

OpenAir™

Fast running actuators for air dampers GNP19...

GNP19..



Fast-running rotational version with electronic spring-return function, AC/DC 24 V

- Electromotive rotary actuator for 2-position, 3-position, or modulating control
- Nominal torque 6 Nm at 2 s runtime
- Electronic spring-return function
- Self-centering shaft adapter
- Mechanically adjustable span between 0...90°
- Prewired with 0.9 m standard connection cables
- GNP196.1E with adjustable auxiliary switches for auxiliary functions

Application

- For damper areas up to ca. 1 m², friction dependent.
- For air technology applications within building technology
- For laboratory fume hoods, etc.
- Suitable for use with continuous, 2-position, or 3-position controllers.



The GNP19..1E actuator is **not** suitable for applications in railway vehicles.

Features

DIL switch setting	A DIL switch sets the actuator's functionality.					
	Modulating control				2-position control	3-position control
Factory setting						
	DC 0...10 V 	DC 2...10 V 	0...20 mA 	4...20 mA 	2-Pt 	3-Pt
	Position indication					
Mechanical	angle of rotation position					
Electrical	Output voltage $U = \text{DC } 0 \dots 10 \text{ V}$ is generated proportional to the rotation angle. U depends on the DIL switch's direction of rotation position.					
Rotation angle limitation	The rotation angle of the shaft adapter can be limited mechanically to 5° increments.					
Auxiliary switch GNP196.1E	The switching points for auxiliary switches A and B can be set mutually independent in 5° increments from 0 to 90° .					

Type summary

Type	Power supply	Auxiliary switch	Torque	Holding torque	Damper size	Runtime
GNP191.1E	AC/DC 24 V	No	6 Nm	Reduced	Ca. 1 m ²	2 s
GNP196.1E		Yes				

When installing and operating a rotary actuator type GNP.. in low-noise environments, check the acoustic response of the actuators operated together with the measuring and control equipment.

The combination with differential pressure sensors, sensors, and controllers may result in unwanted operational noise based on the operating settings, regardless of the given manufacturer.

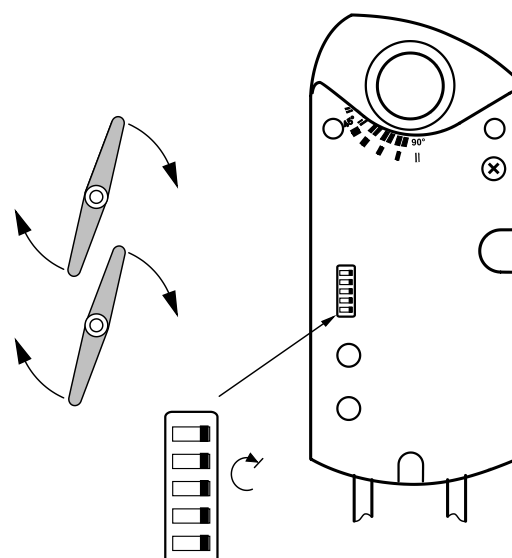
Impacted applications:

- Low-noise HVAC plants in general ¹⁾
 - Supply and extract air plants
 - Fume hood control plants
 - Room pressure control plants
- ¹⁾ E.g. laboratories / fume hoods, hospital rooms or similar plants

Factory setting

The actuator is preset at the factory to:

- 0...10 V
- Clockwise rotation movement
- Counter-clockwise fail-safe movement



Delivery

Individual parts such as shaft adapter with position indication and other mounting materials for the actuator are delivered **unassembled**.

Accessories / spare parts

Various accessories are available to extend the actuators' functionality; e.g. external auxiliary switch (1 or 2 switches) and protective cover; see data sheet **N4697**.

Product documentation


Topic	Title	Document ID
Mounting instructions	Rotary actuators GAP19..1E, GNP19..1E	M4608
Data sheet	Accessories and spare parts for Air damper actuators	N4697

Related documents such as the environmental declarations, CE declarations, etc., can be downloaded from the following Internet address:


<https://siemens.com/bt/download>

Notes

Safety

! CAUTION	
	National safety regulations Failure to comply with national safety regulations may result in personal injury and property damage. <ul style="list-style-type: none"> Observe national provisions and comply with the appropriate safety regulations.

Disposal

	The device is considered an electronic device for disposal in terms of the European Directive and may not be disposed of as domestic waste. <ul style="list-style-type: none"> Use only designated channels for disposing the devices. Comply with all local and currently applicable laws and regulations.
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Technical design

Power supply		
Operating voltage (SELV/PELV)		AC/DC 24 V \pm 20 %
Frequency		50 Hz / 60 Hz
Power consumption	Running	20 VA / 13 W
	Standby	5 W

Functional data		
Torque	Nominal torque	6 Nm
	Maximum torque (when blocked)	18 Nm
Angle of rotation	Nominal angle of rotation	90°
	Maximum rotation angle	95° \pm 2°
Runtime at nominal angle of rotation 90°		2 s (50 Hz)

Inputs		
Positioning signal Y/Y1	Input voltage Y/Y1+ (wires 8-2)	DC 0 (2)...10 V / 0 (4)...20 mA or AC/DC 0 V, AC/DC 24 V "open"
	Positioning resolution DC 0 (2)...1 V / 0 (4)...20 mA	250 step for 90°
	Maximum permissible input voltage	AC/DC 24 V \pm 20 %.
Positioning signal Y2	Input voltage Y2+ (wires 7-2)	AC/DC 0 V, AC/DC 24 V "close"
	Maximum permissible input voltage	AC/DC 24 V \pm 20 %.

Outputs		
Position indicator	Output voltage U (Wires 9-2)	DC 0 (2)...10 V
	Max. output current	DC \pm 1 mA

Mechanical life	
Full cycles	60'000
Partial cycles	5'000'000

Auxiliary switches (GNP196.1E)	
Contact loading	6 A resistive, 2 A inductive
Voltage (no mixed operation AC 24 V / AC 230 V)	AC 24...230 V
Switching range for auxiliary switches	5°...90°
Setting increments	5°

Connection cable	
Cable length	0.9 m
Cable cross-section	0.75 mm ²

Safety class and degree of protection		
Insulation class		EN 60730
	AC 230 V, auxiliary switch	II
Degree of protection of housing		IP54 as per EN 60529 (observe mounting notes)

Environmental conditions		
Operation per IEC 60721-3-3	Climatic conditions	Class 3K5
	Mounting location	Interior, weather-protected
	Temperature	-18...50 °C
	Humidity, non-condensing	<95% r.h.
Transport per IEC 60721-3-2	Climatic conditions	Class 2K3
	Temperature (extended)	-32...70 °C
	Humidity, non-condensing	<95% r.h.
Storage per IEC 60721-3-1	Climatic conditions	Class 1K3
	Temperature (extended)	-32...50 °C
	Humidity, non-condensing	<95% r.h.
Mechanical conditions	Class 2M2	

Standards, directives and approvals			
Product safety:		EN 60730-2-14 Automatic electronic controls for household and similar use (Type 1)	
Electromagnetic compatibility (field of use)		EN IEC 61000-6-2:2019 Immunity standard for industrial environments EN IEC 61000-6-4:2019 Emission standard for industrial environments	
EU conformity (CE)		A5W00004382 ¹⁾	
UK conformity (UKCA)		A5W00221246A ¹⁾	
RCM conformity		A5W00004383 ¹⁾	
UL		GNP191.1E	As per UL 60730 http://ul.com/database
		GNP196.1E	-
	cUL	GNP191.1E	As per CSA-C22.2 No. 24-93
		GNP196.1E	-

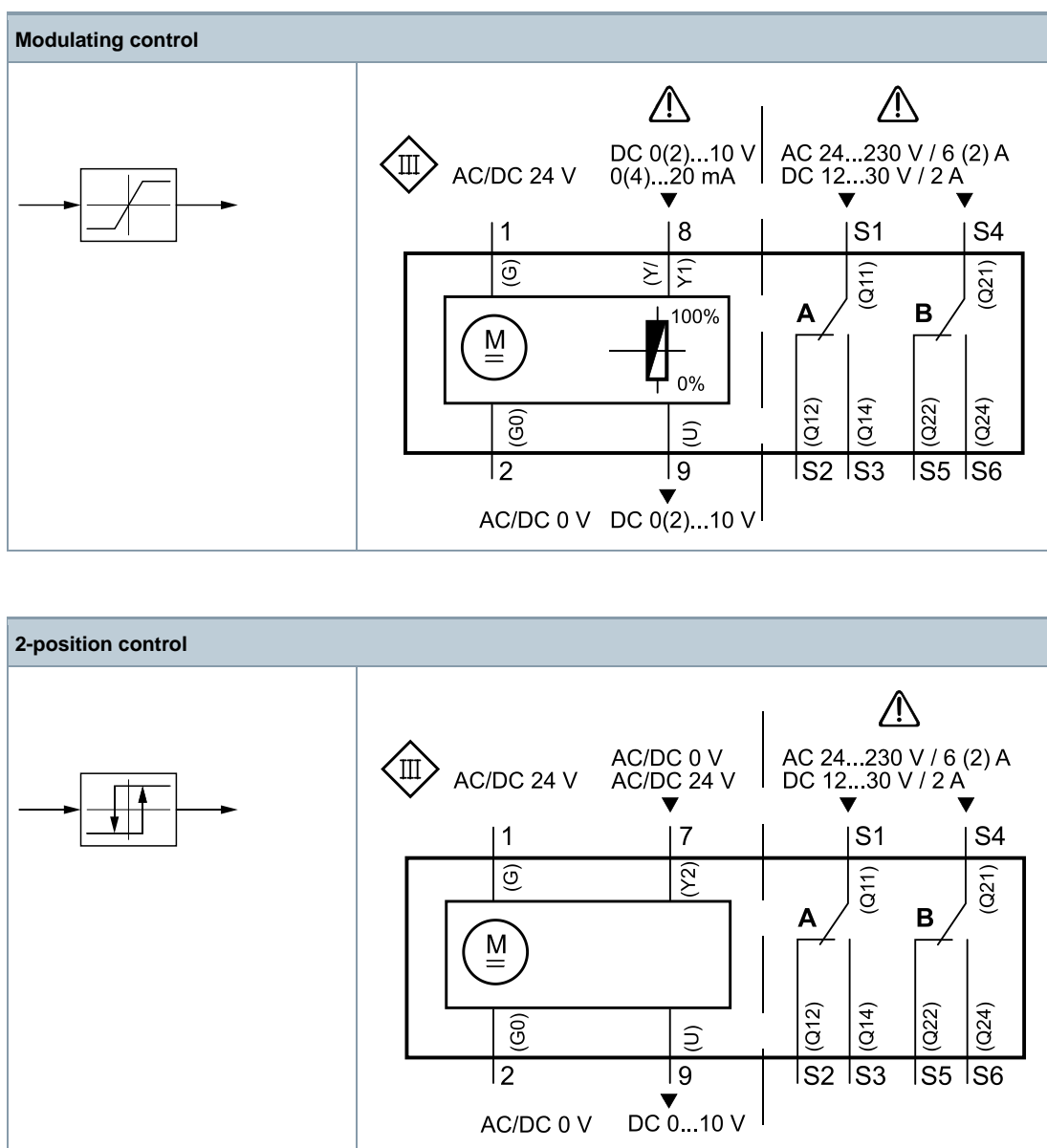
Environmental compatibility	
The product environmental declaration CE1E4608en ¹⁾ contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).	

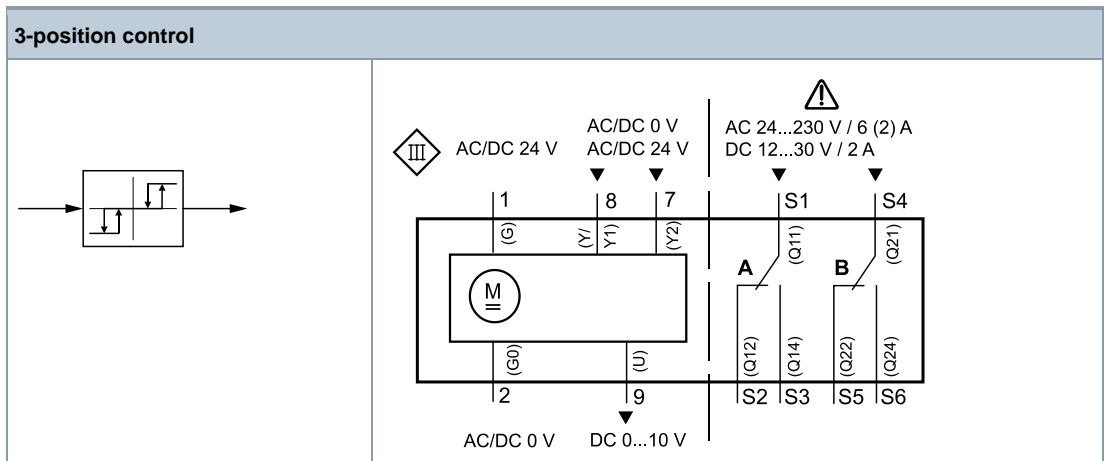
Dimensions		
Actuator (W x H x D)		81 x 192 x 63 mm (see Dimensions [► 9])
Damper shaft	Round	6.4...20.5 mm
	Square	6.4...13 mm
	Minimum shaft length	20 mm
Weight	Without packaging	1.230 kg

¹⁾ The documents can be downloaded at <http://siemens.com/bt/download>.

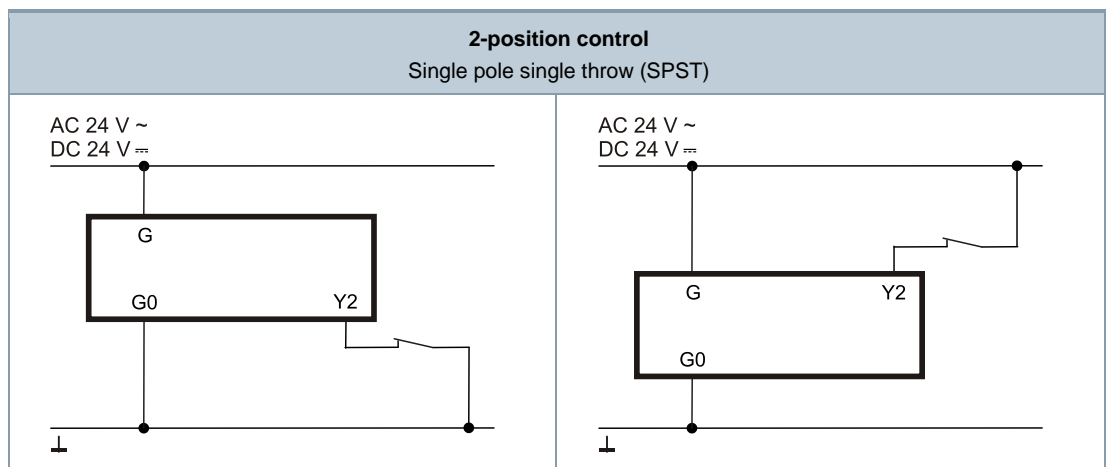
Connection diagrams

Internal diagrams





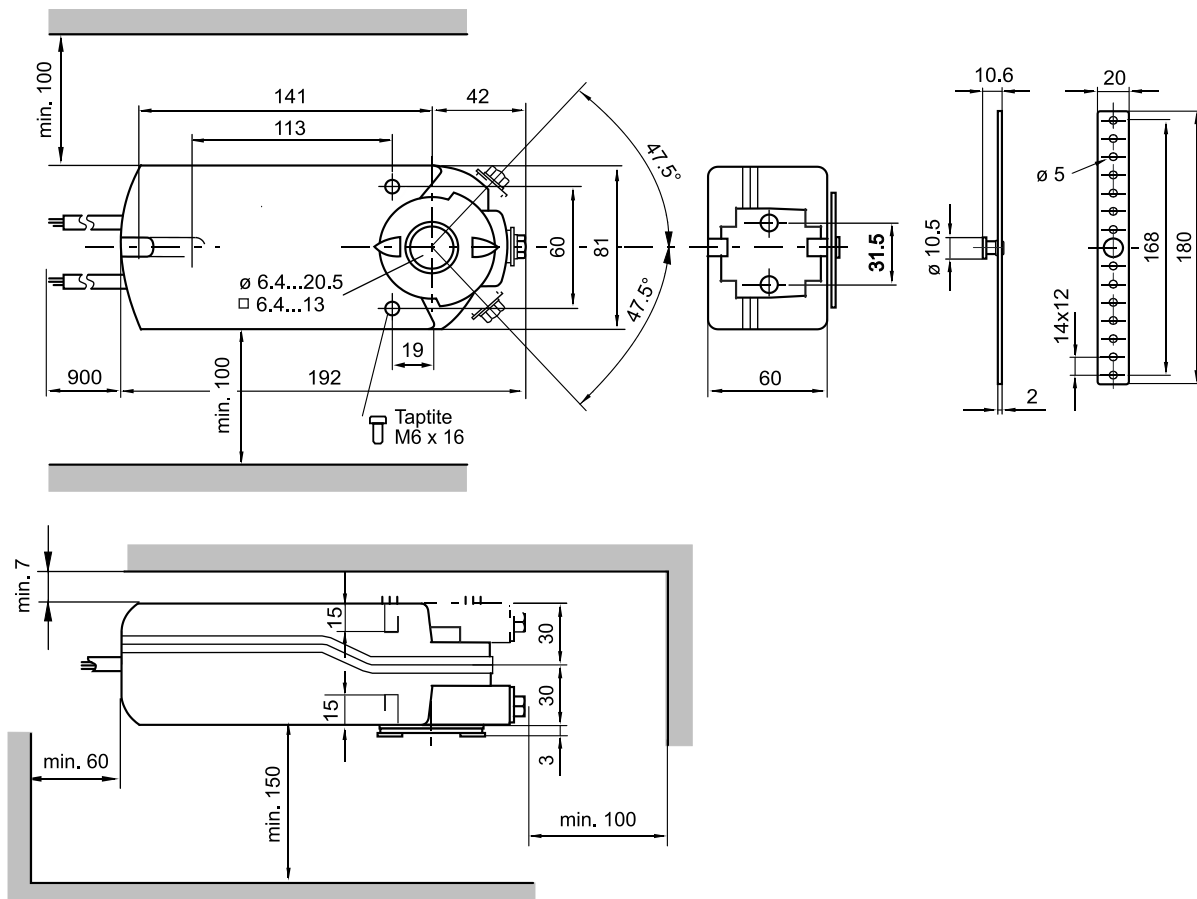
Internal diagrams



Cable designations

Connecting thread	Cable				Meaning
	Code	No.	Color	Abbreviation	
Actuators AC/DC 24 V	G	1	Red	RD	System potential AC/DC 24 V
	G0	2	Black	BK	System neutral
	Y2	7	Orange	OG	Positioning signal AC/DC 0 V, AC/DC 24 V "close"
	Y/Y1	8	Gray	GY	Positioning signal DC 0 (2)...10 V 0 (4)...20 mA or Positioning signal AC/DC 0 V, AC/DC 24 V "open"
	U	9	Pink	PK	Position indication DC 0 (2)...10 V
Auxiliary switch	Q11	S1	Gray/red	GYRD	Switch A input
	Q12	S2	Gray/blue	GYBU	Switch A Normally closed contact
	Q14	S3	Gray/pink	GYPK	Switch A Normally open
	Q21	S4	Black/red	BKRD	Switch B input
	Q22	S5	Black/blue	BKBU	Switch B Normally closed contact
	Q24	S6	Black/pink	BKPK	Switch B Normally open contact

Dimensions



Dimensions in mm

Issued by

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Technical specifications and availability subject to change without notice.

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