



OpenAir™

Air damper actuators

GMA..1

Rotary version with spring return, AC 24 V / DC 24...48 V / AC 230 V

Electronic motor driven actuators for two-position, three-position, and modulating control, nominal torque 7 Nm, with spring return, self-centering shaft adapter, mechanically adjustable span between 0...90°, prewired with 0.9 m long connection cables.

Type-specific variations with adjustable offset and span for the positioning signal, position indicator, feedback potentiometer and adjustable auxiliary switches for supplementary functions.

Remarks

This data sheet provides a brief overview of these actuators. Please refer to the technical basics in CM2Z4614en for a detailed description as well as information on safety, engineering notes, mounting and commissioning.

Use

- For damper areas up to 1.5 m², friction-dependent.
- In ventilation sections where the actuator must move to the zero position (emergency position) during power failure.
- For dampers having two actuators on the same damper shaft (tandem-mounted actuators or Powerpack).

Type summary

| GMA... | 121.1E | 126.1E | 321.1E | 326.1E | 131.1E | 132.1E | 136.1E | 161.1E | 163.1E | 164.1E | 166.1E |
|--|----------------------|--------|--------|--------|------------------------|--------|--------|--------------------|--------|--------|--------|
| Control type | Two-position control | | | | Three-position control | | | Modulating control | | | |
| Operating voltage AC 24 V DC 24...48 V | X | X | | | X | X | X | X | X | X | X |
| Operating voltage AC 230 V | | | X | X | | | | | | | |
| Positioning signal Y DC 0...10 V DC 0...35 V with characteristic function $U_o, \Delta U$ | | | | | | | | X | | | X |
| Position indicator $U = DC 0...10 V$ | | | | | | | | X | X | X | X |
| Feedback potentiometer 1k Ω | | | | | | X | | | | | |
| Auxiliary switches (two) | | X | | X | | | X | | | X | X |
| Powerpack (2 actuators) | X | X | X | X | X | X | X | | | | |

Functions

| Type | GMA12..1 / GMA32..1 | GMA13..1 | GMA16..1 |
|--|---|---|---|
| Control type | Two-position control | Three-position control | Modulating control |
| Positioning signal with adjustable characteristic function | | | DC 0...35 V at Offset $U_o = 0...5 V$ Span $\Delta U = 2...30 V$ |
| Rotary direction | Clockwise or counter-clockwise movement depends on the mounting position of the damper shaft... ...and on the type of control. | | |
| Spring return | On power failure or when the operating voltage is switched off, the spring return moves the actuator to its mechanical zero position. | | |
| Position indication: Mechanical | Rotary angle position indication by using a position indicator. | | |
| Position indication: Electrical | | The feedback potentiometer can be connected to external voltage to indicate the position. | Output voltage $U = DC 0...10 V$ is generated proportional to the rotary angle. |
| Auxiliary switch | The switching points for auxiliary switches A and B can be set independent of each other in increments of 5° within 5° to 90°. | | |
| Powerpack (two actuators, tandem-mounted) | Mounting two of the same actuator types on the same damper shaft may result in a double torque. | Is not permitted | |
| Rotary angle limitation | The rotational angle of the shaft adapter can be limited mechanically at increments of 5°. | | |






Ordering

| | |
|--------------------------|--|
| Note | The potentiometer cannot be added in the field . For this reason, order the type that includes this option. |
| Delivery | Individual parts such as position indicator and other mounting materials for the actuator are not mounted on delivery. |
| Accessories, spare parts | Accessories to functionally extend the actuators are available, e.g. external auxiliary switch, linear/rotary sets and weather protection cover; see data sheet N4697 . |

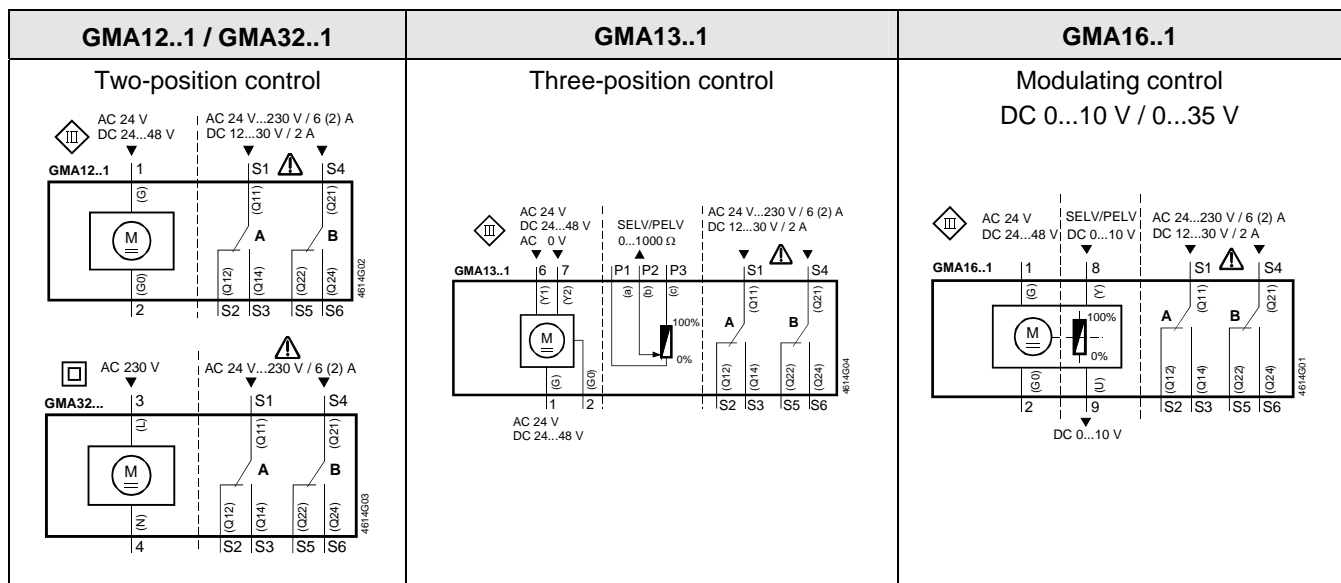
Disposal

The document on technical basics and the environmental declaration provide information on environmental compatibility and disposal of this device.

Technical data

| | | |
|---|---|--|
|  AC 24 V DC 24...48 V supply (SELV/PELV) | Operating voltage AC / Frequency | AC 24 V ± 20 % / 50/60 Hz |
| | Operating voltage (DC) | DC 24...48 V ±20 % |
| | Power consumption | GMA1..1: Running AC: 5 VA / 3.5 W // DC: 3.5 W GMA12..1, 13..1: Holding AC/DC: 2 W GMA16..1,: Holding AC/DC: 2.5 W |
|  AC 230 V supply | Operating voltage / Frequency | AC 230 V ± 10 % / 50/ 60 Hz |
| | Power consumption | GMA32..1: Running 7 VA / 4.5 W Holding 3.5 W |
| Function data | Nominal torque | 7 Nm |
| | Maximum torque (blocked) | 21 Nm |
| | Nominal rotary angle / Max. rotary angle | 90° / 95° ± 2° |
| | Runtime for rotary angle 90° (motor operation) | 90 s |
| | Closing time with return spring (on power failure) | 15 s |
| Positioning signal for GMA13..1 | Switching current (at AC 24 V / DC 24...48 V) for "Open"/"Close" (cores 6,7) | normally 8 mA |
| Positioning signal for GMA16..1, | Input voltage Y (wires 8-2) | DC 0...10 V / DC 2...10 V |
| | Max. permissible input voltage | DC 35 V |
| Characteristic functions for GMA161.1, 166.1 for GMA163.1, 164.1 | Input voltage Y (wires 8-2) | DC 0...35 V |
| | Non-adjustable characteristic function | DC 0...10 V / DC 2...10 V |
| | Adjustable characteristic function | |
| | Offset U _o | DC 0...5 V |
| Position indicator for GMA16..1 | Span ΔU | DC 2...30 V |
| | Output voltage U (cores 9-2) | DC 0...10 V |
| | Max. output current | DC ± 1 mA |
| Feedback potentiometer for GMA132.1 | Change of resistance (wires P1-P2) | 0...1000 Ω |
| | Load | < 1 W |
|  Auxiliary switch for GMA..6.1, 164.1 | AC power supply | |
| | Switching voltage | AC 24...230 V |
| | Nominal current res./ind. | 6 A / 2 A |
| | DC power supply | |
| | Switching voltage | DC 12...30 V |
| Connection cables | Nominal current | DC 2 A |
| | Switching range for auxiliary switches / Setting increments | 5°...90° / 5° |
| | Cross-section | 0.75 mm ² |
| Degree of protection of housing | Standard length | 0.9 m |
| | Degree of protection as per EN 60 529 (note mounting instructions) | IP 54 |
| Protection class | Insulation class | EN 60 730 |
| | AC/DC 24 V, feedback potentiometer | III |
| | AC 230 V, auxiliary switch | II |
| Environmental conditions | Operation / Transport | IEC 721-3-3 / IEC 721-3-2 |
| | Temperature | -32...+55 °C / -32...+70 °C |
| | Humidity (non-condensing) | < 95% r. h. / < 95% r. h. |
| Standards and directives | Product safety: Automatic electrical controls for household and similar use | EN 60 730-2-14 (Type 1) |
| | Electromagnetic compatibility (EMC): | |
| | Immunity for all models, except GMA132.1x | EN 61 000-6-2 |
| | Immunity for GMA132.1x | EN 61 000-6-1 |
| | Emissions for all models | EN 61 000-6-3 |
| |  Conformity: Electromagnetic compatibility | 89/336/EEC |
| | Low voltage directive | 73/23/EEC |
| |  Conformity: Australian EMC Framework | Radio Communication Act 1992 |
| | Radio Interference Emission Standard | AS/NZS 3548 |
| | Dimensions | Actuator W x H x D (see "Dimensions") |
| Damper shaft: Round / square | | 6.4...20.5 / 6.4...13 mm |
| Min. shaft length | | 20 mm |
| Weight | Without packaging: GMA1..1 / GMA32..1 | 1.2 kg / 1.3 kg |

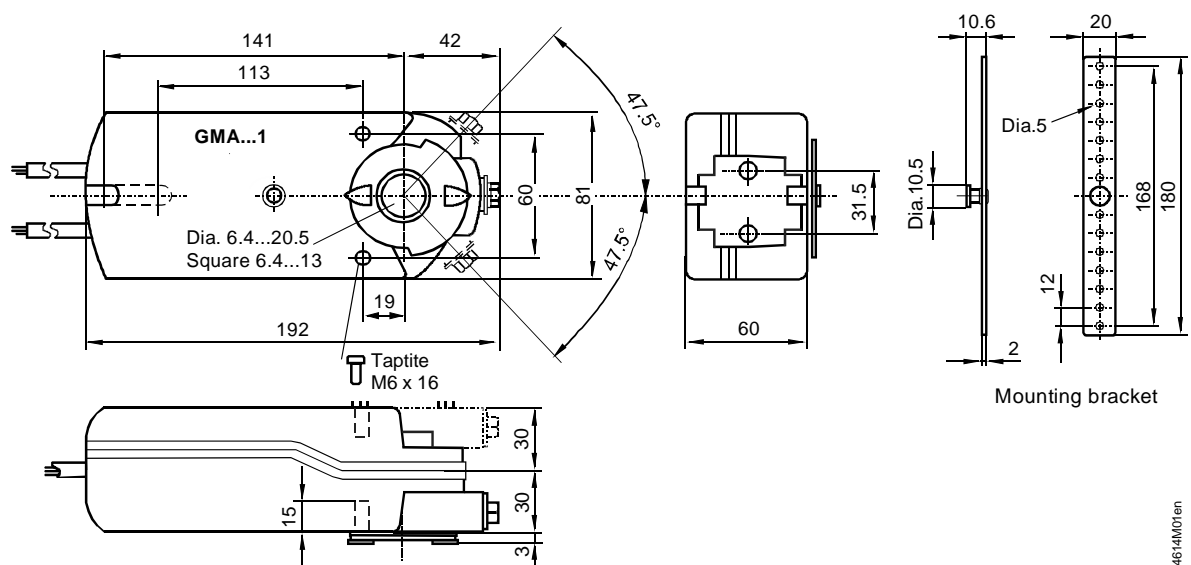
Internal diagrams



Cable labeling

| Pin | Cable | | | | Meaning |
|--------------------------------------|-------|-----|------------|--------------|--|
| | Code | No. | Color | Abbreviation | |
| Actuators AC 24 V DC 24...48 V | G | 1 | red | RD | System potential AC 24 V/DC 24...48 V |
| | G0 | 2 | black | BK | System neutral |
| | Y1 | 6 | purple | VT | Pos. signal AC 0 V/AC 24 V/DC 24...48 V, "open" |
| | Y2 | 7 | orange | OG | Pos. signal AC 0 V/AC 24 V/DC 24...48 V, "close" |
| | Y | 8 | grey | GY | Pos. signal DC 0...10 V, 0...35 V |
| | U | 9 | pink | PK | Position indication DC 0...10 V |
| Actuators AC 230 V | L | 3 | brown | BN | Phase AC 230 V |
| | N | 4 | blue | BU | Neutral conductor |
| Auxiliary switch | Q11 | S1 | grey/red | GY RD | Switch A input |
| | Q12 | S2 | grey/blue | GY BU | Switch A normally-closed contact |
| | Q14 | S3 | grey/pink | GY PK | Switch A normally-open contact |
| | Q21 | S4 | black/red | BK RD | Switch B input |
| | Q22 | S5 | black/blue | BK BU | Switch B normally-closed contact |
| | Q24 | S6 | black/pink | BK PK | Switch B normally-open contact |
| Feedback potentiometer | a | P1 | white/red | WH RD | Potentiometer 0...100 % (P1-P2) |
| | b | P2 | white/blue | WH BU | Potentiometer pick-off |
| | c | P3 | white/pink | WH PK | Potentiometer 100...0 % (P3-P2) |

Dimensions



Dimensions in mm