SIEMENS 4606



OpenAir™

Residential Air damper actuators

GSD...6 GQD...6

Rotary version, AC/DC 24 V and AC 230 V

GSD...6

- Electric motor driven actuators for open-close control (2-wire, SPDT)
- 2 Nm nominal torque
- AC/DC 24 V or AC 230 V rated voltage
- Pre-wired with 0.9 m cable
- Version with RJ12 jack

GQD...6

- Electric motor driven actuators for 2-position control
- 2 Nm nominal torque
- Spring return
- AC/DC 24 V or AC 230 V rated voltage
- Pre-wired with 0.9 m cable

Use

- For damper areas up to 0.3 m² or barrel dampers up to 12", friction dependent.
- For directly driven zone dampers used to control air flow in ducts.

Type Summary

Non-spring return rotary air damper actuators

Туре	Operating voltage	Control signal	Cable length	Coupling
GSD141.6A	AC/DC 24 V	Open-close *	0.9 m	Ø8mm
GSD141.6K	AC/DC 24 V	Open-close *	RJ12 jack	Ø8mm
GSD341.6A	AC 230 V	Open-close *	0.9 m	Ø 8 mm

^{* 2-}wire, SPDT: single pole - double-throw

Spring return - rotary air damper actuators

Туре	Type Operating voltage		Cable length	Coupling
GQD121.6A	AC/DC 24 V	2-position	0.9 m	Ø 8 mm
GQD321.6A	AC 230 V	2-position	0.9 m	Ø 8 mm

Functions

Туре	GSD141.6 GSD341.6A	GQD121.6A GQD321.6A
Control type	Open-close *	2-position
Rotary direction	Clockwise or counter-clockwise movement depends on the wiring of the actuator.	
Spring return		On power failure or when the operating voltage is switched off, the spring returns the actuator to its mechanical zero.

Technical Data

Power supply	Operating voltage A	AC 24 V ± 20 % ; 50 / 60 Hz		
AC/DC 24 V	Operating voltage D		DC 24 V ± 15 %	
	Safety extra-low (SE			
		Protection by extra-low voltage (PELV) as per		
	Requirements of ext			
	transformer (100 %	EN 61 558		
	Fuse for incoming supply line (fast)		2 A	
	Power consumption			
	- GSD141.6:	(running)	2 VA / 1.5 W	
		(holding)	1 VA / 0.5 W	
	GQD121.6A:	(running)	6.5 VA / 4.5 W	
		(holding)	4 VA / 2.5 W	
Power supply	Operating voltage / Frequency		AC 230 V ± 15 %; 50 / 60 Hz	
AC 230 V	Fuse for incoming supply line (fast)		2 A	
	Power consumption			
	GSD341.6A:	(running)	12 VA / 2 W	
		(holding)	12 VA / 2 W	
	GQD321.6A:	(running)	10 VA / 4.5 W	
		(holding)	7 VA / 3 W	
-unction data	Nominal torque		2 Nm	
	Maximum torque		6 Nm	
	Nominal rotational a	ngle	90°	
	Maximum rotational	angle		
	(mechanically limited	d)	95° ± 2°	

	Runtime for nominal rotational angle 90 °	30 s	
	Closing time with spring return		
	(on power failure) 15 s		
	Duty cycle	100 %	
	Direction of rotation	Clockwise / Cour	nter-clockwise
	Mechanical life	25 000 cycles	
Connection cables	Cable length	0.9 m	
	Cross-section	0.75 mm ²	
Housing protection	Degree of protection as per EN 60 529	IP40	
Protection class	Insulation class	EN 60 730	_
	– AC 230 V		
	- AC/DC 24 V		
Environmental conditions	Operation	IEC 721-3-3	_
	 Climatic conditions 	Class 3K5	
	 Mounting location 	interior, weather-	protected
	 Temperature extended 	-32+55 °C	•
	Humidity (non-condensing)	< r.H. 95 %	
	Transport	IEC 721-3-2	
	Climatic conditions	Class 2K3	
	Temperature extended	-32+70 °C	
	Humidity (non-condensing)	< 95 % R.H.	
	• •	IEC 721-3-1	
	Storage		
	- Climatic conditions	Class 1K3	
	Temperature extended	-32+50 °C	
	- Humidity (non-condensing)	< 95 % R.H.	
	Mechanical conditions	Class 2M2	
Standards	Product Safety		
	Automatic electrical controls for household		
	and similar use (type 1)	IEC/EN 60 730-2	
	Electromagnetic compatibility (Application)	For residential, commercial and industrial environments	
		GSD6	GQD6
	EU Conformity (CE)	A5W00004362 1)	A5W00004364 1)
		GSD6	GQD6
	RCM Conformity		A5W00004365 ¹⁾
	Product environmental declaration ²⁾		4604E 1)
Dimensions	Actuator		
2	$W \times H \times D$ (see section "Dimension")	70 X 121.4 X 62.	5
	Damper shaft	70 / 121.4 / 02.	<u> </u>
	- Round	8 mm	
	Min. length	15 mm	
	Max. shaft hardness	300 HV	
		JUU 11V	
Weight	Without packaging		
	- GSD141.6A	0.43 kg	
	- GSD141.6K	0.36 kg	
	- GSD341.6A	0.44 kg	
	– GQD121.6A	0.47 kg	
	- GQD321.6A	0.48 kg	
	1) The documents can be downloaded from http://siemens		

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).

Mechanical design

Basic components

Housing Gear train Fiberglass reinforced plastic Maintenance-free, low-noise

Engineering notes

STOP

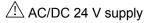
This section explains general and system-specific regulations for mains and operating voltages. It also contains important information regarding your own safety and that for your plant.

Intended use

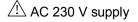
Use these actuators as described in the basic system documentation for the applied control systems. Additionally, take account of all actuator-specific features and conditions as described in the brief description on the front page of this data sheet (bold print) and in the sections "Use", "Engineering Notes" and "Technical Data".



The sections flagged with the warning symbol illustrated in the left margin contain safety-related requirements and restrictions. It is important that these are adhered in order to prevent physical injury and equipment damage.



Operate the actuators only on safety extra-low voltage (SELV) or protective extralow voltage (PELV) as per HD 384.



The actuators are double-insulated and there is no connection for the protective ground.

CAUTION

Do not open the actuator!

- The actuators are maintenance-free.
- Any repair work must be conducted by the manufacturer only.
- Opening the actuator will void the warranty.
- Spring return actuators contain pre-tensioned springs. Only trained personnel may open such actuators (by means of special tools).

Parallel connection

Up to 10 actuators of the same type can be electrically wired in parallel. The admissible cable length and cable cross-section must be observed.

Sizing transformers for AC 24 V

Use safety insulating transformers as per EN 61 558 with double insulation, designed for 100 % duty to supply SELV or PELV circuits.

Observe all local safety rules and regulations pertaining to the sizing and protection of transformers.

Determine the transformer power consumption by adding up the power consumption in VA for all actuators used.

Wiring and commissioning Refer to the sections "Commissioning Notes" and "Wiring Diagrams" in this data sheet as well as to the HVAC job drawings.

Mounting notes

Mounting instructions

All information and steps to properly prepare and mount the actuator are listed in the mounting instructions supplied with the actuator.

Mounting position

Mount the actuator in a position which ensures easy access to the cables and to the shaft adapter. Refer to the "Dimensions" section.

Damper shafts

Information on minimum length and diameter for the damper shaft is available in the "Technical Data" section.





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.

Commissioning notes

References For commissioning, the following reference documentation must be available:

- · This data sheet
- Job diagram

Ambient conditions

Check to ensure that all permissible values, as contained in the section "Technical Data", have been observed.

Mechanical check

- Check for proper mounting and ensure that all mechanical settings correspond to the plant-specific requirements. Additionally, ensure that the dampers are tightly closed when in the closed position.
- · Check the direction of rotation.
- Fasten the actuator securely to avoid twisting and blocking of the actuator.

Electrical check

- Check to ensure that the cables are connected in accordance with the plant wiring diagram (see "Wiring Diagrams").
- The operating voltage AC/DC 24 V (SELV/PELV) or AC 230 V must be within the tolerance values.

Functional check

GSD141.6A Power supply AC/DC 24 V wire red (1)

Control signal AC/DC 0 V

Wire violet (6) ON: actuator turns clockwise

Wire orange (7) ON: actuator turns counter-clockwise

GSD141.6K Power supply AC/DC 24 V wires green/red (3/4)

Control signal AC/DC 0 V

Wires black/white (1/2) ON: actuator turns clockwise

• Wires blue/yellow (5/6) ON: actuator turns counter-clockwise

GSD341.6A Power supply AC 0 V wire blue (4)

Control signal AC 230 V

Wire black (6) ON: actuator turns clockwise

Wire white (7) ON: actuator turns counter-clockwise

GQD121.6A Power supply AC/DC 24 V wires red (1) and black (2)

Power ON: actuator turns clockwise

Power OFF: actuator turns mechanically counter-clockwise

(by spring)

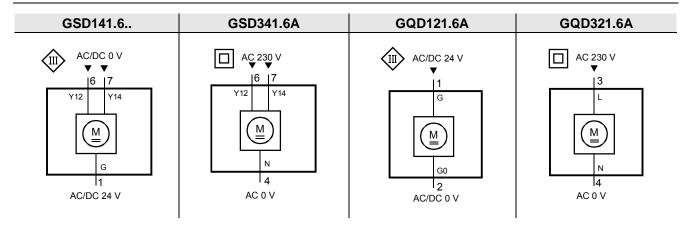
GQD321.6A Power supply AC 230 V wires brown (3) and blue (4)

Power ON: actuator turns clockwise

Power OFF: actuator turns mechanically counter-clockwise

(by spring)

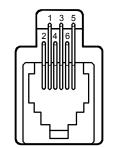
Wiring diagrams

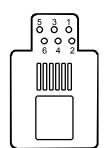


Cable labeling

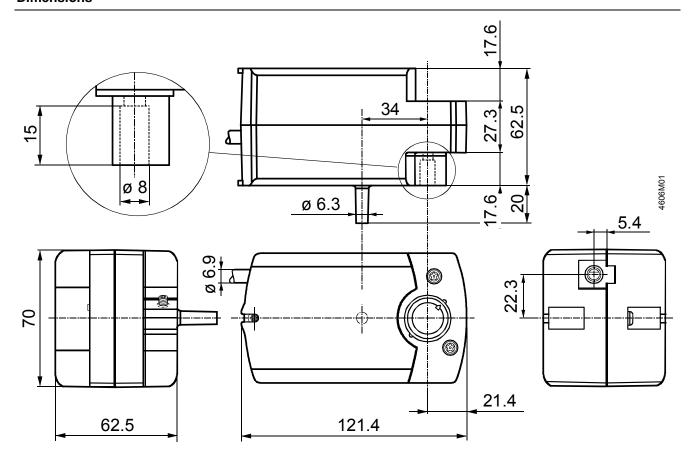
Dire	Cable				Magning
Pin	Code	No.	Color	Abbreviation	Meaning
GSD141.6	G	1	red	RD	System potential AC/DC 24 V
AC/DC 24 V	Y12	6	violet	VT	Pos. signal clockwise AC/DC 0 V
	Y14	7	orange	OG	Pos. signal counter-clockwise AC/DC 0 V
CCD244 6A	N	4	blue	BU	Neutral
GSD341.6A AC 230 V	Y12	6	black	BK	Positioning signal clockwise AC 230 V
AC 230 V	Y14	7	white	WH	Positioning signal counter-clockwise AC 230 V
GQD121.6A	G	1	red	RD	System potential AC/DC 24 V
AC/DC 24 V	G0	2	black	BK	System neutral
GQD321.6A	L	3	brown	BN	Line AC 230 V
AC 230 V	N	4	blue	BU	Neutral

RJ12 jack GSD141.6K





- 1: Black
- 2: White 3: Green
- 4: Red 5: Blue
- 6: Yellow



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