



OpenAir™

Fast running actuators for air dampers

GAP19..

Fast runner rotary version, AC/DC 24 V

Electronic actuator for 2-position, 3-position, or modulating control, nominal torque 6 Nm, at 2 s running time, self-centering shaft adapter, range mechanically adjustable between 0...90°, prewired with 0.9 m long standard connection cables. GAP196.1E with adjustable auxiliary switches for auxiliary functions.

Use

- For damper areas up to ca. 1 m², 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 |
|-----------|------------|------------------|--------|----------------------|---------|
| GAP191.1E | AC/DC 24 V | No | 6 Nm | Ca. 1 m ² | 2 s |
| GAP196.1E | | 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 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

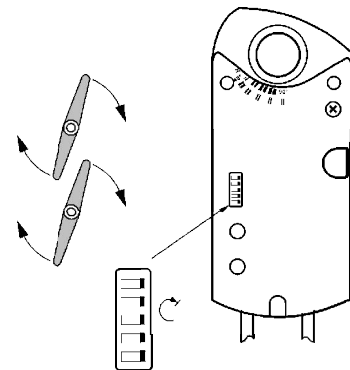
Alternative

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 actuator is preset at the factory to:

- 0...10 V
- Clockwise rotary movement.



Functions



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

| | |
|--|--|
| Position indication: Mechanical | Rotary angle position. |
| Position indication: Electric. | Output voltage $U = DC\ 0..10\ V$ is generated proportional to rotary angle. U depends on the DIL switch's rotary direction position. |
| Rotary angle limitation | The rotary angle of the shaft adapter can be limited mechanically to 5° increments. |
| GAP196.1E auxiliary switch | The switching points for auxiliary switches A and B can be set mutually independent in 5° increments from 0 to 90° . |

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 Hold | |
| Functional data | Nominal torque | 30 VA / 22 W 5 W | |
| | Maximum torque (when blocked) | 6 Nm | |
| | Nominal rotary angle / max. rotary angle | 18 Nm | |
| | Runtime for 90° rotary angle | 90° / max. 95° ± 2° 2 s | |
| 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 AC 24 V / AC 230 V) | AC 24...230 V | |
| | Switching range for auxiliary switches | 5°...90° | |
| Connection cable | Setting increments | 5° | |
| | Cross-sectional area | 0.75 mm ² | |
| 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. | |
| Norms and Directives | 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) | A5W00004380 ¹⁾ | |
| | RCM Conformity | A5W00004381 ¹⁾ | |
| | Product environmental declaration ²⁾ | CE1E4608en ¹⁾ | |
| Dimensions | Actuator W x H x D (see Dimensions) | 81 x 192 x 63 mm | |
| | Damper shaft: | round | 6.4... 20.5 mm |
| | | square | 6.4... 13 mm |
| | Min. shaft length | 20 mm | |
| Weight | Excl. packaging | 1.260 kg | |

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

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

Disposal



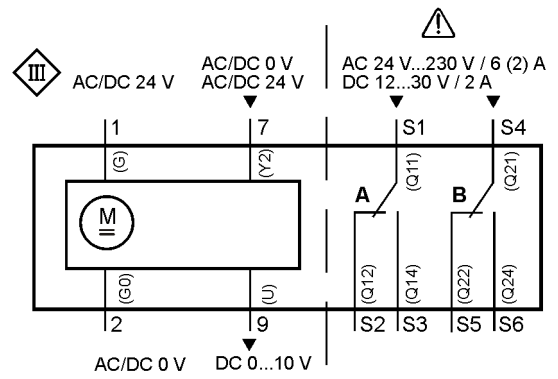
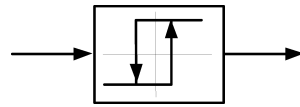
The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

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

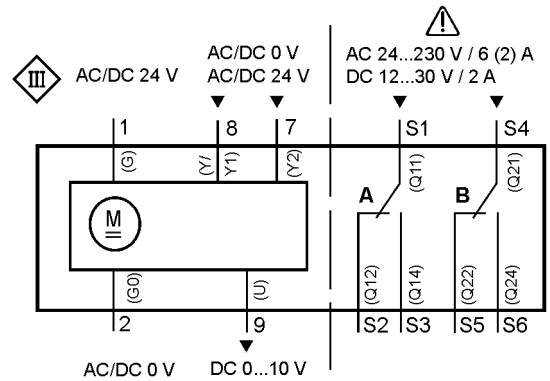
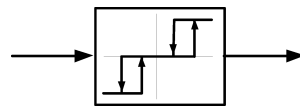
Connection diagrams

Internal diagrams

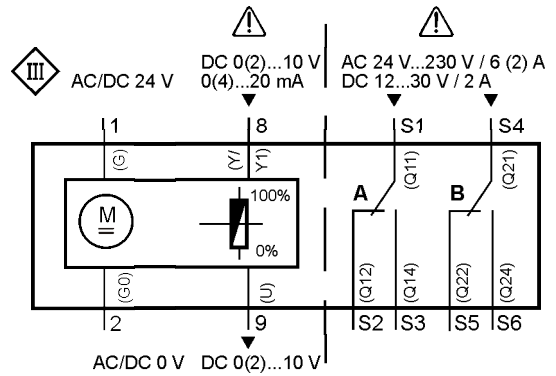
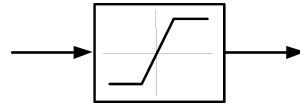
2-position control



3-position control



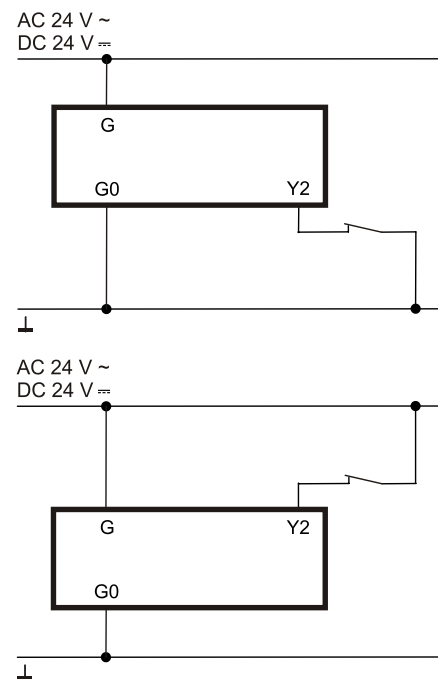
Modulating control



Connection diagrams

2-position control

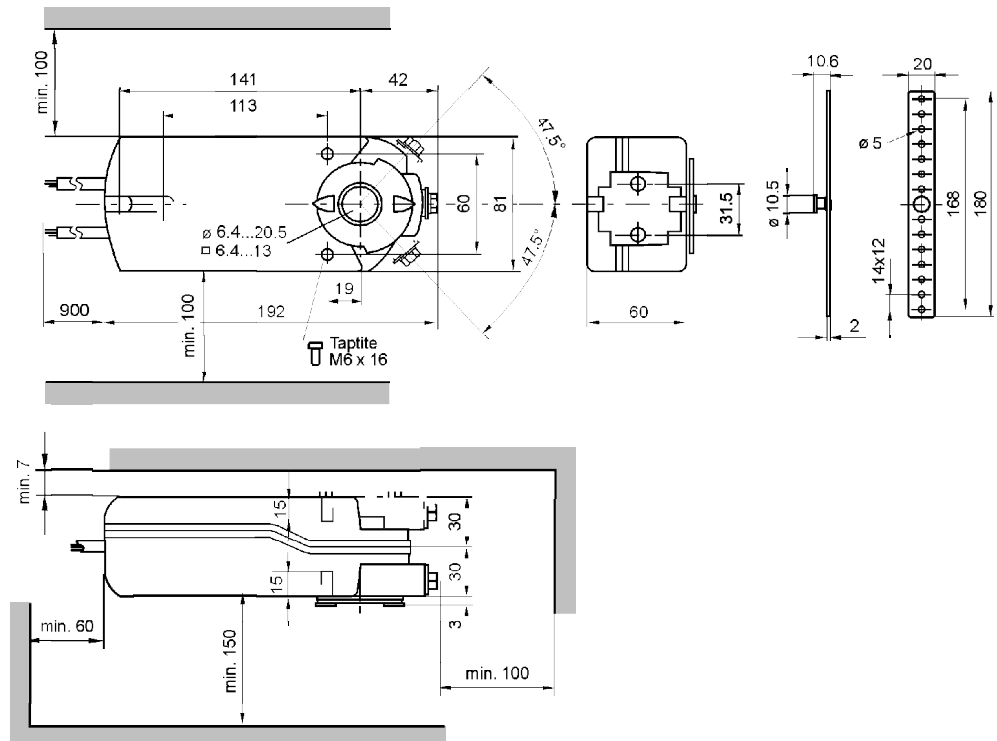
Single pole single throw (SPST)



Cable designations

| Pin | Cable | | | | Meaning |
|-------------------------|-------|-----|------------|-------|--|
| | Code | No. | Color | Abbr. | |
| Actuators 24 VAC/VDC | G | 1 | red | RD | AC/DC 24 V system potential |
| | G0 | 2 | black | BK | System ground |
| | 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 | rose | 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/rose | 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/rose | BKPK | Switch B Normally open contact |

Dimensions



Dimensions in mm

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