2



clockwise



counterclockwise

Funzione di test DMG

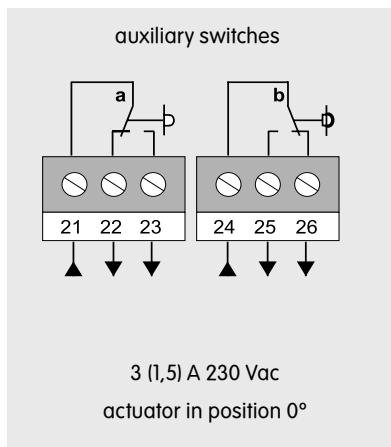
Microswitch **d** position 1



When moving switch 1 in ON position, the actuator will rotate from 0 to 90 degree and then will keep some seconds in 90 degree position and then will return in the original position. In normal function the switch 1 must be in OFF position.

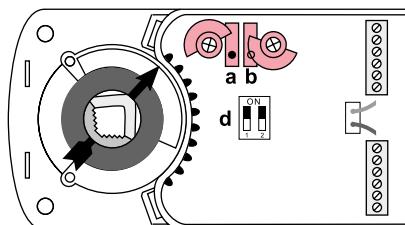
DAMPER ACTUATORS, 2-, 3-POINT AND PROPORTIONAL CONTROL (32 Nm)

DAG, DMG

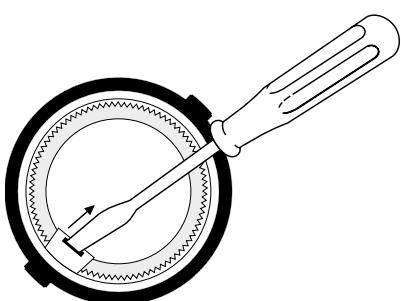


Auxiliary switches setting

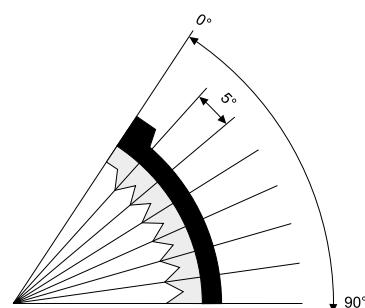
Factory setting:
switch a at 10°
switch b at 80°
The switching position can be changed manually.



Adapter release



Limitation of rotation angle



DIMENSIONS (mm)

