



## Electrical Actuators

for valves VVP45..., VXP45..., VMP45...

**SSC31**  
**SSC81**  
**SSC61...**

- **SSC31**      operating voltage AC 230 V      3-position control signal
- **SSC81**      operating voltage AC 24 V      3-position control signal
- **SSC61**      operating voltage AC/DC 24 V      DC 0...10 V control signal
- **SSC61.5**    same as SSC61, plus electrical fail-safe function
- **Nominal force 300 N**
- **Automatic identification of valve stroke**
- **Direct mounting with coupling nut, no tools required**
- **Cable connection via screw terminals**
- **Manual override with indication of position and direction of travel**
- **Parallel connection of multiple actuators**

### Use

For operation of Siemens valves of the V...P45... range for water-side control of hot water and cooling water in heating, ventilation and air conditioning systems. In conjunction with the ASK30 mounting kit, the former Landis & Gyr valves VVG45..., VXG45... and X3i... can also be operated.

## Type summary

### Standard versions

Type reference	Rated voltage	Running time at 50 Hz	Control signal	Remarks
SSC31	AC 230 V	150 s	3-position	
SSC81	AC 24 V			
SSC61	AC/DC 24 V	30 s	DC 0...10 V	
SSC61.5				

### Accessories

Type reference	Description
ASK30	Mounting kit for use with former Landis & Gyr valves VVG45..., VXG45... and X3i...

### Ordering

When ordering, please give quantity, product name and type reference.

Example: 2 actuators SSC81

### Delivery

The actuators, valves and accessories are packed separately.

### Equipment combinations

Type reference	Type of valve	$k_{vs}$ [m <sup>3</sup> /h]	PN class	Data Sheet
VVP45...	2-port valves	0.25...25	PN16	N4845
VXP45...	3-port valves			
VMP45...	3-port valves with T-bypass	0.25...4		
VVG45... <sup>1)</sup>	2-port valves	0.63...25		Retrofitting to former L&G valves
VXG45... <sup>1)</sup>	3-port valves			
X3i... <sup>1)</sup>	3-port valves			

<sup>1)</sup> With ASK30 mounting kit

## Function / mechanical design

When the actuator is driven by a 3-position or DC 0...10 V control signal, it generates a stroke which is transmitted to the valve stem.

### 3-position control signal

SSC31 / SSC81

- Voltage at Y1: Actuator stem extends valve opens
- Voltage at Y2: Actuator stem retracts valve closes
- No voltage at Y1 or Y2: Actuator maintains the current position

### DC 0...10 V control signal

SSC61

- The valve opens / closes in proportion to the control signal at Y.
- At DC 0 V, the valve is fully closed (A → AB).
- When power supply is removed, the actuator maintains its current position.

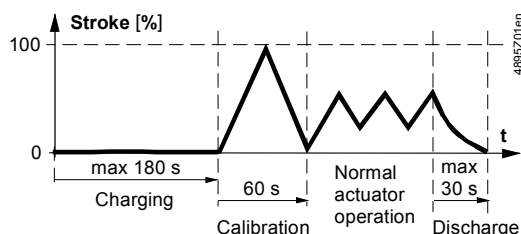
### Electrical fail-safe function

SSC61.5

When first connected to power, or after a power failure, the capacitor which stores energy for the fail-safe function will be charged. This process takes up to 180 seconds. While the capacitor is being charged, the actuator cannot respond to any Y control signals.

On completion of the charging process and self-calibration (see below), the "Open" and "Close" travel are proportional to the DC 0...10 V control signal.

In the event of a power failure of more than 5 seconds, the actuator will return mechanically to its 0 % stroke position within 30 seconds, closing the valve (A → AB).

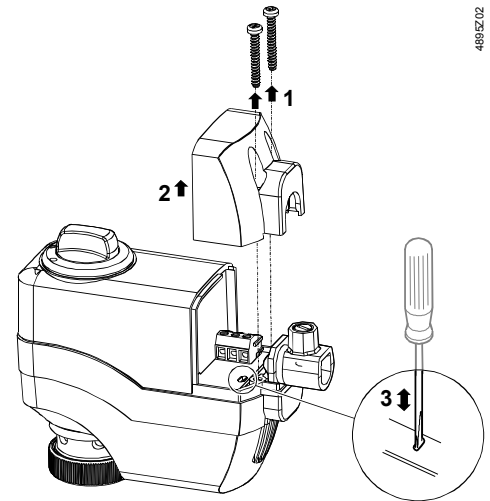


### Self-calibration SSC61 and SSC61.5

When the AC / DC 24 V supply is applied for the first time, the actuators calibrate themselves independent of the control signal. In this process, the actuator drives the valve to the mechanical end stops and stores the associated positions permanently in the form of electronic values. The positioning signal is only active on completion of this calibration process. Calibration takes about 60 seconds.  
The SSC61.5 only performs self-calibration when the charging process of 180 seconds is completed.

### Recalibration

If the calibrated actuator is used with some other valve (e.g. a replacement valve), it must be recalibrated. For that purpose, the PCB beneath the terminal cover has a slot (see illustration). To make the recalibration, use a screwdriver and connect the 2 contacts behind the slot for about 1 second.



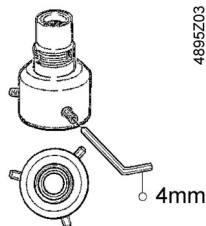
The calibration can only be made correctly if the actuator is fitted to a valve (refer to «Equipment combinations»).

### Features and benefits

- Plastic cover
- Locking-proof, maintenance-free gear train
- Manual adjustment with rotary knob
- Reduced power consumption in the holding positions
- Load-dependent switch-off in the event of overload and in stroke limit positions

### Accessories

#### Mounting kit



Type ASK30

### Notes

#### Engineering

The actuators must be electrically connected in accordance with local regulations (refer to «Connection diagrams»).



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

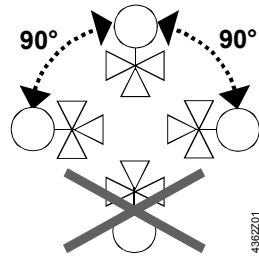
The permissible temperatures must be observed (refer to «Technical data»).

#### Mounting

Mounting Instructions 74 319 0260 0 are enclosed with each pack.

Assembly is made with the coupling nut; no tools or adjustments are required. The actuators should be installed so that they are initially in position 0 (also refer to «Manual override»).

Orientation



Commissioning

When commissioning the system, check wiring and the functions of the actuator.

**⚠ Caution**

**Before testing the functioning of the SSC..., always check to ensure that the actuator concerned is mounted on a valve (refer to «Equipment combinations»).**

Calibrating the SSC61 or SSC61.5 without a valve connected causes the actuator to lock in position 1. To recalibrate (after mounting on a valve), disconnect power and reset the stroke manually from position 1 to 0 (refer to «Recalibration»).

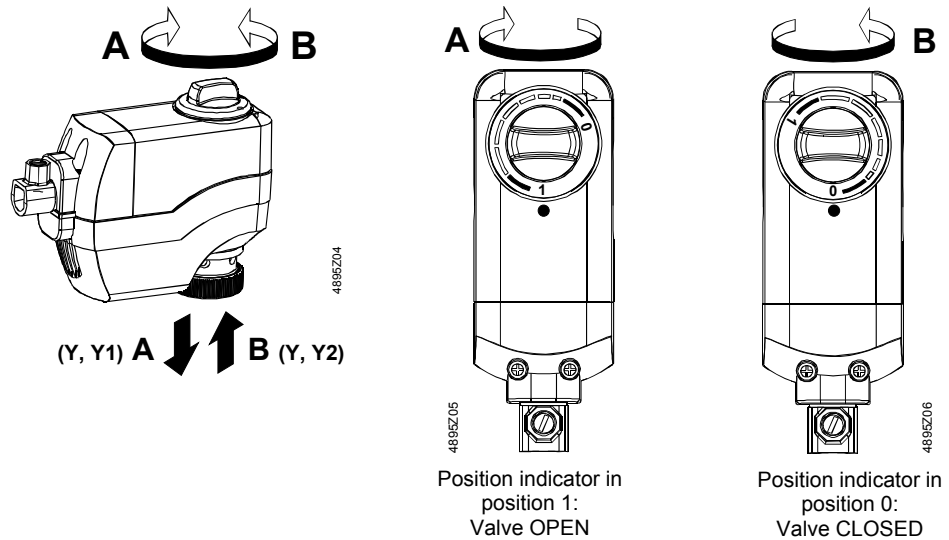
Operation

The rotary knob can be used to drive the actuator into any position between 0 and 1. If a control signal from the controller is present, this will take priority in determining the position.

Note

To retain the manually set position, unplug the connecting cable or switch off the rated voltage and the control signal. Due to the reset function, the SSC61.5 will first travel to position 0 and can then be driven manually to the required position.

Manual override



Maintenance

When servicing the actuator:

- Switch off power
- If necessary, disconnect the terminals
- The actuator must only be commissioned with a correctly mounted valve in place!

Repair

The SSC... actuators cannot be repaired. They must be replaced as a complete unit.

Disposal



The device must not be disposed of together with domestic waste. This applies in particular to the PCB.

Legislation may demand special handling of certain components, or it may be sensible from an ecological point of view.

**Current local legislation must be observed.**

## Warranty

The technical relating to specific applications are valid only in conjunction with the Siemens valves listed in this Data Sheet under «Equipment combinations».

**The use of the SSC... actuators in conjunction with third-party valves invalidates any warranty offered by Siemens Building Technologies / HVAC Products.**

## Technical data

		SSC31	SSC81	SSC61	SSC61.5
Power supply	Rated voltage	AC 230 V	AC 24 V	AC 24 V or DC 24 V	
	Voltage tolerance	± 15 %	± 20 %	± 20 %	± 25 %
	Rated frequency	50 / 60 Hz			
	Max. power consumption	6 VA	0.8 VA	2 VA	2 VA <sup>1)</sup>
	△ Fuse for incoming cable (fast)	2 A			
Control	Control signal	3-position		DC 0...10 V	
	Input impedance for DC 0...10 V	—		> 100 kOhm	
	Positioning accuracy for DC 0...10 V	—		< 2 % of nominal stroke	
	Parallel operation (number of actuators) <sup>2)</sup>	max. 10			
Functional data	Running time for 5.5 mm stroke at 50 Hz	150 s		30 s	
	Capacitor charging time	—			max. 180 s
	Fail-safe run time	—			30 s
	Nominal stroke	5.5 mm			
	Nominal force	300 N			
	Permissible temperature of medium in the connected valve	1...110 °C			
Electrical connections	Terminal block, pluggable	screw terminals for max. 3 mm <sup>2</sup>			
	Terminal block color	green	grey	red	red
	Cable strain relief	for cables 4...11 mm dia.			
Industry standards	Meets the requirements for CE marking:				
	EMC directive	89/336/EEC	Emissions	EN 50081-1	
			Immunity	EN 61000-6-2	
	Low-voltage directive	73/23/EEC		EN 60730-1	
	UL approval <sup>3)</sup>	UL873-listed			
	CUL approval <sup>3)</sup>	Certified to Canadian Standard C22.2 No. 24-93			
	Safety class to EN 60730	II	III		
	Housing protection standard	IP40 to EN 60529			
Dimensions / weight	Dimensions	refer to «Dimensions»			
	Coupling thread to valve	coupling nut G¾ inch			
	Weight	0.26 kg	0.25 kg	0.27 kg	
Housing colors	Base, rotary knob	RAL 7035, light-grey			
	Cover	RAL 5014, pigeon-blue			

<sup>1)</sup> 3 VA, when capacitor charged for automatic reset

<sup>2)</sup> Provided the controllers' output is sufficient

<sup>3)</sup> For SSC81 and SSC61... only

## General ambient conditions

	Operation	Transport	Storage
	IEC 721-3-3	IEC 721-3-2	IEC 721-3-1
Environmental conditions	class 3K3	class 2K3	class 1K3
Temperature	+5...+50 °C	-25...+70 °C	-25...+70 °C
Humidity	5...95 % r.h.	< 95 % r.h.	5...95 % r.h.

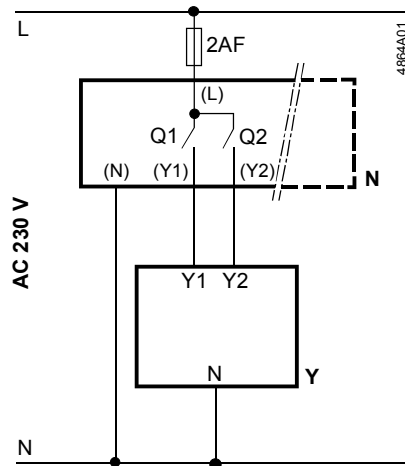
## Connection terminals

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SSC31	<table border="1"><tr><td>Y2</td><td rowspan="3">4895Z/06</td></tr><tr><td>Y1</td></tr><tr><td>N</td></tr></table>	Y2	4895Z/06	Y1	N	Control signal CLOSE (AC 230 V) Control signal OPEN (AC 230 V) Neutral
Y2	4895Z/06					
Y1						
N						
SSC81	<table border="1"><tr><td>Y2</td><td rowspan="3">4864Z/15</td></tr><tr><td>Y1</td></tr><tr><td>G</td></tr></table>	Y2	4864Z/15	Y1	G	Control signal CLOSE (AC 24 V) Control signal OPEN (AC 24 V) System potential AC 24 V
Y2	4864Z/15					
Y1						
G						
SSC61 SSC61.5	<table border="1"><tr><td>Y</td><td rowspan="3">4895Z/21</td></tr><tr><td>G</td></tr><tr><td>G0</td></tr></table>	Y	4895Z/21	G	G0	Control signal DC 0...10 V System potential AC 24 V (+ with DC 24 V) System neutral (- with DC 24 V)
Y	4895Z/21					
G						
G0						

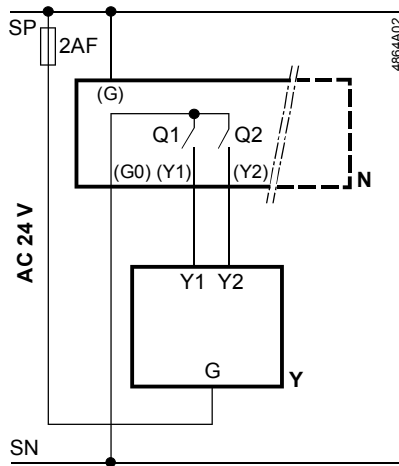
## Connection diagrams

SSC31



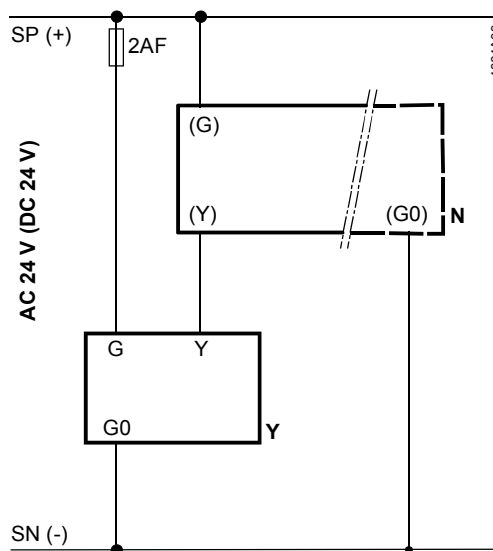
N Controller  
 Y Actuator  
 L System potential AC 230 V  
 N System neutral  
 Q1, Q2 Controller contacts

SSC81



N Controller  
 Y Actuator  
 SP System potential AC 24 V  
 SN System neutral  
 Q1, Q2 Controller contacts

SSC61  
 SSC61.5



N Controller  
 Y Actuator  
 SP System potential AC 24 V  
 SN System neutral

## Dimensions

All dimensions in mm

