



OpenAir™

## Air damper actuators

**GDB...1**  
**GLB...1**

Rotary version, modulating, AC 24 V / AC 230 V

**Electronic motor driven actuators for three-position and modulating control, nominal torque 5 Nm (GDB) or 10 Nm (GLB), mechanically adjustable span between 0...90°, 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 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 Z4634E for a detailed description as well as information on safety, engineering notes, mounting and commissioning Z4634E.

### Use

- For damper areas up to 0.8 m<sup>2</sup> (GDB) / 1.5 m<sup>2</sup> (GLB), friction-dependent
- Suitable for use with modulating controllers (DC 0...10 V) or three-position controllers for air dampers or air throttles.

## Type summary

| GDB.../GLB...   | 131.1E                 | 132.1E | 136.1E | 331.1E | 332.1E | 336.1E | 161.1E             | 163.1E | 164.1E | 166.1E |
|---|------------------------|--------|--------|--------|--------|--------|--------------------|--------|--------|--------|
| Control type  | Three-position control |        |        |        |        |        | Modulating control |        |        |        |
| Operating voltage<br>AC 24 V                                | X                      | X      | X      |        |        |        | X                  | X      | X      | X      |
| Operating voltage<br>AC 230 V                               |                        |        |        | X      | X      | X      |                    |        |        |        |
| Positioning signal Y<br>DC 0...10 V                         |                        |        |        |        |        |        | X                  | X      | X      | X      |
| DC 0...35 V with characteristic<br>function $U_0, \Delta U$ |                        |        |        |        |        |        |                    | X      | X      |        |
| Position indicator<br>$U = DC 0...10 V$                     |                        |        |        |        |        |        | X                  | X      | X      | X      |
| Feedback potentiometer 1 k $\Omega$                         |                        | X      |        |        | X      |        |                    |        |        |        |
| Self-adaption of rotational angle<br>range                  |                        |        |        |        |        |        | X                  | X      | X      | X      |
| Auxiliary switches (two)                                    |                        |        | X      |        |        | X      |                    |        | X      | X      |
| Rotary direction switch                                     |                        |        |        |        |        |        | X                  | X      | X      | X      |

## Functions

| Type  | GDB.3..1 / GLB.3..1  | GDB16..1 / GLB16..1   |
|---|--|---|
| Control type  | Three-position control   | Modulating control  |
| Positioning signal with adjustable<br>characteristic function |  | DC 0...35 V at<br>Offset $U_0 = 0...5 V$<br>Span $\Delta U = 2...30 V$  |
| Rotary direction  | Clockwise or counter-clockwise direction depends...<br>...the type of control. With no power applied, the actuator remains in the respective 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.  | Position indicator:<br>Output voltage $U = DC 0...10 V$ is generated proportional to the rotary angle. $U$ depends on the rotary direction of the DIL switch setting.   |
| Auxiliary switch  | The switching points for auxiliary switches A and B can be set independent of each other in increments of 5° within 0° to 90°.                         |   |
| Self-adaption of linear span                                  |  | When self-adaptation is active, the actuator automatically determines the mechanical end positions of the linear span and maps the characteristic function ( $U_0, \Delta U$ ) to the calculated linear span. |
| Rotary angle limitation                                       | The rotary angle of the shaft adapter can be limited mechanically at increments of 5°.   |   |

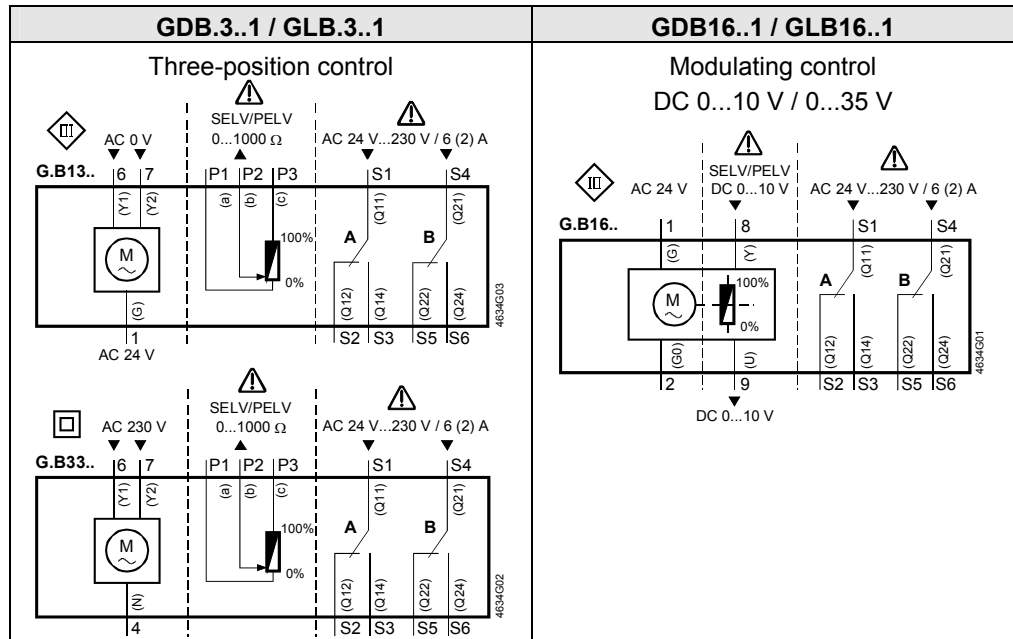
## Ordering

**Note** 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., rotary/linear sets, see data sheet **N4698**.



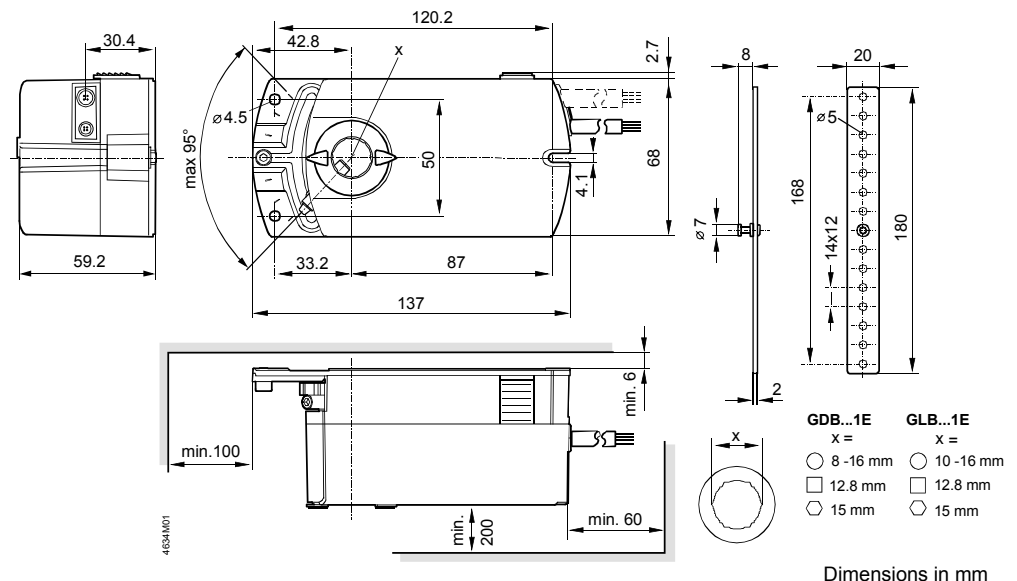
Internal diagrams



Cable labeling

| Pin                       | Cable |     |             |              | Meaning                                    |
|---------------------------|-------|-----|-------------|--------------|--|
|                           | Code  | No. | Color       | Abbreviation |  |
| Actuators<br>AC 24 V      | G     | 1   | red         | RD           | System potential AC 24 V                   |
|                           | G0    | 2   | black       | BK           | System neutral                             |
|                           | Y1    | 6   | purple      | VT           | Position signal AC 0 V, clockwise          |
|                           | Y2    | 7   | orange      | OG           | Position signal AC 0 V, counter-clockwise  |
|                           | Y     | 8   | grey        | GY           | Position signal DC 0...10 V, 0...35 V      |
|                           | U     | 9   | pink        | PK           | Position indication DC 0...10 V            |
| Actuators<br>AC 230V      | N     | 4   | blue        | BU           | Neutral conductor                          |
|                           | Y1    | 6   | black       | BK           | Control signal AC 230 V, clockwise         |
|                           | Y2    | 7   | white       | WH           | Control signal AC 230 V, counter-clockwise |
| 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<br>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