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

Type	Operating voltage	Control signal	Cable length	Coupling
GSD141.6A	AC/DC 24 V	Open-close [2]	0.9 m	Ø 8 mm
GSD141.6K [1]	AC/DC 24 V	Open-close [2]	RJ12 jack	Ø 8 mm
GSD341.6A [1]	AC 230 V	Open-close [2]	0.9 m	Ø 8 mm

Spring return - rotary air damper actuators

Type	Operating voltage	Control signal	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

[1] While stocks last
[2] 2-wire, SPDT: single pole - double-throw

Functions

Type	**GSD141.6.. [1] GSD341.6A [1]**	**GQD121.6A GQD321.6A**
Control type	Open-close [2]	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.

[1] While stocks last
[2] 2-wire, SPDT: single pole - double-throw

Technical Data

⚠ Power supply AC/DC 24 V	Operating voltage AC / Frequency		AC 24 V ± 20 % ; 50 / 60 Hz
	Operating voltage DC		DC 24 V ± 15 %
	Safety extra-low (SELV) or Protection by extra-low voltage (PELV) as per		HD 384
	Requirements of external safety isolating transformer (100 % duty cycle)		EN 61 558
	Fuse for incoming supply line (fast)		2 A
	Power consumption		
	– GSD141.6 [3]	(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 AC 230 V	Operating voltage / Frequency		AC 230 V ± 15 %; 50 / 60 Hz
	Fuse for incoming supply line (fast)		2 A
	Power consumption		
	– GSD341.6A [3]	(running)	12 VA / 2 W
		(holding)	12 VA / 2 W
	– GQD321.6A	(running)	10 VA / 4.5 W
		(holding)	7 VA / 3 W
Function data	Nominal torque		2 Nm
	Maximum torque		6 Nm
	Nominal rotational angle		90°
	Maximum rotational angle (mechanically limited)		95° ± 2°
	Runtime for nominal rotational angle 90 º		30 s
	Closing time with spring return (on power failure)		15 s
	Duty cycle		100 %
	Direction of rotation		Clockwise / Counter-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.
	Storage		IEC 721-3-1
	– 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 60 730-2-14	
	Electromagnetic compatibility (Application)	For residential, commercial and industrial environments	
		GSD..6	GQD..6
	EU Conformity (CE)	A5W00004362 [1]	A5W00004364 [1]
		GSD..6	GQD..6
	RCM Conformity	A5W00004363 [1]	A5W00004365 [1]
	Product environmental declaration [2]	CM2E4604E [1]	
Dimensions	Actuator		
	W × H × D (see section “Dimension”)	70 X 121.4 X 62.5	
	Damper shaft		
	– Round	8 mm	
	Min. length	15 mm	
	Max. shaft hardness	300 HV	
Weight	Without packaging		
	– GSD141.6A	0.43 kg	
	– GSD141.6K [3]	0.36 kg	
	– GSD341.6A [3]	0.44 kg	
	– GQD121.6A	0.47 kg	
	– GQD321.6A	0.48 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).

[3] While stocks last

Mechanical design

Basic components

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

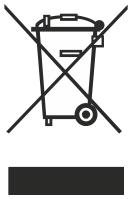
Engineering notes

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.
⚠ AC/DC 24 V supply	Operate the actuators only on safety extra-low voltage (SELV) or protective extra-low voltage (PELV) as per HD 384.
⚠ AC 230 V supply	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.

Disposal



The device is considered electrical and electronic equipment for disposal in terms of the applicable European Directive 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 [1)]

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 [1)]

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

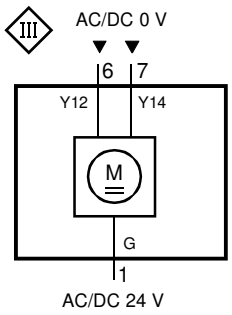
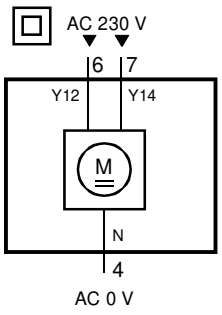
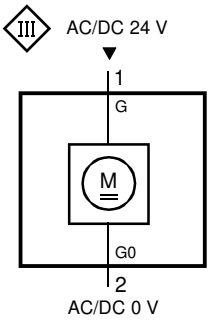
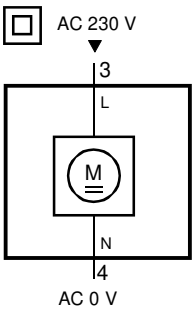
Power supply AC/DC 24 V wires red (1) and black (2)
- Power ON: actuator turns clockwise
- Power OFF: actuator turns mechanically counter-clockwise (by spring)

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)

[1)] While stocks last

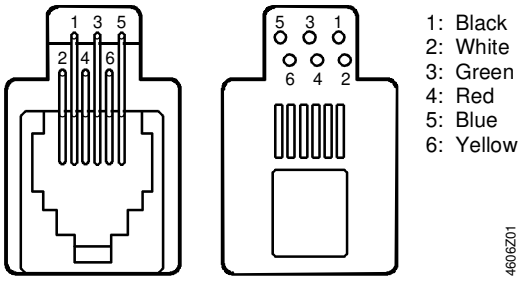
Wiring diagrams

GSD141.6.. [1]	GSD341.6A [1]	GQD121.6A	GQD321.6A
			

Cable labeling

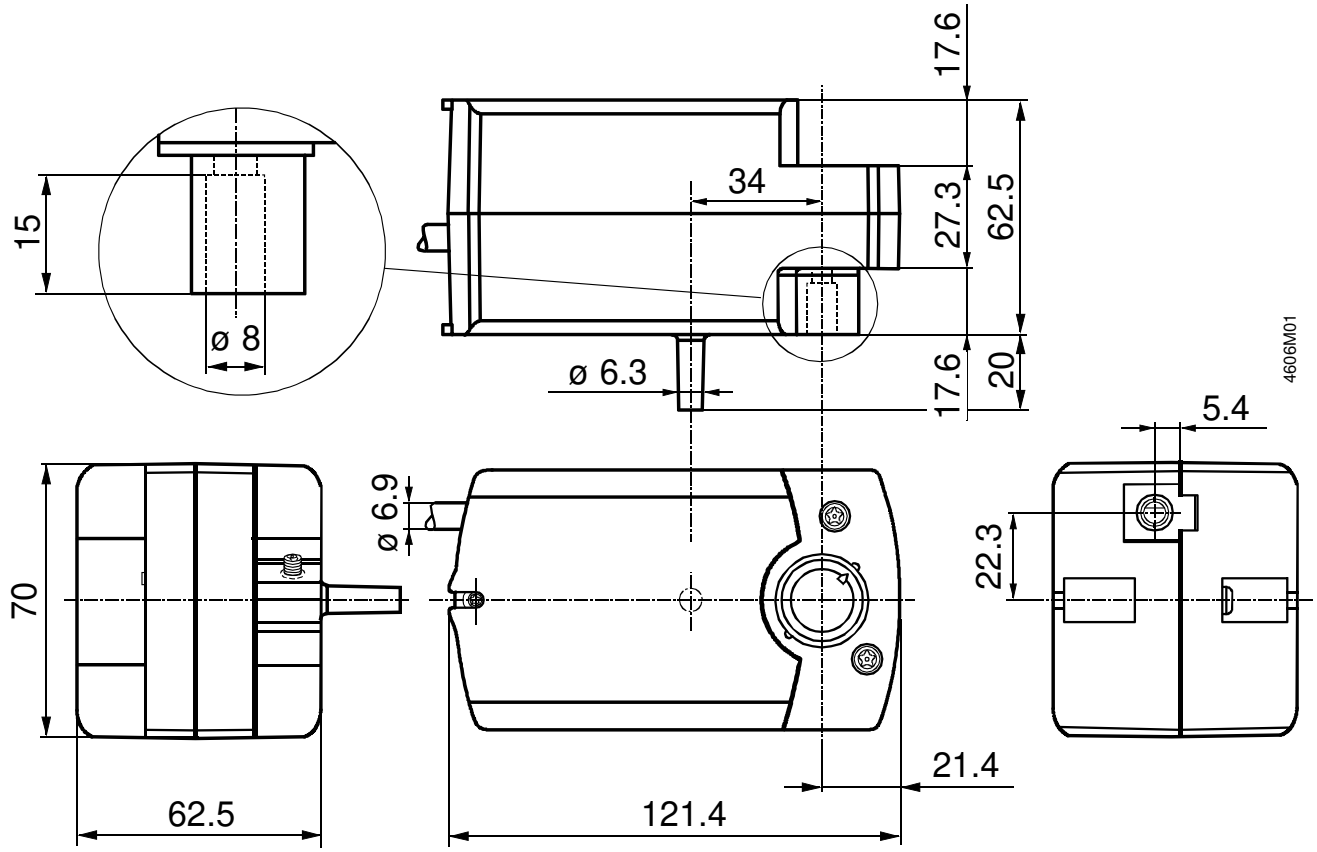
Pin	Cable				Meaning
	Code	No.	Color	Abbreviation	
GSD141.6.. AC/DC 24 V	G	1	red	RD	System potential AC/DC 24 V
	Y12	6	violet	VT	Pos. signal clockwise AC/DC 0 V
	Y14	7	orange	OG	Pos. signal counter-clockwise AC/DC 0 V
GSD341.6A AC 230 V	N	4	blue	BU	Neutral
	Y12	6	black	BK	Positioning signal clockwise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

RJ12 jack GSD141.6K



[1] While stocks last

Dimensions



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