



OpenAir™

Air damper actuators

GBB...2

Linear version, AC 24 V / AC 230 V

Electronic motor-driven linear actuators for three-position and modulating control, nominal force 550 N, travel 75 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 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 Z4656E for a detailed description as well as information on safety, engineering notes, mounting and commissioning.

Use

- For damper areas up to 4 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

GBB....	131.2E	135.2E	136.2E	331.2E	335.2E	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
DC 0...35 V with character- istic function U_0 , ΔU								X	X	
Position indicator DC 0...10 V							X	X	X	X
Feedback potentiometer 1 k Ω		X			X					
Auxiliary switches (two)		X	X		X	X			X	X
Linear direction switch							X	X	X	X

Functions

Type	GBB13..2 / GBB33..2	GBB16..2
Control type	Three-position control	Modulating control
Positioning signal with adjust- able 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 ap- plied, the actuator remains in the respec- tive position.	
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 on the linear direction of the switch setting.
Auxiliary switch	The switching points for auxiliary switches A and B can be set independent of each other in increments of 4 between 4 and 66.8 mm.	

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

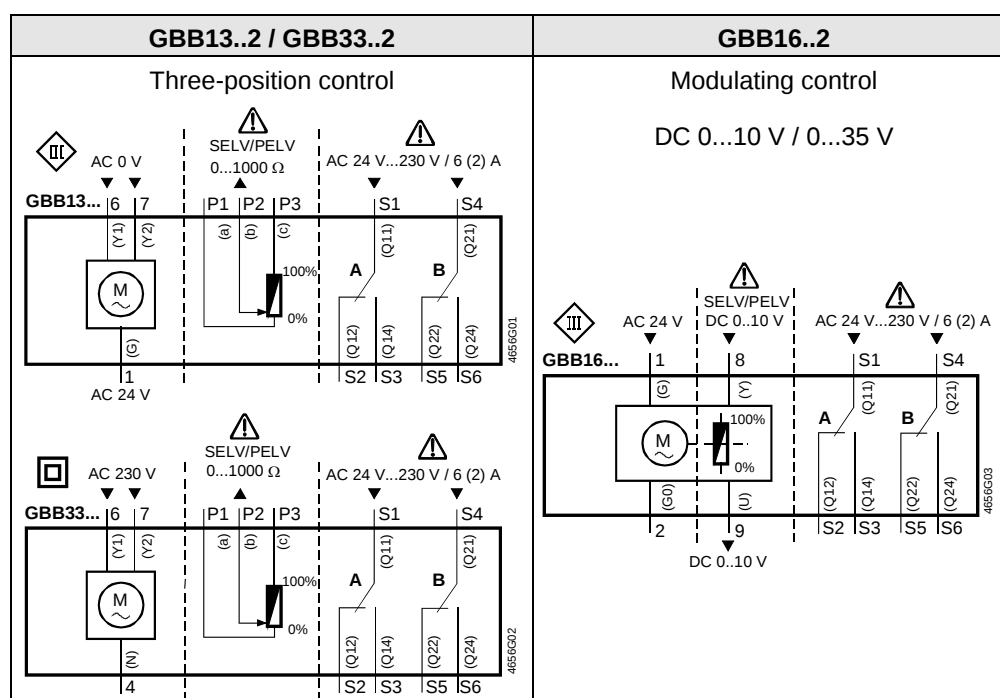
Accessories to functionally extend the actuators are available, e.g., various linear/rotary
sets; see data sheet **N4699**.

Technical data

 AC 24 V supply (SELV/PELV)	Operating voltage / Frequency	AC 24 V $\pm$ 20 % / 50/60 Hz
	Power consumption GBB13..2:	7 VA / 7 W
 AC 230 V supply	GBB16..2: Push rod moves	8 VA / 8 W
	Holding	1.1 W
Function data	Operating voltage / Frequency	AC 230 V $\pm$ 10 % / 50/60 Hz
	Power consumption GBB33..2:	8 VA / 5 W
	Nominal linear force	550 N
	Maximum linear force	1100 N
	Maximum linear travel	75 mm
Positioning signal Y for GBB16..2	Runtime for 75 mm linear travel	150 s (50 Hz) / 125 s (60 Hz)
	Input voltage Y (wires 8-2)	DC 0...10 V
	Max. permissible input voltage	DC 35 V
Characteristic functions for GBB161.2 / GBB166.2 for GBB163.2 / GBB164.2	Input voltage Y (wires 8-2)	DC 0...35 V
	Non-adjustable characteristic function	DC 0...10 V
	Adjustable characteristic function	
	Offset U ₀	DC 0...5 V
	Span Δ U	DC 2...30 V
Position indicator for GBB16...2	Output voltage U (wires 9-2)	DC 0...10 V
	Max. output current	DC $\pm$ 1 mA
Feedback potentiometer for GBB135.2 / GBB335.2	Change of resistance (wires P1-P2)	0...1000 Ω
	Load	< 1 W
 Auxiliary switches for GBB..4.2/.5.2/.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	4...66.8 mm
	Setting increments	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 54
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 GBB.35.2x	IEC/EN 61 000-6-2
	Immunity for GBB.35.2x	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 Communication Act 1992
Dimensions	Radio Interference Emission Standard	AS/NZS 3548
	Actuator W x H x D (see "Dimensions")	81 x 212 x 60 mm
Weight	Push rod (profile)	16 x 5 mm
	Without packaging	2 kg

Disposal

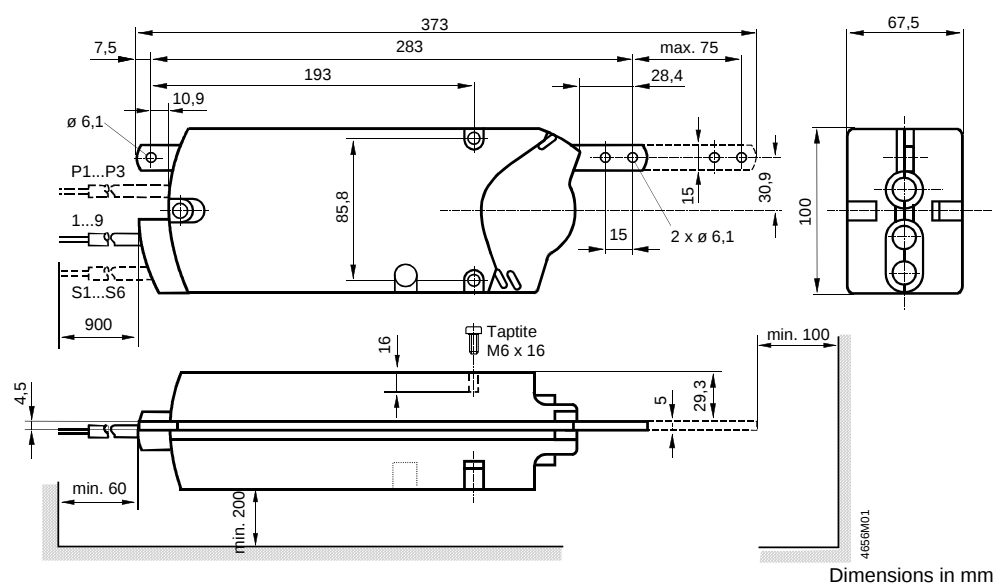
The document on technical basics and the environmental declaration provide information on environmental compatibility and disposal of this device.



Cable labeling

Pin	Cable					Meaning
	Code	Number	Color	Abbreviation		
Actuators 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, inward travel	
	Y2	7	orange	OG	Position signal AC 0 V, outward travel	
	Y	8	grey	GY	Position signal DC 0...10 V, 0...35 V	
	U	9	pink	PK	Position indication DC 0...10 V	
Actuators AC 230 V	N	4	blue	BU	Neutral conductor	
	Y1	6	black	BK	Position signal AC 230 V, inward travel	
	Y2	7	white	WH	Position signal AC 230 V, outward 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