



OpenAir™

Air damper actuators

Linear version, AC 24 V / AC 230 V

GDB...2
GLB...2

Electronic motor-driven linear actuators for three-position and modulating control, nominal force 125 N (GDB) / 250 N (GLB), travel 60 mm, pre-wired with 0.9 m long connection cables.

Type-specific variations with adjustable offset and span for the positioning signal, position indicator, feedback potentiometer, self-adaptation of the linear span, 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 document Z4664E for a detailed description as well as information on safety, engineering notes, mounting and commissioning.

Use

- For damper areas up to 0.8 m² (GDB) / 1.5 m² (GLB), friction-dependent.
- Suitable for modulating controllers (DC 0...10 V) or three-position controllers (e.g. rotary and linear dampers at air outlets).

Type summary

| GDB.../GLB... | 131.2E | 132.2E | 136.2E | 331.2E | 332.2E | 336.2E | 161.2E | 163.2E | 164.2E | 166.2E |
|------------------------------------------------------------------|------------------------|--------|--------|--------|--------|--------|--------------------|--------|--------|--------|
| Control type | Three-position control | | | | | | Modulating control | | | |
| Operating voltage AC 24 V | X | X | X | | | | X | X | X | X |
| Operating voltage AC 230 V | | | | X | X | X | | | | |
| Positioning signal Y DC 0...10 V | | | | | | | X | X | X | X |
| DC 0...35 V with character- istic function U_0 , ΔU | | | | | | | | X | X | |
| Position indicator $U = DC 0...10 V$ | | | | | | | X | X | X | X |
| Feedback potentiometer 1 k Ω | | X | | | X | | | | | |
| Self-adaptation of linear span | | | | | | | X | X | X | X |
| Auxiliary switches (two) | | | X | | | X | | | X | X |
| Linear direction switch | | | | | | | X | X | X | X |

Functions

| Type | GDB.3..2 / GLB.3..2 | GDB16..2 / GLB16..2 |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control type | Three-position control | Modulating control |
| Positioning signal with ad- justable characteristic func- tion | | DC 0...35 V at Offset $U_0 = 0...5 V$ Span $\Delta U = 2...30 V$ |
| Linear travel direction | The direction of linear travel depends on... ...the type of control. With no power ap- plied, the actuator remains in the respec- tive position. | |
| | | ...the DIL switch setting outward / inward. |
| Position indication | The feedback potentiometer can be con- nected to voltage to indicate the position. | Position indicator: Output voltage $U = DC 0...10 V$ is generated proportional to the linear travel. U depends of DIL switch setting. |
| Auxiliary switch | The switching points for auxiliary switches A and B can be set independent of each other in increments of 3.4 between 3.4 and 57.1 mm. | |
| Self-adaptation of linear span | | When self-adaptation is active, the actua- tor automatically determines the mechani- cal end positions of the linear span and maps the characteristic function (U_0 , ΔU) to the calculated linear span. |
| Linear limitation | Stepless limitation between 0 and 60 mm for the linear travel is possible by means of a clamp from the linear/rotary set ASK55.2 | |

Ordering

Hinweis

Potentiometer and auxiliary switches **cannot be added in the field**. For this reason,
order the type that includes the required options.

Accessories, spare parts

Accessories to functionally extend the actuators are available, e.g., various linear/rotary
sets; see data sheet **N4698**.

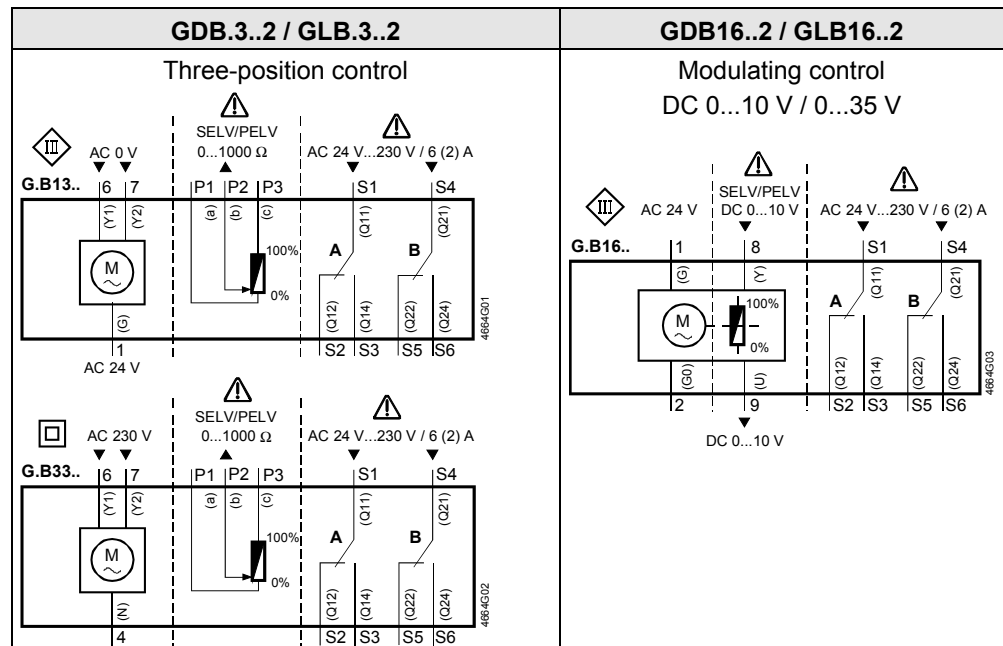
Technical data

| | | |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------|
| ⚠ AC 24 V supply (SELV/PELV) | Operating voltage / Frequency | AC 24 V ± 20 % / 50/60 Hz |
| | Power consumption GDB13..2 / GLB13..2 GDB16..2 / GLB16..2 Push rod moves Holding | 2 VA / 1 W 3 VA / 2 W 1 W |
| ⚠ AC 230 V supply | Operating voltage / Frequency | AC 230 V ± 10 % / 50/60 Hz |
| | Power consumption GDB33..2/GLB33..2 | 2 VA / 1 W |
| Function data | Nominal linear force | 125 N (GDB) / 250 N (GLB) |
| | Maximum linear force | 180 N (GDB) / 350 N (GLB) |
| | Maximum linear travel | 60 mm |
| | Runtime for 60 mm linear travel | 150 s (50 Hz) / 125 s (60 Hz) |
| Positioning signal Y for GDB/GLB | Input voltage Y (wires 8-2) | DC 0...10 V, intern limited of DC 10 V |
| | Max. permissible input voltage | DC 35 V |
| Characteristic functions for GDB161.2 / GLB166.2 for GDB163.2 / GLB164.2 | Input voltage Y (wires 8-2) | DC 0...35 V |
| | Non-adjustable characteristic function | DC 0...10 V |
| | Adjustable characteristic function Offset U _o | DC 0...5 V |
| | Span ΔU | DC 2...30 V |
| Position indicator for GDB/GLB16..2 | Output voltage U (wires 9-2) | DC 0...10 V or DC 10...0 V |
| | Max. output current | DC ± 1 mA |
| Feedback potentiometer for GDB/GLB132.2/GDB/GLB332.2 | Change of resistance (wires P1-P2) | 0...1000 Ω |
| | Load | < 1 W |
| ⚠ Auxiliary switches for GDB/GLB..6.2 | Contact rating | 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 | 3.4...57.1 mm |
| | Setting increments | 3.4 mm |
| Connection cables | Cross-section | 0.75 mm ² |
| | Standard length | 0.9 m |
| Degree of protection of housing | Degree of protection as per EN 60 529 (note mounting instructions) IP 40 | |
| Protection class | Insulation class | EN 60 730 |
| | AC 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. F. / < 95% r. F. |
| 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 GDB/GLB.32.2x | IEC/EN 61 000-6-2 |
| | Immunity for GDB/GLB.32.2x | IEC/EN 61 000-6-1 |
| | Emissions for all models | IEC/EN 61 000-6-3 |
| | ☑ Conformity: | |
| | Electromagnetic compatibility | 89/336/EEC |
| | Low voltage directive | 73/23/EEC |
| | ☑ Conformity: | |
| | Australian EMC Framework Radio Interference Emission Standard | Radio Communication Act 1992 AS/NZS 3548 |
| Dimensions | Actuator W x H x D (see "Dimensions") | 68 x 152 x 59 mm |
| | Push rod (profile) | 10 x 4 mm |
| Weight | Without packaging: GDB... / GLB... 0.48 kg | |

Disposal

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

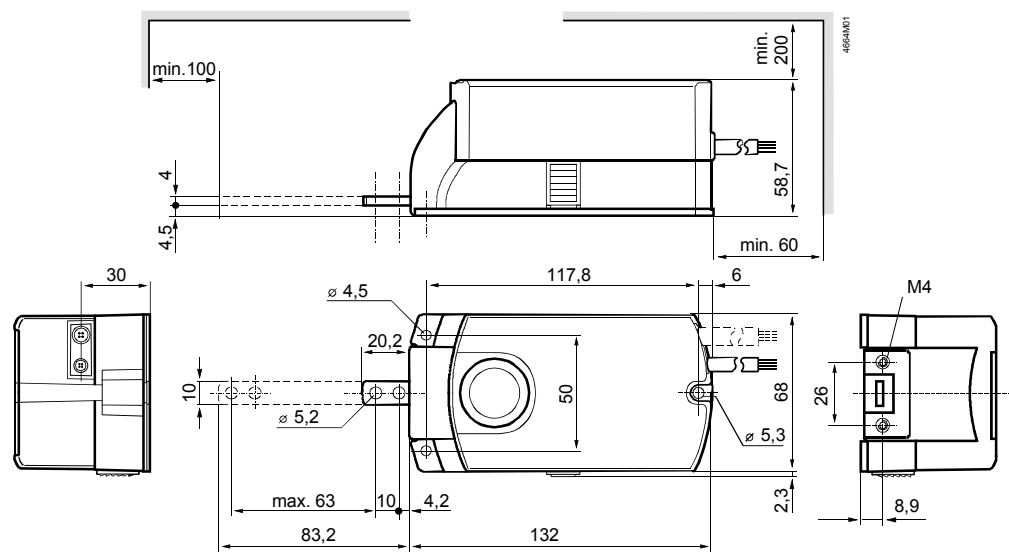
Internal diagrams



Cable labeling

| Pin | Cable | | | | Meaning |
|------------------------|-------|--------|------------|--------------|--------------------------------------|
| | Code | Number | Color | Abbreviation | |
| Actuators AC 24V | G | 1 | red | RD | System potential AC 24 V |
| | G0 | 2 | black | BK | System neutral |
| | Y1 | 6 | purple | VT | Pos. signal AC 0 V, outward travel |
| | Y2 | 7 | orange | OG | Pos. signal AC 0 V, inward travel |
| | 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 230V | N | 4 | blue | BU | Neutral conductor |
| | Y1 | 6 | black | BK | Pos. signal AC 230 V, outward travel |
| | Y2 | 7 | white | WH | Pos. signal AC 230 V, inward travel |
| 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