



SQK33.00



## Electromotoric Actuators SQK33.00

for valves with 90° angle of rotation

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- **SQK33.00** operating voltage AC 230 V
- **3-position control signal**
- **Nominal angle of rotation 90°**
- **Auxiliary switch and potentiometer for extra functions**
- **Manual adjuster and position indicator**
- **Reversible electric motor**

### Use



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For use in heating, ventilation and air conditioning systems to operate type VKF41... butterfly valves and type VBF21..., VBG31..., VBI31..., VCI31... 3-port and 4-port slipper valves as well as valves from other manufacturers (refer to «Equipment combinations»).

## Type summary

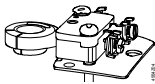
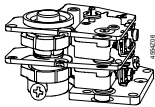
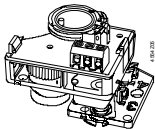
Type	Operating voltage	Positioning signal	Positioning time for 90° at 50 Hz	Torque
<b>SQK33.00</b>	AC 230 V	3-position	125 s	5 Nm

## Mounting kits

Type	For valves	Actuators
<b>ASK32</b> 	Slipper valves VBF21... (DN 40...50), VBG31..., VBI31..., VCI31...	SQK33.00
<b>ASK33</b> 	Butterfly valves VKF41... (DN 40...200)	SQK33.00 <sup>1)</sup>

<sup>1)</sup> for VKF41.40 only

## Accessories

Type	Description	For actuators	Mounting position
<b>ASC9.5</b> 	Auxiliary switch	SQK33.00 <sup>1)</sup>	1 x ASC9.5 or 1 x ASC9.4 or 1 x ASZ7.4  (only one accessory at a time can be mounted)
<b>ASC9.4</b> 	Double auxiliary switch		
<b>ASZ7.4</b> 	Auxiliary switch and potentiometer 1000 Ω		

<sup>1)</sup> In SQK33.00 only the ASC9.5 auxiliary switch can be installed.

## Order

The actuator, slipper valve, butterfly valve, mounting kit ASK.. and any accessories must be ordered separately.

When ordering please specify the quantity, product name and type code.

### Example

**1 actuator SQK33.00**

**1 mounting kit ASK32**

**1 auxiliary switch with potentiometer ASZ7.4**

## Delivery

The actuator, slipper valve or butterfly valve, mounting kit ASK.. and accessories are packed separately and delivered as individual items.

## Equipment combinations

	Electromotoric actuator			
	Valves	SQK33.00	Mounting kit	Data sheet
3-port slipper valve	VBF21...	DN 40...50	ASK32	N4241
	VBI31...	DN 20...40 (¾...1½")	ASK32	N4232
	VBG31..			N4233
4-port slipper valve	VCI31...	DN 20...40 (¾...1½")	ASK32	N4252
Butterfly valves	VKF41...	DN 40	ASK33	N4131

## Function / mechanical design

These electromotoric actuators require no maintenance. They have a reversible synchronous motor and reduction gears with self-lubricating sinter bearings.

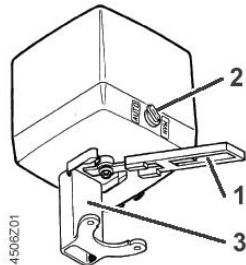
The actuator is driven by a 3-position signal from the controller and generates a rotary motion which is transferred via a driver to the butterfly valve, the 3-port or 4-port slipper valve.

The actuators are supplied with a 90° angle of rotation suitable for use with Siemens butterfly and slipper valves. During automatic operation, rotation is limited by two built-in end-switches. For non-Siemens valves, the angle of rotation in the range 70° to 180° can be selected by repositioning the switching cams.

The direction of operation of the actuator can be reversed (refer to «Commissioning»).

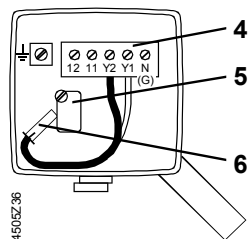
Direction of rotation of the actuator on delivery:

- Voltage at Y1 = Clockwise rotation
- Voltage at Y2 = Anti-clockwise rotation
- No voltage = No rotation; actuator fixed in relevant position



- 1 Manual lever, rotation is limited by built-in stop
- 2 Rotary «AUTO» / «MAN» selector
- 3 Yoke (e.g. mounting kit ASK31)

When the selector is set to «MAN», the valve can be operated with a manual lever.



- 4 Terminal strip
- 5 Double end switch (always factory-installed)
- 6 Plug for reversing direction of rotation

## Engineering notes

### Electrical installation

The actuators must be electrically connected in accordance with local regulations and with the connection diagrams.



**Regulations and requirements to ensure the safety of people and property must be observed at all times.**

If additional functions are to be controlled by the actuator, the ASC9... (auxiliary switch) or ASZ7.5 (auxiliary switch / potentiometer) must be fitted. The relevant switching point(s) and zero-ohm position must be noted in the plant documentation

### Mounting notes

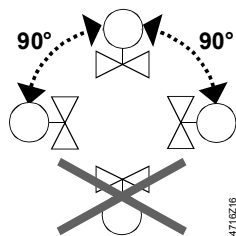
Overview of  
Mounting Instructions

Type	Mounting Instructions	
<b>ASK32</b>	M4290.2	4 319 5597 0
<b>ASK33</b>	M4111.1	4 319 5595 0

Type	Mounting Instructions	
<b>ASC9.5</b>	G4506.7	4 319 5557 0
<b>ASZ7.4</b>	G4506.6	4 319 5538 0

The valve and actuator can be assembled straightforwardly on site. There is no need for special tools.

### Orientation



### Commissioning notes

When commissioning the complete motorized valve consisting of actuator, mounting kit and valve (butterfly or slipper valve), always check the wiring and test the functions. This also applies to any additional components fitted, e.g. auxiliary switch or potentiometer.

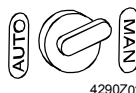
Note

Siemens slipper valves up to DN 50 can be commissioned without an actuator being fitted. In this case, the flow rate must be adjusted manually with the standard manual adjuster fitted to the valve.

### Mode of operation



«AUTO» = automatic operation



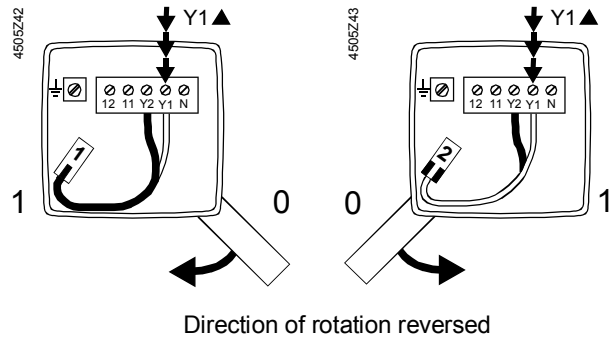
«MAN» = manual operation

### Direction of rotation

The actuators are factory-set to rotate in clockwise direction for opening (as seen from the cover).

## Reversing the direction of rotation

The direction of rotation can be reversed by repositioning a connector located under the cover. The wiring for the OPEN and CLOSE control signal is not affected



## Setting the angle of rotation

The angle of rotation is factory-set to 90°. However, the angle can be changed to between 70° and 180°. This may be necessary when using non-Siemens valves.

## Control

Every actuator must be driven by a dedicated controller (refer to «Connection diagrams»).

## Maintenance

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### Caution

The actuators and butterfly valves require no maintenance.

Before performing any service work on the valve or actuator:

- Switch off the pump and power supply
  - Close the main shut-off valves in the pipework
  - Release pressure in the pipes and allow them to cool down completely
- If necessary, disconnect electrical connections from terminals.

The butterfly or slipper valve must be re-commissioned only with the manual adjuster or the actuator correctly assembled.

### 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.

## Warranty

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Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

## Technical data

		SQK33.00	
Power supply	Operating voltage	AC 230 V, $\pm 15\%$	
	Frequency	50 / 60 Hz	
	Power consumption <sup>1)</sup>	3 VA	
	External supply line protection	Slow-blow fuse max. 10 A or Circuit breaker max. 13 A Characteristic B, C, D according to EN 60898	
Control	Positioning signal	3-position	
	Parallel operation	parallel operation of several actuators not possible	
Operating data	Positioning time for 90° at 50 Hz at 60 Hz	125 s 105 s	
	Angle of rotation adjustable	90° $\pm$ 2° (factory setting)	
		70°...180°	
	Torque <sup>1)</sup>	5 Nm	
	End switch	Switching capacity	AC 250 V, 6 A resistive, 2 A inductive
		Switching differential	approx. 1°
Norms and directives	Medium temperature	Permissible temperature of medium in the assembled valve: 120°C	
	Electromagnetic compatibility (Application)	For residential, commercial and industrial environments	
	Product standard	EN60730-x Automatic electrical controls for household and similar use	
	EU Conformity (CE)	A5W00004457 <sup>2)</sup>	
	RCM Conformity	A5W00006059 <sup>2)</sup>	
	EAC Conformity	Eurasian conformity for all SQK..	
	Housing protection standard	IP 44 to IEC 60529 / DIN 40050	
	Protection class to EN 60730	Class II	
	Environmental compatibility	The product environmental declaration CE1E4506en01 <sup>3)</sup> contains data on RoHS compliance, materials composition, packaging, environmental benefit, disposal	
	Dimensions / weight	Dimensions	see «Dimensions»
Cable glands		4 x $\varnothing$ 20.5 mm (for M20)	
Weight		1.25 kg	
Materials	Housing base, yoke	die-cast aluminium	
	Cover	plastic	

<sup>1)</sup> These values apply at nominal voltage, at an ambient temperature of 20 °C and at the specified nominal running time

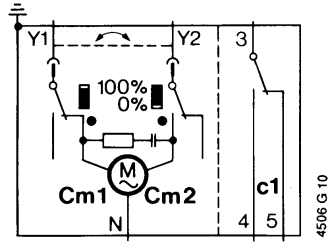
<sup>2)</sup> The documents can be downloaded from <http://siemens.com/bt/download>.

Accessories for SQK33.00			Weight
• Double auxiliary switch ASC9.5 / ASC9.4	Switching capacity	AC 250 V, 10 A resistive, 3 A inductive	ASC9.4 85 g
	Switching differential	approx. 1°	ASC9.5 30 g
• Auxiliary switch with potentiometer ASZ7.4	Switching capacity	AC 250 V, 10 A resistive, 3 A inductive	60 g
	Switching differential	approx. 1°	
	Change in resistance	0 ...1000 $\Omega$ corresponding to 0...90 °	

General ambient conditions	Operation	Transport	Storage
	EN 60721-3-3	EN 60721-3-2	EN 60721-3-1
Environmental conditions	Class 3K5	Class 2K3	Class 1K3
Temperature	-15...+55 °C	-30...+65 °C	-15...+55 °C
Humidity	5...95 % r. h.	< 95 % r. h.	0...95 % r. h.

**Internal diagrams**

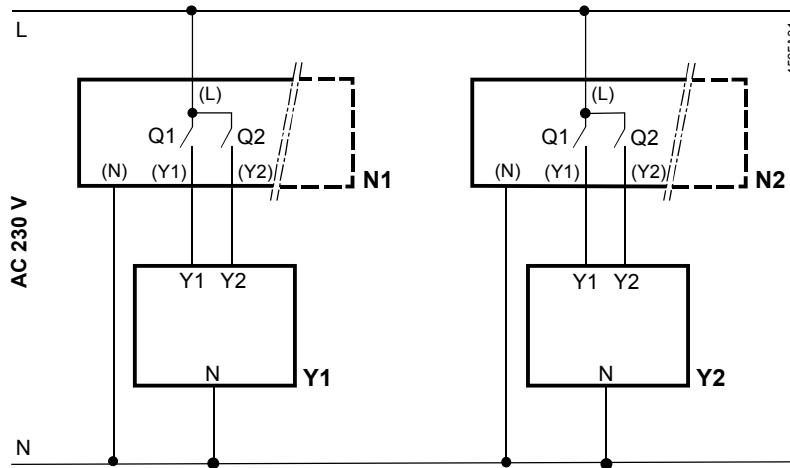
SQK33.00



- Cm1 End switch
- Cm2 End switch
- c1 1 auxiliary switch **ASC9.5**  
or
- N Neutral conductor
- Y1 Control signal OPEN
- Y2 Control signal CLOSED

**Connection diagrams**

SQK33.00

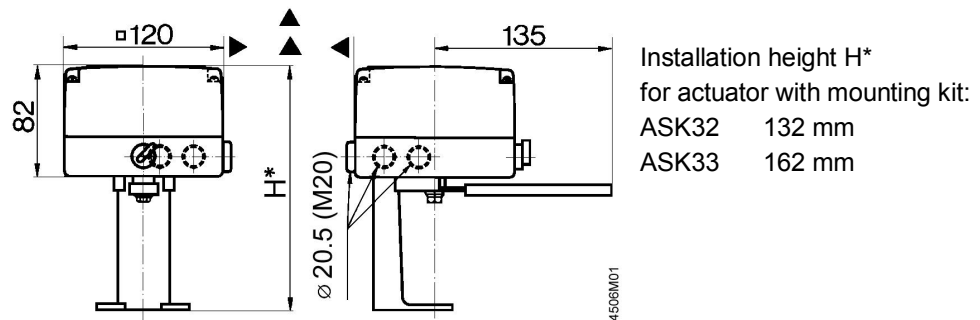


- N1, N2** Controller
- Y1, Y2** Actuator
- L** System potential AC 230 V
- N** System neutral
- Q1, Q2** Controller contacts

## Dimensions

Dimensions in mm

### SQK33.00



Overall height of valve  
and actuator

= Installation height of slipper or butterfly valve from the middle of the pipe  
 + Installation height H\* of the actuator with mounting kit  
 + Minimum clearance from ceiling or wall for mounting, connection,  
 operation, service etc.

- ▶ >100 mm
- ▶▶ >200 mm

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