



STANDARD

2- and 3-POINT Actuators

2.20

Application

The JOVENTA STANDARD electric damper-actuator series is designed to operate air dampers in ventilation and air conditioning systems.

The compact design and universal adapter fitted with limitation of rotation angle make this JOVENTA actuator highly versatile.

Key features

- 2- or 3-point control
- Up to 5 actuators in parallel operation possible
- Plug-in terminal block connection
- Simple direct-mount with universal adapter on Ø 10 mm to 20 mm shaft or square shaft from 10 mm to 16 mm. 48 mm minimum damper shaft length
- Selectable direction of rotation
- Limitation of rotation angle
- Manual release button
- 2 adjustable auxiliary switches
See back page for settings
- Automatic shut-off at end position (overload switch)
- Energy saving at end positions
- Actuators available with 1 m halogen-free cable
- Customized versions available
- Devices meet CE requirements

Accessories

- ZK damper linkage selection
- ZKG ball joints
(see product sheet 6.10)

Nomenclature/Specification/Technical data

DA...1	AC/DC24V	
DA...1.S	AC/DC24V	with 2 auxiliary switches
DA...1.P1	AC/DC24V	with 1K Ω feedback potentiometer
DA...1.P2	AC/DC24V	with 140 Ω feedback potentiometer
DA...2	AC230V	
DA...2.S	AC230V	with 2 auxiliary switches
DA...2.P1	AC230V	with 1K Ω feedback potentiometer
DA...2.P2	AC230V	with 140 Ω feedback potentiometer
.....K		with 1 m halogen-free cable

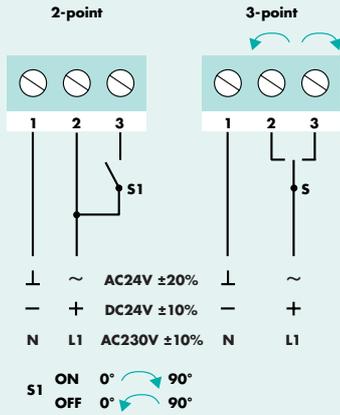
Actuator	DA1.(S)(P..)	DA1.(S)(P..)	DA1.(S)(P..)	DA2.(S)(P..)	DA2.(S)(P..)	DA2.(S)(P..)
Torque	8 Nm	16 Nm	24 Nm	8 Nm	16 Nm	24 Nm
Damper area*	1.5 m ²	3.0 m ²	4.5 m ²	1.5 m ²	3.0 m ²	4.5 m ²
Running time	30...45 s	80...110 s	125...160 s	30...45 s	80...110 s	125...160 s
Supply voltage	AC/DC24V			AC230V		
Frequency	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz
Power consumption						
- Running	4.0 W	4.0 W	4.0 W	5.5 W	5.5 W	5.5 W
- At end position	0.5 W	0.5 W	0.5 W	1.0 W	1.0 W	1.0 W
Dimensioning	6.5VA / 2A @ 2 ms			6.0VA / 0.1A @ 2 ms		
Weight	1.1 kg	1.1 kg	1.1 kg	1.2 kg	1.2 kg	1.2 kg
Control signal	2-point or 3-point					
Position signal	Potentiometer					
Angle of rotation/working range	90° (93° mech.)					
Angle of rotation/limitation	5°...85° in 5° < steps					
Service lifetime	60,000 rotations					
Auxiliary switches	3(1.5)A, AC230V					
Setting range / adjustable	5°...85° < infinity					
Potentiometer load	0.5 W					
Tolerance	± 10%					
Noise level	45 dB (A)					
Protection class	II					
Degree of protection	IP 54 (cable downwards)					
Cable aperture connection	M16 x 1.5					
Mode of action	Type 1					
Ambient conditions						
- Operating temperature	-20...+50°C / IEC 721-3-3					
- Storage temperature	-30...+60°C / IEC 721-3-2					
- Humidity	5...95% r.F.					
Service	Maintenance-free					
Standards	Mechanics		EN 60 529 / EN 60 730-2-14			
	Electronics		EN 60 730-2-14			
	EMC Emissions		EN 50 081-1:92 / IEC 61 000-6-3:96			
	EMC Immunity		EN 50 082-2:95 / IEC 61 000-6-2:99			

STANDARD

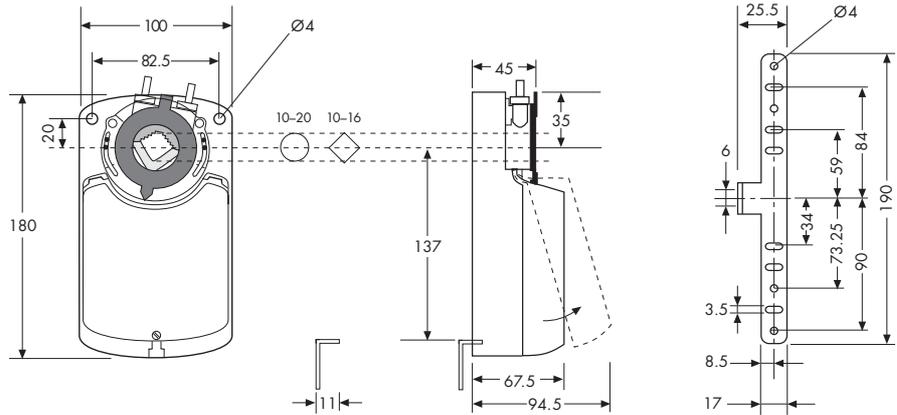
2- and 3-POINT Actuators

2.20

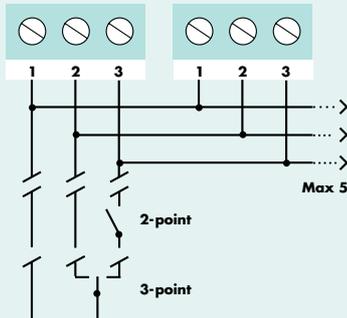
Wiring diagram



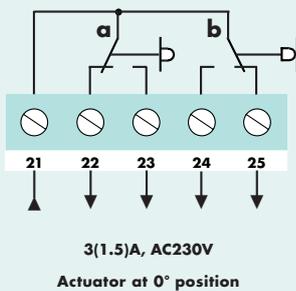
Dimensions in mm



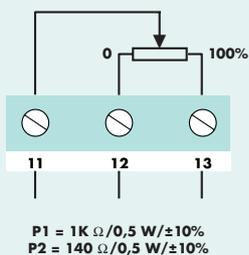
Parallel connections



Auxiliary switches (S)



Potentiometer (P)

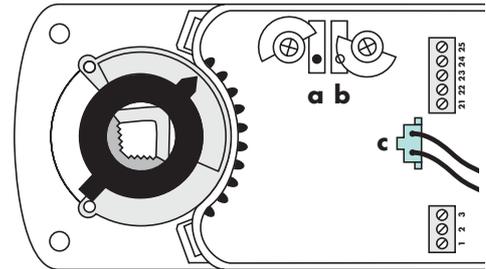
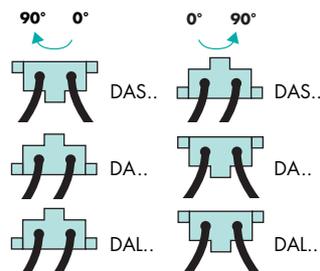


For details of installation and commissioning see Manual 2.20

Changing the direction of rotation

The direction of rotation can be changed by reversing plug **c**

Factory setting

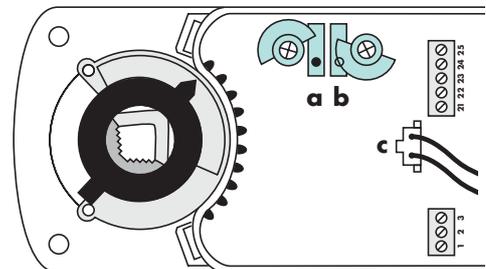


Setting the auxiliary switches

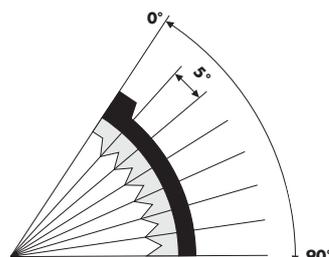
Factory setting

Switch **a** at 10°
Switch **b** at 80°

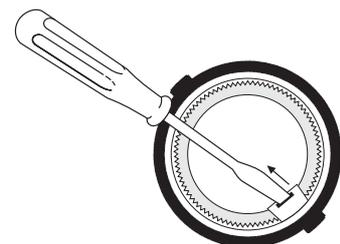
The switching position can be manually changed to any required position by turning the ratchet.



Limitation of rotation angle



Adapter release





S I L E N C E

MODULATING Actuators

2.16

Application

The JOVENTA **SILENCE** electric damper-actuator series have been developed to operate small and medium air dampers in ventilation and air conditioning systems.

The compact design and universal adapter fitted with limitation of rotation angle make this JOVENTA actuator highly versatile.

Key features

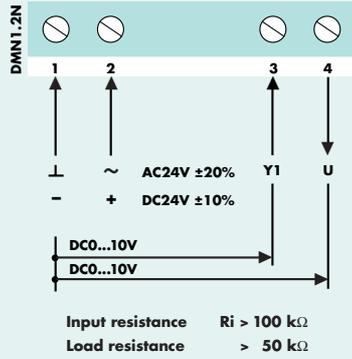
- DC 0...10 V control
- Up to 5 actuators in parallel operation possible
- Plug-in terminal block connection
- Simple direct mounting with universal adapter for fitting to Ø6-mm to 16-mm shaft or with Z01DN adapter kit for 8, 10, 11 and 12 mm square shaft. 45-mm min shaft length
- Selectable direction of rotation
- Limitation of rotation angle
- Manual release button
- Automatic shut-off at end position (overload switch)
- Energy saving at end positions
- Actuators available with 1 m halogen-free cable
- Customized versions available
- Devices meet CE requirements

Nomenclature/Specification/Technical data

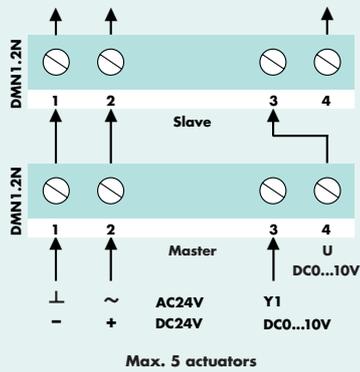
DMN1.2N	AC/DC24V
.....K	with 1 m halogen-free cable

Actuator	DMN1.2N	
Torque	4 Nm	
Damper area*	0.8 m ²	
Running time	35 s	
Supply voltage	AC/DC24V	
Frequency	50-60 C	
Power consumption		
- Running	2.5 W	
- At end position	0.75 W	
Dimensioning	3.5VA / 2.5A @ 2 ms	
Weight	0.9 kg	
Control signal	DC0...10V	
Position signal	DC0...10V	
Angle of rotation / working range	90° (93° mech.)	
Angle of rotation / limitation	0°...30° and 90°...60°	
Service lifetime	60,000 rotations	
Noise level	40 dB (A)	
Protection class	II	
Degree of protection	IP 50	
Cable aperture connection	M16 x 1.5	
Mode of action	Type 1	
Ambient conditions		
- Operating temperature	-20...+50°C / IEC 721-3-3	
- Storage temperature	-30...+60°C / IEC 721-3-2	
- Humidity	5...95% r.F.	
Service	Maintenance free	
Standards	Mechanics	EN 60 529 / EN 60 730-2-14
	Electronics	EN 60 730-2-14
	EMC Emissions	EN 50 081-1:92 / IEC 61 000-6-3:96
	EMC Immunity	EN 50 082-2:95 / IEC 61 000-6-2:99

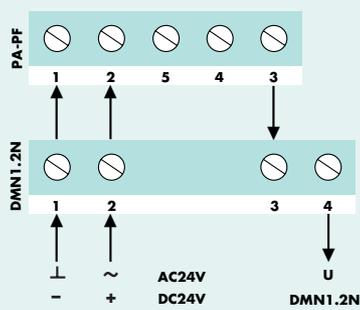
Wiring diagram



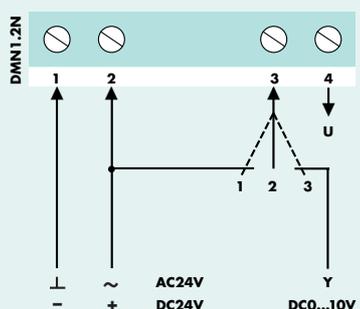
Parallel connections



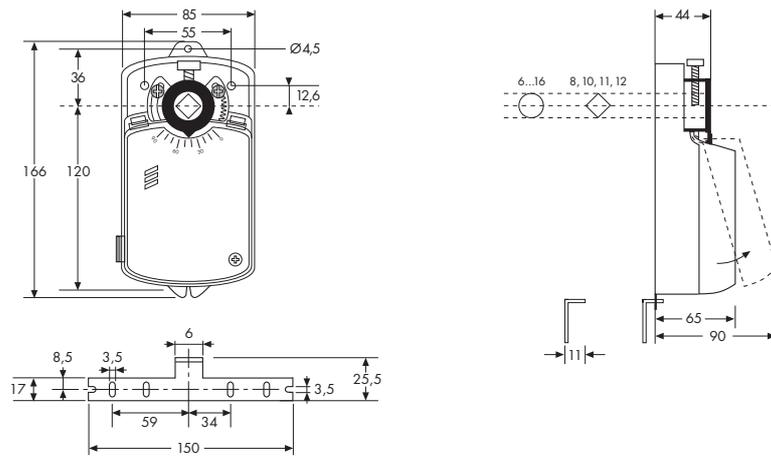
Positioner



Override control

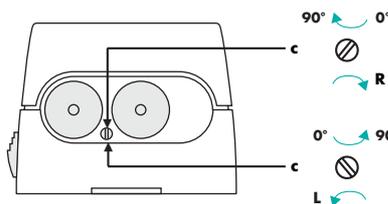


Dimensions in mm



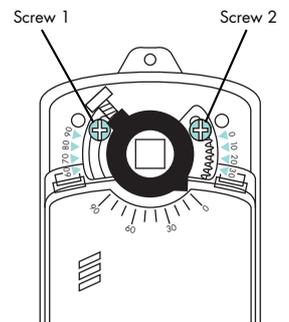
Changing the direction of rotation

R = Factory setting



Limitation of rotation angle

The angle of rotation/working range of 90° can be reduced by up to 30° from each end position by means of screw 1 and 2.



The actuator DMN1.2N can also be controlled using the JOVENTA Positioner (PA-PF) with a control signal of DC0...10V. For further information concerning the PA and PF positioner please refer to data sheet 6.20.

Caution:

A maximum of 5 actuators can be controlled in parallel operation.

The actuator DMN1.2N can be forced to override control when wired in accordance with the relevant diagram on the left.

Switch position:

- 1 = Actuator runs at 10 V
- 2 = Actuator runs at 0 V
- 3 = Automatic control operation

DMS1.1 / DM1.1 / DML1.1
Modulating Actuators AC/DC 24 V
Application

The **JOVENTA STANDARD** electric damper actuator series is designed to operate air dampers in ventilation and air conditioning systems. The compact design and universal adapter fitted with limitation of rotation angle make this JOVENTA actuator highly versatile.

Features

- DC 0(2)...10 V or 0(4)...20 mA control signal
- Working area adjustable
- Load-independent running time
- Up to 5 actuators in parallel operation possible
- Plug-in terminal block connection
- Simple direct-mount with universal adapter on 10...20 mm Ø round-axis or 10...16 mm square shaft
- 48 mm minimum damper shaft length
- Selectable direction of rotation
- Limitation of rotation angle
- Manual release button
- 2 adjustable auxiliary switches
- Automatic shut-off at end position (overload switch)
- Actuators available with 1 m cable
- Customized versions available
- Devices meet CE requirements

Accessories

- ZK Damper linkage selection
- ZKG Ball joints


Technical Specifications

Actuator	DMS1.1(S)	DM1.1(S)	DML1.1(S)
Torque	8 Nm	16 Nm	24 Nm
Damper area*	1.5 m ²	3.0 m ²	4.5 m ²
Running Time OPEN	30 s	80 s	125 s
Running Time CLOSE	30 s	80 s	125 s
Supply Voltage	AC/DC 24 V		
Frequency	50-60 Hz		
Power Consumption			
- Running	2.5 W		
- At end position	0.3 W		
Dimensioning	6.0 VA / 3.6 A @ 2 ms		
Working area Y	not adjustable		
Control Signal Y1	DC 0... 10 V		
Input resistance Y1	Ri 250 Ω		
Control signal Y2	0...20 mA		
Input resistance Y2	Ri 388 Ω		
Position signal U	DC 0...10 V		
Load resistance	> 50 k Ω		
Angle of rotation/ Working range	90° (93° mech.)		
Angle of rotation/ Limitation	5°...85° in 5° < steps		
Auxiliary Switches	3(1.5) A, AC 230 V		
- S1 setting range	5°...85° < adjustable		
- S2 setting range			
Cable	1.0 m halogen-free		
- Motor	5-Wire 1-2-4-5-6		
- Switches	5-Wire 21-22-23-24-25		
Life time	60.000 rotations		
Noise level	45 dB (A)		
Protection Class	II		
Degree of Protection	IP 54		
Mode of Action	Type 1		
Ambient conditions			
- Operating temperature	-20...+50 °C / IEC 721-3-3		
- Storage temperature	-30...+60°C / IEC 721-3-2		
- Humidity	5...95% r.F. no condensed		
Weight	1.1 Kg		
Service	Maintenance-free		
Standards			
- Mechanics	EN 60 529 / EN 60 730-2-14		
- Electronics	EN 60 730-2-14		
- EMC Emissions	EN 50 081-1:92 / IEC 61000-6-3:96		
- EMC Immunity	EN 50 082-2:95 / IEC 61000-6-2:99		

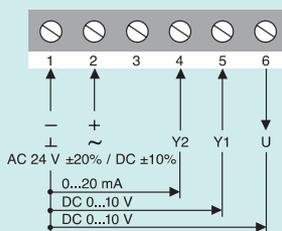
*Caution: Please note damper manufacturer's information concerning the open/close torque.

Ordering Codes

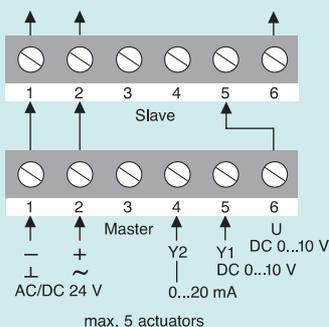
Codes	Descriptions
DMx1.1	AC/DC 24 V
DMx1.1S	AC/DC 24 V, with 2 auxiliary switches

DMS1.1 / DM1.1 / DML1.1
Modulating Actuators AC/DC 24 V

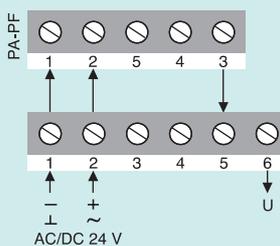
Wiring Diagram



Parallel Connections



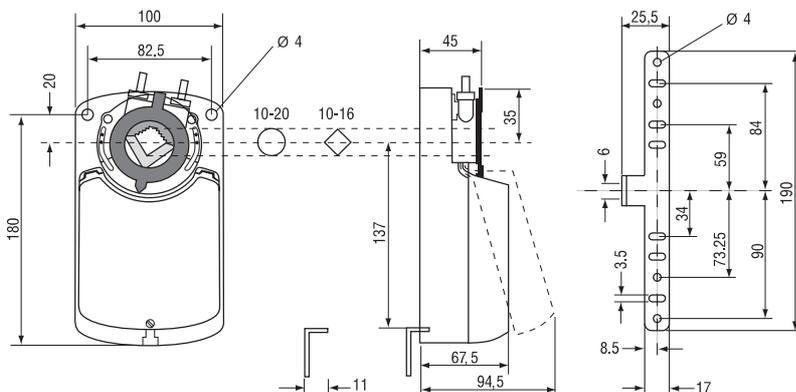
Position transmitter



The DMxx can also be controlled using the JOVENTA Positioner (PA/PF) with control signal of DC 0...10 V.
For further information concerning the PA and PF positioner please refer to sheet 6.20.

Caution: A maximum of 5 actuators can be controlled in parallel operation.

Dimensions in mm

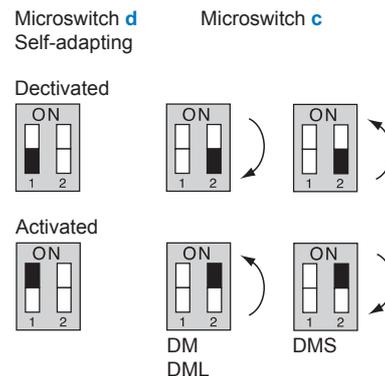


Setting the control Signal

Control signal Y1	DC 0...10 V
Input resistance	Ri 250 kΩ
Control signal Y2	0...20 mA
Input resistance	Ri 388 Ω
Position signal U	DC 0...10 V
Load resistance	> 50 kΩ

By switching microswitch **d** to ON position, the control signal Y1 or Y2 will be adapted to the chosen angle of rotation.

By switching microswitch **c** the direction of rotation can be changed.



Setting Span and OFFSET

The potentiometers **O** and **S** help to match control signals Y1 and Y2 to any make of controller.

Example 1

Control signal Y1 working between DC 2...10 V	
Setting: Starting point	O = 2
working range	S = 8

Example 2

Control signal Y2 working between 6...18 mA	
Setting: Starting point	O = 3
Working range	S = 6

Start point O

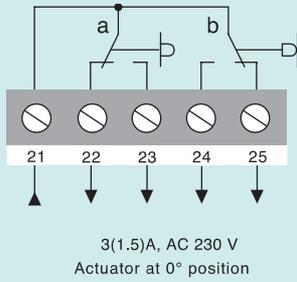
	Scale O	0	1	2	3	4	5	6	7	8
	for Y1 (VDC)	0	1	2	3	4	5	6	7	8
	for Y2 (mA)	0	2	4	6	8	10	12	14	16

Working range S

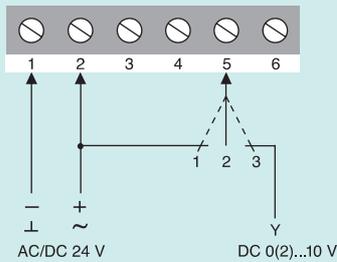
	Scale S	2	3	4	5	6	7	8	9	10
	for Y1 (VDC)	2	3	4	5	6	7	8	9	10
	for Y2 (mA)	4	6	8	10	12	14	16	18	20

DMS1.1 / DM1.1 / DML1.1
Modulating Actuators AC/DC 24 V

Auxiliary Switches (S)



Override Control



The actuator DMxx can be forced to override control when wired in accordance with the diagram.

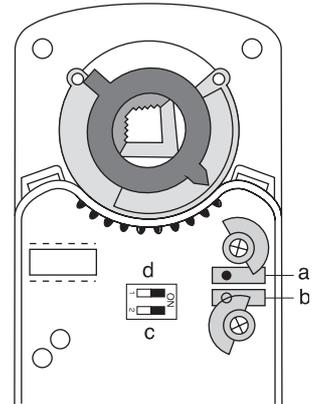
Switch position:

- 1 = Actuator runs at 10 V
- 2 = Actuator runs at 0(2) V
- 3 = Automatic control

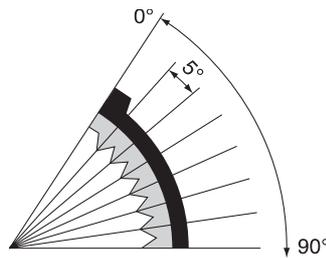
Settings the auxiliary switches

Factory setting
Switch **a** at 10°
Switch **b** at 80°

The switching position can be manually changed to any required position by turning the ratchet.

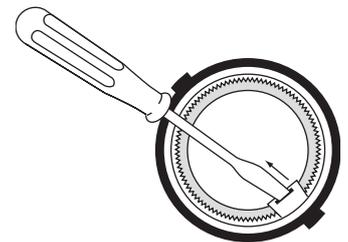


Limitation of Rotation Angle



The limitation or rotation angle can be set in 5° steps by moving the adapter.

Adapter release



The adapter can be removed simply by pressing the adapter clip on the underside of the actuator.



S I L E N C E

2-POINT Actuators

2.12

Application

The JOVENTA **SILENCE** electric damper-actuator series have been developed to operate small and medium air dampers in ventilation and air conditioning systems.

The compact design and universal adapter fitted with limitation of rotation angle make this JOVENTA actuator highly versatile.

Key features

- 2-point control
- Load-independent running time
- Up to 5 actuators in parallel operation possible
- Plug-in terminal block connection
- Simple direct mounting with universal adapter for fitting to Ø6-mm to 16-mm shaft or with Z01DN adapter kit for 8, 10, 11 and 12 mm square shaft. 45-mm min shaft length
- Selectable direction of rotation
- Limitation of rotation angle
- Manual release button
- 2 adjustable auxiliary switches
See back page for settings
- Automatic shut-off at end position (overload switch)
- Energy saving at end positions
- Actuators available with 1 m halogen-free cable
- Customized versions available
- Devices meet CE requirements

Nomenclature/Specification/Technical data

DAN2.C	AC230V	
DAN2.SC	AC230V	with 2 auxiliary switches
.....K		with 1 m halogen-free cable

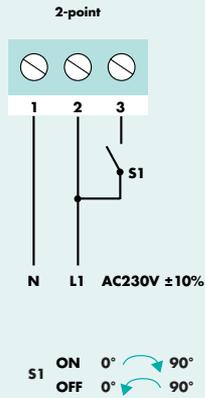
Actuator	DAN2.(S)C	
Torque	4 Nm	
Damper area*	0.8 m ²	
Running time	35 s	
Supply voltage	AC230V	
Frequency	50-60 Hz	
Power consumption		
- Running	2.8 W	
- At end position	1.7 W	
Dimensioning	3.6VA / 0.1A @ 2 ms	
Weight	0.950 kg	
Control signal	2-point	
Position signal	None	
Angle of rotation / working range	90° (93° mech.)	
Angle of rotation / limitation	0°...30° and 90°...60°	
Service lifetime	60,000 rotations	
Auxiliary switches	3(1.5)A, AC230V	
Setting range / adjustable	5°...85° < infinity	
Noise level	40 dB (A)	
Protection class	II	
Degree of protection	IP 50	
Cable aperture connection	M16 x 1.5	
Mode of action	Type 1	
Ambient conditions		
- Operating temperature	-20...+50°C / IEC 721-3-3	
- Storage temperature	-30...+60°C / IEC 721-3-2	
- Humidity	5...95% r.F.	
Service	Maintenance free	
Standards	Mechanics	EN 60 529 / EN 60 730-2-14
	Electronics	EN 60 730-2-14
	EMC Emissions	EN 50 081-1:92 / IEC 61 000-6-3:96
	EMC Immunity	EN 50 082-2:95 / IEC 61 000-6-2:99

SILENCE

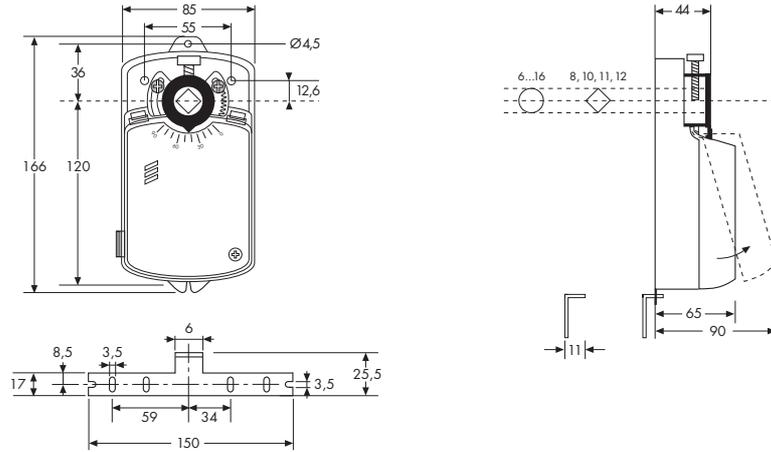
2-POINT Actuators

2.12

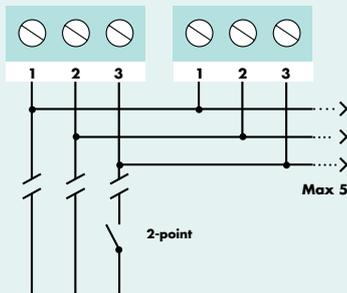
Wiring diagram



Dimensions in mm

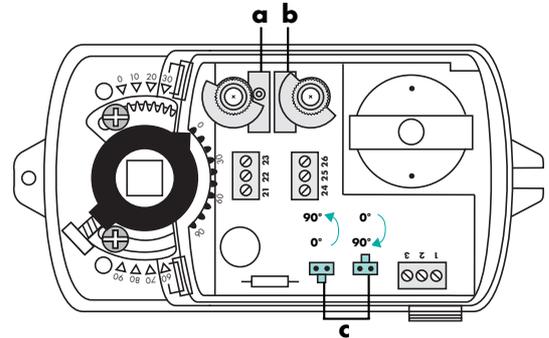


Parallel connections



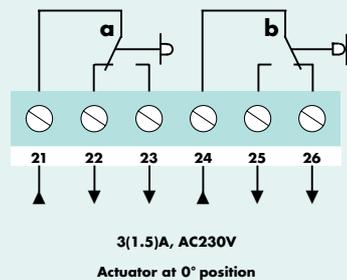
Changing the direction of rotation

The direction of rotation can be changed by reversing plug **c**



Factory setting:
Clockwise rotation.

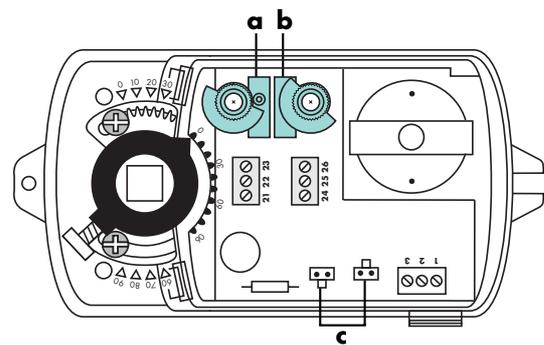
Auxiliary switches (S)



Setting the auxiliary switches

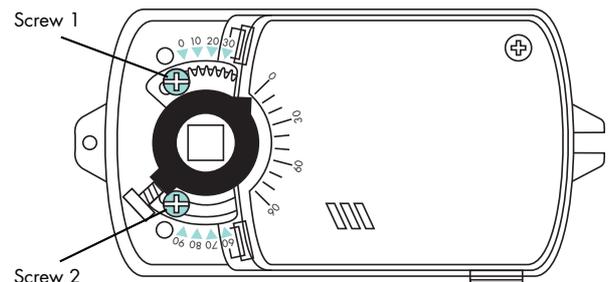
Factory setting:
Switch **a** at 10°
Switch **b** at 80°

The switching position can be manually changed to any required position by turning the ratchet.



Limitation of rotation angle

The angle of rotation/working range of 90° can be reduced by up to 30° from each end position by means of screw 1 and 2.





S I L E N C E

2- and 3-POINT Actuators

2.11

Application

The JOVENTA **SILENCE** electric damper-actuator series have been developed to operate small and medium air dampers in ventilation and air conditioning systems.

The compact design and universal adapter fitted with limitation of rotation angle make this JOVENTA actuator highly versatile.

Key features

- 2- or 3-point control
- Load-independent running time
- Up to 5 actuators in parallel operation possible
- Plug-in terminal block connection
- Simple direct mounting with universal adapter for fitting to Ø 6-mm to 16-mm shaft or with Z01DN adapter kit for 8, 10, 11 and 12 mm square shaft. 45-mm min shaft length
- Selectable direction of rotation
- Limitation of rotation angle
- Manual release button
- 2 adjustable auxiliary switches
See back page for settings
- Automatic shut-off at end position (overload switch)
- Energy saving at end positions
- Actuators available with 1 m halogen-free cable
- Customized versions available
- Devices meet CE requirements

Nomenclature/Specification/Technical data

DAN1.N	AC/DC24V	
DAN1.SN	AC/DC24V	with 2 auxiliary switches
DAN2.N	AC230V	
DAN2.SN	AC230V	with 2 auxiliary switches
. K		with 1 m halogen-free cable

Actuator	DAN1.(S)N	DAN2.(S)N
Torque	4 Nm	4 Nm
Damper area*	0.8 m ²	0.8 m ²
Running time	35 s	35 s
Supply voltage	AC/DC24V	AC230V
Frequency	50-60 Hz	50-60 Hz
Power consumption		
- operating	2.5 W	4.0 W
- At end position	0.75 W	3.0 W
Dimensioning	4.1VA/2A@2ms	5.0VA/0.1A@2ms
Weight	0.9 kg	0.9 kg
Control signal	2-point and 3-point	
Position signal	None	
Angle of rotation / working range	90° (93° mech.)	
Angle of rotation / limitation	0°...30° and 90°...60°	
Service lifetime	60,000 rotations	
Auxiliary switches	3(1.5)A, AC230V	
Setting range / adjustable	5°...85° < infinity	
Noise level	40 dB (A)	
Protection class	II	
Degree of protection	IP 50	
Cable aperture connection	M16 x 1.5	
Mode of action	Type 1	
Ambient conditions		
- Operating temperature	-20...+50°C / IEC 721-3-3	
- Storage temperature	-30...+60°C / IEC 721-3-2	
- Humidity	5...95% r.F.	
Service	Maintenance free	
Standards	Mechanics	EN 60 529 / EN 60 730-2-14
	Electronics	EN 60 730-2-14
	EMC Emissions	EN 50 081-1:92 / IEC 61 000-6-3:96
	EMC Immunity	EN 50 082-2:95 / IEC 61 000-6-2:99

