



OpenAir™

Air damper actuators

Rotary version, AC 24 V / AC 230 V

GBB...1
GIB...1

Electronic motor driven actuators for three-position and modulating control, nominal torque 25 Nm (GBB) or 35 Nm (GIB), self-centering shaft adapter, 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 Z4626en for a detailed description as well as information on safety, engineering notes, mounting and commissioning.

Use

- For damper areas up to 4 m² (GBB) or 6 m² (GIB), friction-dependent
- Suitable for modulating controllers (DC 0...10 V) or three-position controllers (e.g. for outside air dampers).

- For dampers having two actuators on the same damper shaft (tandem-mounted actuators or powerpack).

Type summary

GBB.../GIB...	131.1E	135.1E	136.1E	331.1E	335.1E	336.1E	161.1E	163.1E	164.1E	166.1E
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 characteristic function U_0 , ΔU								X	X	
Position indicator $U = DC\ 0...10\ V$							X	X	X	X
Feedback potentiometer 1 k Ω		X			X					
Auxiliary switches (two)		X	X		X	X			X	X
Rotary direction switch							X	X	X	X
Powerpack (two actuators, tandem-mounted)	X	X	X	X	X	X	X	X	X	X

Functions

Type	GBB.3..1 / GIB.3..1	GBB/GIB16..1
Control type	Three-position control	Modulating control
Positioning signal with adjustable characteristic function		DC 0...35 V at Offset $U_0 = 0...5\ V$ and Span $\Delta U = 2...30\ V$
Rotary direction	Clockwise or counter-clockwise direction depends... ...the type of control. With no power applied, the actuator remains in the respective posi- tion.	
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: Output voltage $U = DC\ 0...10\ V$ is generated propor- tional to the rotary angle. U depends on the rotary 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 5° within 0° to 90°.	
Powerpack	Mounting two of the same actuator types on the same damper shaft results in a double torque (with accessories ASK73.1).	Mounting two of the same actuator types on the same damper shaft results in a double torque (with accesso- ries ASK73.2).
Rotary angle limitation	The rotary angle of the shaft adapter can be limited mechanically at increments of 5°.	

Ordering

Note

Potentiometer **cannot be added in the field**. For this reason, order the type that in-
cludes the required options.

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., rotary/linear sets, auxiliary switches (1 or 2 switches) and weather protection cover; see data sheet **N4699**.

Technical data

! AC 24 V supply (SELV/PELV)	Operating voltage / Frequency		AC 24 V ± 20 % / 50/60 Hz
	Power consumption	GBB/GIB13..1 Running	7 VA, 7 W
		GBB/GIB16..1 Running	8 VA, 8 W
! AC 230 V supply		GBB/GIB16..1 Holding	1.1 W
	Operating voltage / Frequency		AC 230 V ± 10 % / 50/60 Hz
	Power consumption	GBB/GIB33..1	5 VA, 5 W
Function data	Nominal torque		25 Nm GBB
			35 Nm GIB
	Maximum torque (blocked)		50 Nm GBB
			75 Nm GIB
	Nominal rotary angle / Max. rotary angle		90° / max. 95° ± 2°
	Runtime for 90° rotary angle		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
	Input voltage Y (wires 8-2)		DC 0...35 V
	Non-adjustable characteristic function		DC 0...10 V
Positioning signal for GBB/GIB16..1	Adjustable characteristic function	Offset U ₀	DC 0...5 V
		Span ΔU	DC 2...30 V
	Output voltage U (wires 9-2)		DC 0...10 V
	Max. output current		DC ± 1 mA
Characteristic functions for GBB/GIB161.1, 166.1 for GBB/GIB163.1, 164.1	Change of resistance (wires P1-P2)		0...1000 Ω
	Load		< 1 W
Position indicator for GBB/GIB16...1	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		5°...90°
	Setting increments		5°
Feedback potentiometer for GBB/GIB135.1, 335.1	Cross-section		0.75 mm ²
	Standard length		0.9 m
! Auxiliary switches for GBB/GIB..4.1/..5.1/..6.1	Degree of protection as per EN 60 529 (note mounting instructions)		IP 54
	Insulation class		EN 60 730
Connection cables	AC 24 V, feedback potentiometer		III
	AC 230 V, auxiliary switch		II
Degree of protection of housing	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.
Protection class	Product safety: Automatic electrical controls for household and similar use		EN 60 730-2-14 (Type 1)
	Electromagnetic compatibility		For residential, commercial and industrial environments
	(Application)		GBB...1: GIB...1:
	EU Conformity (CE)		A5W00004366 ¹⁾ A5W00004368 ¹⁾
Environmental conditions			GBB...1: GIB...1:
	RCM Conformity		A5W00004367 ¹⁾ A5W00004369 ¹⁾
	Product environmental declaration ²⁾		CE1E4626en ¹⁾
	Actuator W x H x D (see "Dimensions")		100 x 300 x 67.5 mm
Norms and directives	Damper shaft:	round	8...25.6 mm
		Square	6...18 mm
	Min. shaft length		20 mm
Dimensions			
Weight	Without packaging		2 kg

¹⁾ The documents can be downloaded from <http://siemens.com/bt/download>

²⁾ The product environmental declaration contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

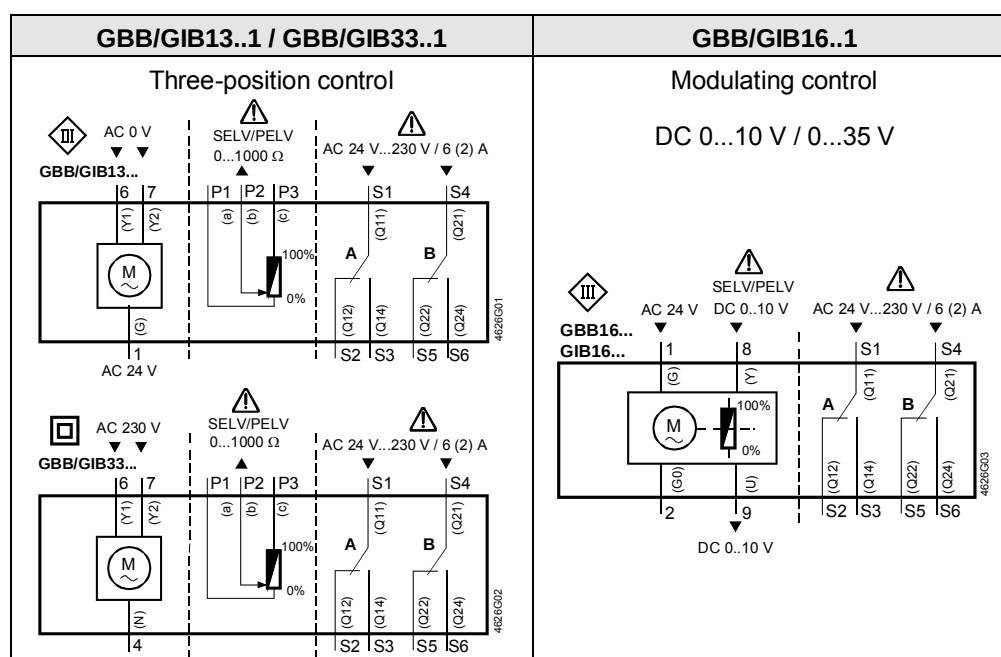
Disposal



The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

Internal diagrams



Cable labeling

Pin	Cable					Meaning
	Code	No.	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, 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 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 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)	



Issued by
Siemens Switzerland Ltd
Building Technologies Division
International Headquarters
Gubelstrasse 22
6301 Zug
Switzerland
Tel. +41 41-724 24 24

www.siemens.com/buildingtechnologies

© Siemens Switzerland Ltd, 2005

Technical specifications and availability subject to change without notice.