



OpenAir™

## Fast running actuators for air dampers

## GNP19...

Fast runner rotary version with electronic fail-safe function, AC/DC 24 V

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**Electronic rotary actuator for 2-position, 3-position, or modulating control, nominal torque 6 Nm, at 2 s running time, with electronic fail-safe function; self-centering shaft adapter, range mechanically adjustable between 0...90°, prewired with 0.9 m long standard connection cables.  
GNP196.1E with adjustable auxiliary switches for auxiliary functions.**

### Use

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- For damper areas up to 1 m<sup>2</sup>, friction dependent.
- For laboratory fume hoods, etc.
- Suitable for use with continuous, 2-position, or 3-position controllers.

## Type summary

Types	Power	Auxiliary switch	Torque	Damper size	Runtime
GNP191.1E	AC/DC 24 V	No	6 Nm	Ca. 1 m <sup>2</sup>	2 s
GNP196.1E		Yes			

### Note

When installing and operating rotary actuators type GxP191.1E and GxP196.1E 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 <sup>1)</sup>
- Supply and extract air plants
- Fume hood control plants
- Room pressure control plants

<sup>1)</sup> e.g. Laboratories / fume hoods, hospital rooms or similar plants

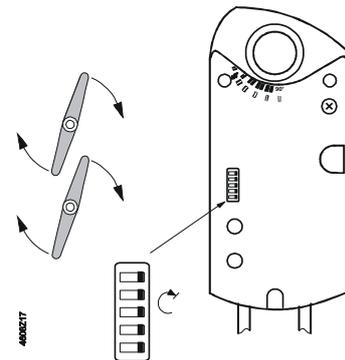
### Alternative

We recommend using rotary actuator HLV40.1 if the applications listed above are motorized or in the event of any general concerns regarding operational noise of GAP actuators (Contact your local Siemens representative).

### Factory setting

The actuators preset at the factory to:

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



## Functions

DIL switch setting		A DIL switch is used to set the actuator's functionality.				
Siemens default setting	Modulating control				2-position control	3-position control

<b>Position indication: Mechanical</b>	Rotary angle position.
<b>Position indication: Electric.</b>	Output voltage $U = DC\ 0...10\ V$ is generated proportional to rotary angle. $U$ depends on the DIL switch's rotary direction position.
<b>Rotary angle limitation</b>	The rotary angle of the shaft adapter can be limited mechanically to $5^\circ$ increments.
<b>GNP196.1E auxiliary switch</b>	The switching points for auxiliary switches A and B can be set mutually independent in $5^\circ$ increments from $0$ to $90^\circ$ .

## Ordering

### 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. rotary/linear mounting kit, external auxiliary switch (1 or 2 switches) and weather shield; see data sheet **N4697**.

## Technical data

⚠ 24 VAC/VDC supply (SELV/PELV)	Operating voltage / Frequency	AC/DC 24 V ± 20 % / 50/60 Hz
	Power consumption:	Actuator running 20 VA / 13 W Hold 5 W
Functional data	Nominal torque	6 Nm
	Maximum torque (when blocked)	18 Nm
	Nominal rotary angle / max. rotary angle	90° / max. 95° ± 2°
	Runtime for 90° rotary angle	2 s (50 Hz)
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 for DC 0 (2)...10 V / 0 (4)...20 mA	250 steps for 90°
Positioning signal Y2	Max. permissible input voltage	AC/DC 24 V ± 20 %
	Input voltage Y2+ (wires 7-2)	AC/DC 0 V, AC/DC 24 V "close"
Position indicator	Max. permissible input voltage	AC/DC 24 V ± 20 %
	Output voltage U (wires 9-2)	DC 0 (2)...10 V
⚠ Auxiliary switch for GAP196	max. output current	DC ± 1 mA
	Contact loading	6 A resistive, 2 A inductive
	Voltage (no mixed operation 24 VAC / 230 VAC)	AC 24...230 V
	Switching range for auxiliary switches	5°...90°
Connection cable	Setting increments	5°
	Cross-section	0.75 mm <sup>2</sup>
Housing type	Standard length	0.9 m
	Protection class as per EN 60 529 (observe mounting notes)	IP 54
Protection class	Insulation class	EN 60 730
	230 VAC, auxiliary switch	II
Environmental conditions	Operation / Transport	IEC 721-3-3 / IEC 721-3-2
	Temperature	-32...+50 °C / -32...+70 °C
	Humidity (non-condensing)	< 95% r.h. / < 95% r.h.
Standards, guidelines	Product safety: Automatic electronic controls for household and similar use	EN 60 730-2-14 (Type 1)
	Electromagnetic compatibility (Application)	For residential, commercial and industrial environments
	EU Conformity (CE)	A5W00004382 <sup>1)</sup>
	RCM Conformity	A5W00004383 <sup>1)</sup>
	Product environmental declaration <sup>2)</sup>	CE1E4608en <sup>1)</sup>
	Dimensions	Actuator W x H x D (see Dimensions)
Weight	Damper shaft: Round	6.4...20.5 mm
	Square	6.4...13 mm
	Min. shaft length	20 mm
	Excl. packaging	1.230 kg

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

<sup>2)</sup> The product environmental declarations contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

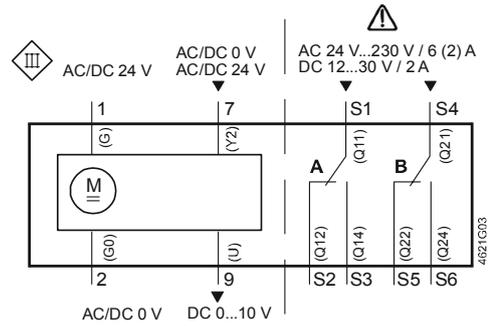
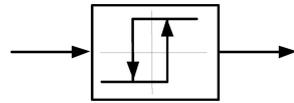
## Disposal



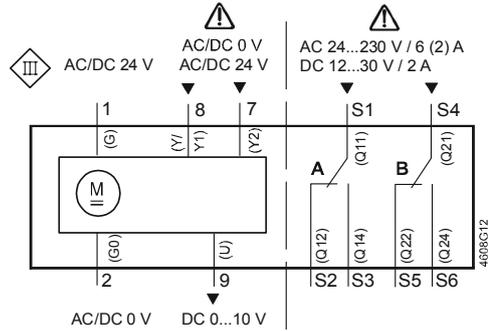
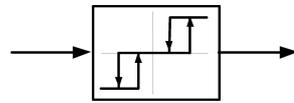
The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

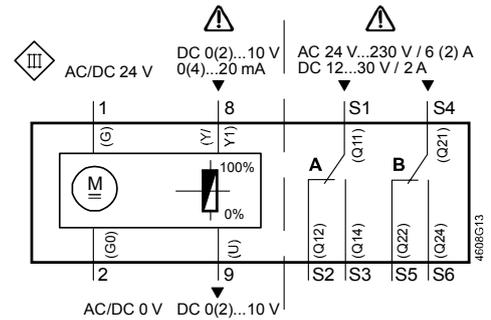
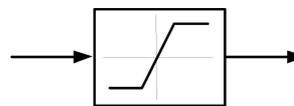
2-position control



3-position control



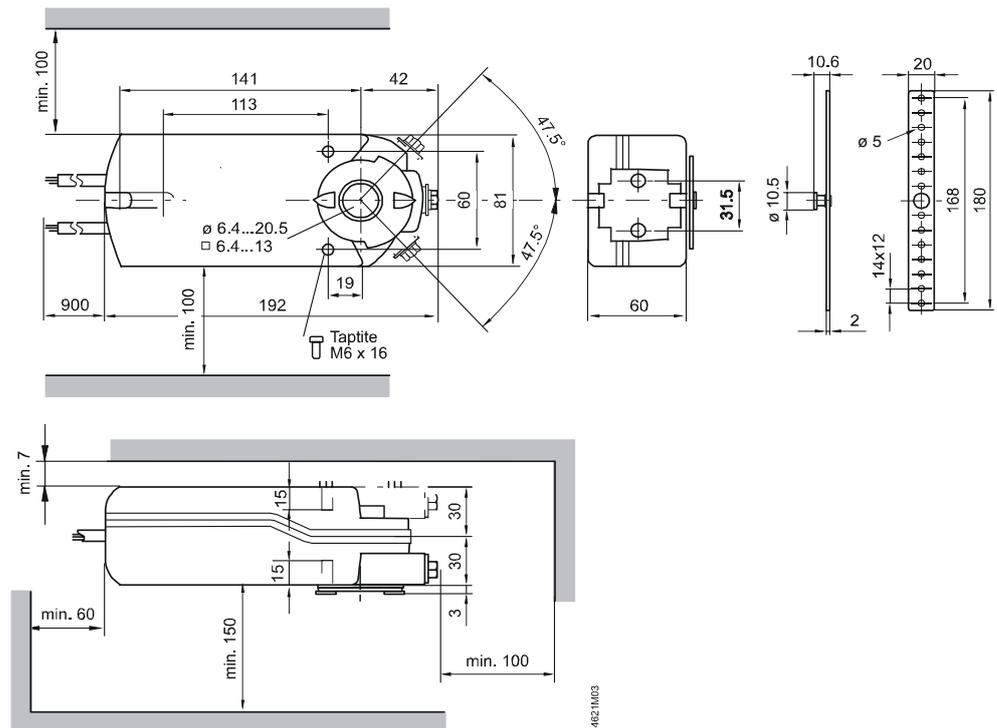
Modulating control



Cable designations

Pin	Cable				Meaning
	Code	No.	Color	Abbreviation	
Actuators AC/DC 24 V	G	1	Red	RD	AC/DC 24 V system potential
	G0	2	Black	BK	System neutral
	Y2	7	orange	OG	Pos. signal AC/DC 0 V, AC/DC 24 V "close"
	Y/Y1	8	gray	GY	Pos. signal DC 0 (2)...10 V 0 (4)...20 mA or Pos. 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 contract
	Q14	S3	gray/pink	GYPK	Switch A Normally open contact
	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

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