JOHNSON CONTROLS

Proportional Actuators AC/DC 24 V
2.28 N

Application

The **JOHNSON CONTROLS 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 JOHNSON CONTROLS actuator highly versatile.

Features

- DC 0...10 V or 0...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 univer-sal adapter on 10...20 mm Ø round-axis or 10...16 mm square shaft
- 48 mm minimum damper shaft lenght
- 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 with1m cable
- Customized versions available
- Devices meet CE requirements

Accessories

- M9000- ZK Damper linkage selection
- M9000- ZKG Ball joints

Technical Specifications

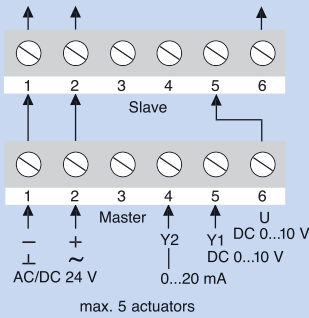| Actuator	M-9132-GG..
Torque	32 Nm
Damper area*	6.0 m^2
Running time OPEN	200 s
Running time CLOSE	200 s
Supply Voltage	AC/DC 24 V
Frequency	50-60 Hz
Power Consumption	
- *Running*	2 5 W
- *At end position*	0.3 W
Dimensioning	4.5 VA / 3.6 A @ 2 ms
Weight	1.1 kg
Working area Y	not adjustable
Control signal Y1	DC O...10 V
Input resistance Y1	Ri 250 Ω
Control signal Y2	0...20 mA
Input resistance Y2	Ri 388 Ω
Position signal U	DC O...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*	5°...85°< adjustable
Cable	1.0 m halogen-free
- *Motor*	5-Wire 1-2-4-5-6
- *Switches*	5-Wire 21-22-23-24-25
Lifetime	60'000 Rotations
Noise level	45 dB (A)
Protection class	II
Degree of protection	IP 54
Mode of action	Type1
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
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

Ordering Codes

Codes	Descriptions
M-9132-GGA-1N	AC/DC 24 V
M-9132-GGC-1N	AC/DC 24 V, with 2 auxiliary switches
M-9132-...-1N-K	with 1 m halogen-free cable

Wiring Diagram

DNG1.1 (S)

| 1 | 2 | 3 | 4 | 5 | 6 |

⊥ —   ~ +   Y2   Y1   U

AC 24 V ±20% / DC ±10%

0...20 mA
DC 0...10 V
DC 0...10 V

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Dimensions in mm (*inches*)

100 (3.94)
82.5 (3.25)
20 (0.79)
180 (7.09)
Ø 4 (Ø 0.16)
10-20 (0.39-0.79)
10-16 (0.39-0.63)
137 (5.39)
11 (0.43)
45 (1.77)
35 (1.38)
67,5 (2.66)
94,5 (3.72)
25,5 (1.00)
Ø 4 (Ø 0.16)
6 (0.24)
3.5 (0.14)
8.5 (0.33)
34 (1.34)
59 (2.32)
73.25 (2.88)
84 (3.31)
90 (3.54)
190 (7.48)
17 (0.67)
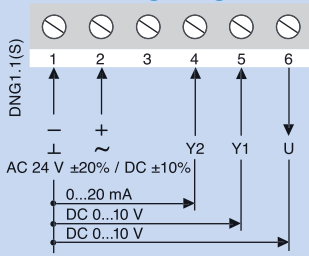
Parallel Connections

| 1 | 2 | 3 | 4 | 5 | 6 |

Slave

| 1 | 2 | 3 | 4 | 5 | 6 |

Master
⊥ —   ~ +   Y2   Y1   U
AC/DC 24 V   0...20 mA   DC 0...10 V   DC 0...10 V
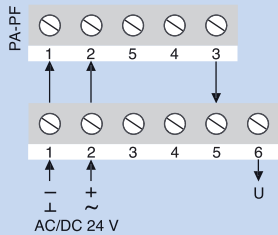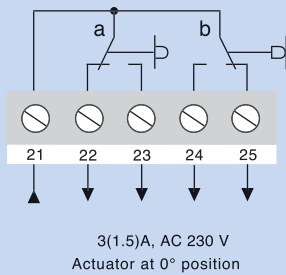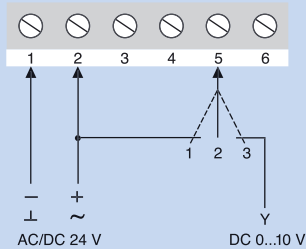
max. 5 actuators
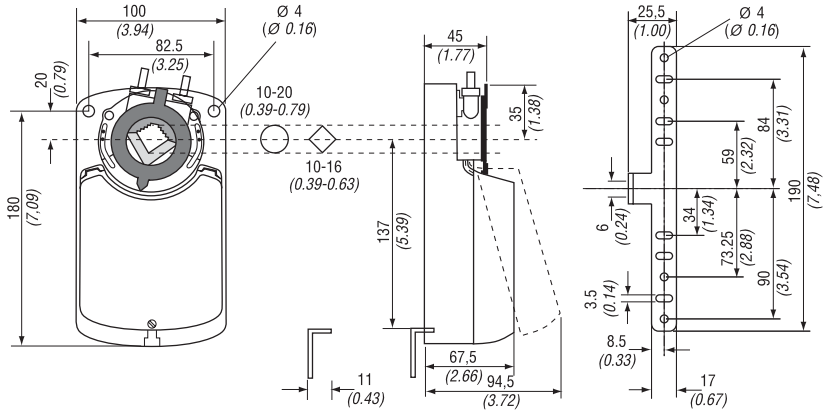
Setting the control Signal

| Control signal Y1 | DC 0...10 V |
| Input resistance | Ri 250 kΩ |

| Control signal Y2 | 0...20 mA |
| Input resistance | Ri 388Ω |

| Position signal U | DC 0...10 V |
| Load resistance | > 50 kΩ |

By switching microswitch **d1** to ON position, the control signal Y1 or Y2 will be adapted to the chosen angle of rotation.
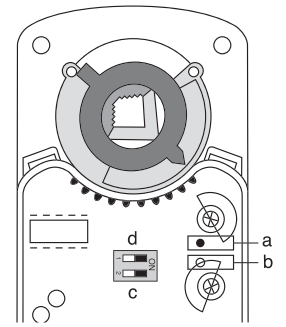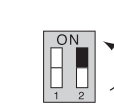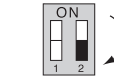
Microswitch **d**
Self-adapting

Dectivated

ON
1 2

Activated

ON
1 2

Changing the direction of rotation

Microswitch **c**

ON
1 2

ON
1 2

d
c
a
b

Position transmitter

PA-PF

| 1 | 2 | 5 | 4 | 3 |

| 1 | 2 | 3 | 4 | 5 | 6 |

⊥ —   ~ +   U
AC/DC 24 V

Position transmitter

The M9132-...-1N can also be controlled using the JOHNSON CONTROLS Positioner (PA/PF) with control signal of DC 0...10 V. For further information concernin the PA and PF positioner please refer to sheet 6.20.
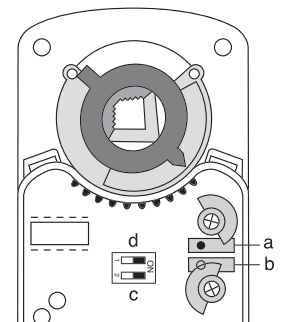
Caution: A maximum of 5 actuators can be controlled in parallel operation.

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.

d
c
a
b

Auxiliary Switches (S)

a   b

| 21 | 22 | 23 | 24 | 25 |

3(1.5)A, AC 230 V
Actuator at 0° position

Override Control

| 1 | 2 | 3 | 4 | 5 | 6 |

1 2 3
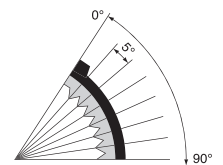
⊥ —   ~ +   Y
AC/DC 24 V   DC 0...10 V

Override control

The actuator M9132-...-1N 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(2) V
3 = Automatic control

Rotation Angle

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

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

Limitation of rotation angle

0°
5°
90°

Adapter release