



OpenAir™

Air damper actuators

GEB...2

Linear version, AC 24 V / AC 230 V

Electronic motor-driven linear actuators for three-position and modulating control, nominal force 400 N, travel 60 mm, prewired 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 CM2Z4653en for a detailed description as well as information on safety, engineering notes, mounting and commissioning.

Use

- For damper areas up to 3 m², 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

GEB....	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 2...10 V							X			X
DC 0...35 V with characteristic function $U_0, \Delta U$								X	X	
Position indicator DC 0...10 V							X	X	X	X
Feedback potentiometer 1k 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	GEB13..2 / GEB33..2	GEB16..2
Control type	Three-position control	Modulating control
Positioning signal with adjustable characteristic function		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 applied, the actuator remains in the respective position.	...the DIL switch setting outward / inward.
Position indication	The feedback potentiometer can be connected to voltage to indicate the position.	Position indicator: Output voltage $U = DC 0...10$ V is generated proportional to the linear travel. U depends on the linear direction of the switch setting.
Self-adaptation 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.
Auxiliary switch	The switching points for auxiliary switches A and B can be set independent of each other in increments of 3.2 between 3.2 and 56.8 mm.	
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 ASK72.3.	






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., various linear/rotary sets; see data sheet **N4697**.

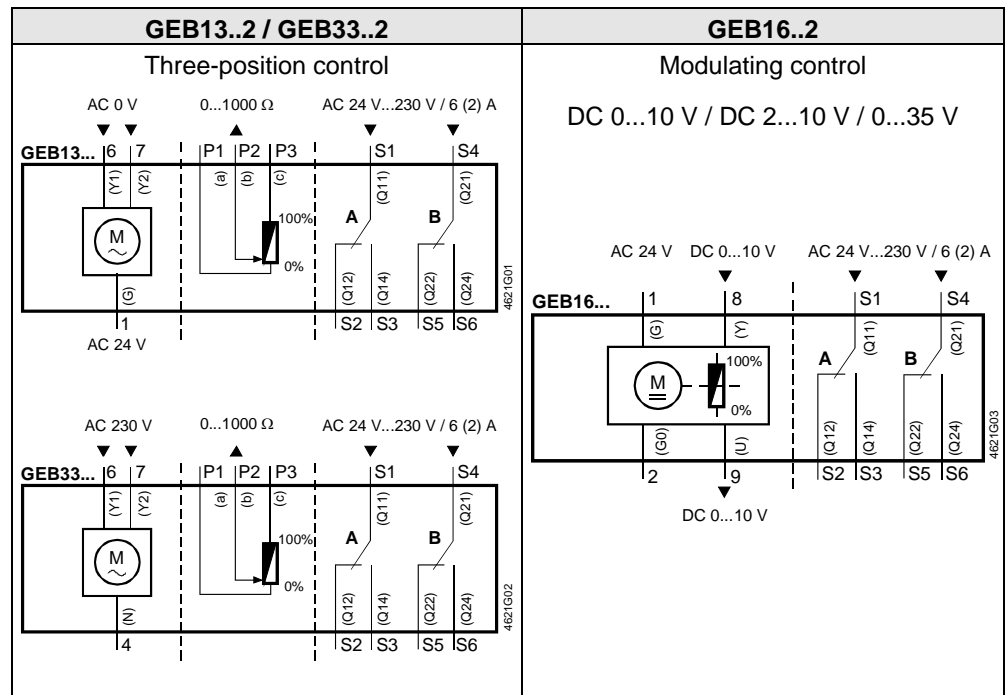
Technical data

 AC 24 V supply (SELV/PELV)	Operating voltage / Frequency	AC 24 V \pm 20 % / 50/60 Hz
	Power consumption	GEB13..2: Push rod moves GEB16..2: Push rod moves Holding
 AC 230 V supply	Operating voltage / Frequency	AC 230 V \pm 10 % / 50/60 Hz
	Power consumption	GEB33..2: 3 VA / 3 W
Function data	Nominal linear force	400 N
	Maximum linear force	800 N
	Nominal linear travel	57 mm
	Maximum linear travel	60 mm
	Runtime for 57 mm linear travel	150 s (50 Hz) / 125 s (60 Hz)
Positioning signal Y for GEB16..:	Input voltage Y (wires 8-2)	DC 0...10 V / DC 2...10 V
	Max. permissible input voltage	DC 35 V
Characteristic functions for GEB161.2 / GEB166.2 for GEB163.2 / GEB164.2	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 Span Δ U
Position indicator for GEB16...2	Output voltage U (cores 9-2)	DC 0...10 V
	Max. output current	DC \pm 1 mA
Feedback potentiometer for GEB132.2 / GEB332.2	Change of resistance (wires P1-P2)	0...1000 Ω
	Load	< 1 W
 Auxiliary switches for GEB..6.2 / GEB164.2	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	3.2...56.8 mm
Connection cables	Setting increments	3.2 mm
	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 40
Protection class	Insulation class	EN 60 730
	AC 24 V, feedback potentiometer	III
Environmental conditions	AC 230 V, auxiliary switch	II
	Operation / Transport	IEC 721-3-3 / IEC 721-3-2
	Temperature	-32...+55 °C / -32...+70 °C
Standards and directives	Humidity (non-condensing)	< 95% r.h. / < 95% r.h.
	Product safety: Automatic electrical controls for household and similar use	EN 60 730-2-14 (Type 1)
 Conformity	Electromagnetic compatibility (EMC)	
	Immunity for all models, except GEB132.2x; GEB332.2x	EN 61 000-6-2
	Immunity for GEB132.2x; GEB332.2x	EN 61 000-6-1
	Emissions for all models	EN 61 000-6-3
	Electromagnetic compatibility	89/336/EEC
	Low voltage directive	73/23/EEC
	 Conformity	Radio Communication Act 1992
Australian EMC Framework	AS/NZS 3548	
Dimensions	Radio Interference Emission Standard	
	Actuator W x H x D (see "Dimensions")	81 x 212 x 60 mm
Weight	Push rod (profile)	16 x 5 mm
	Without packaging: GEB1...2	0.8 kg
	GEB33..2	0.9 kg

Disposal

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

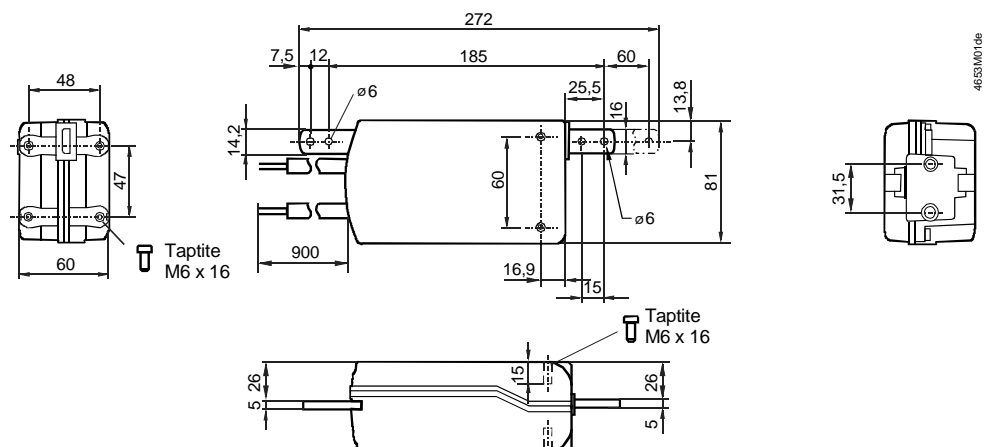
Internal diagrams



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, inward travel
	Y2	7	orange	OG	Pos. signal AC 0 V, outward travel
	Y	8	gray	GY	Pos. signal DC 0...10 V, 2...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, inward travel
	Y2	7	white	WH	Pos. signal AC 230 V, outward travel
Auxiliary switch	Q11	S1	gray/red	GY RD	Switch A Input
	Q12	S2	gray/blue	GY BU	Switch A Normally closed contact
	Q14	S3	gray/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
Positioner	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