SIEMENS

4895

acvatix

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, indication of position and direction of travel**
- **Parallel connection of multiple actuators**
- **Special UL-listed versions**

Use

For operation of Siemens valves of the VVP45..., VXP45... and VMP45... 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.

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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				With fail-safe function

Special UL-listed versions

Type reference	Rated voltage	Running time at 50 Hz	Control signal	Remarks
SSC81U	AC 24 V	150 s	3-position	
SSC81.5U		125 s		With fail-safe function
SSC61U	AC/DC 24 V	30 s	DC 0...10 V	
SSC61.5U				With fail-safe function

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^3/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...[1)]	2-port valves	0.63...25		Retrofitting to former L&G valves
VXG45...[1)]	3-port valves			
X3i...[1)]	3-port valves	0.7...14		

[1)] 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 actuators
SSC31 / SSC81

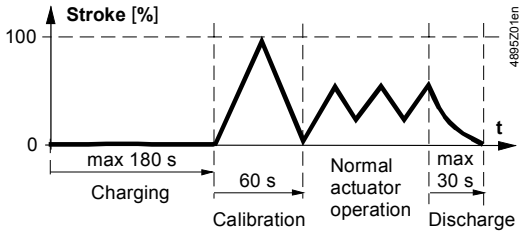
- Voltage at Y1: Actuator stem extends and valve opens
- Voltage at Y2: Actuator stem retracts and valve closes
- No voltage at Y1 or Y2: Actuator maintains the current position

DC 0...10 V control
SSC61

- The valve opens / closes in proportion to the control signal at Y
- At DC 0 V, the valve is fully closed (A → AB)
- In the event of a power failure, 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.



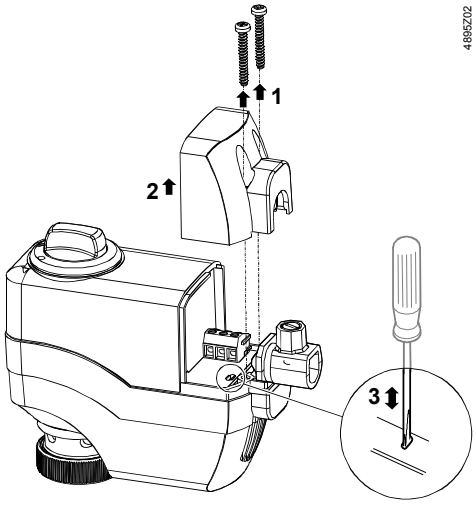
On completion of the charging process and auto calibration (see below), the "Open" and "Close" travel are proportional to the DC 0…10 V control signal.
In the event of a power failure of more than 5 seconds, the actuator will return mechanically to its 0 % stroke position within 30 seconds, closing the valve (A → AB).

Auto 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 auto 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»).

⚠ **Caution**

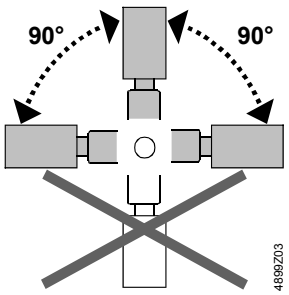
Regulations and requirements to ensure the safety of people and property must be observed at all times!

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 «Operation»).

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»).

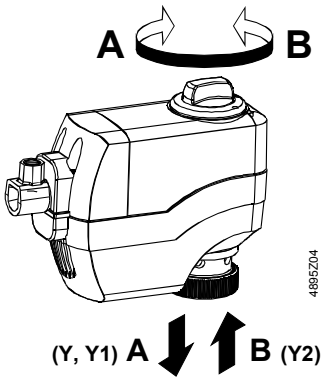
Calibrating the SSC61 or SSC61.5 without a valve connected causes the actuator to lock in position 1. To recalibrate (after mounting on a valve), disconnect power and reset the stroke manually from position 1 to 0 (refer to «Recalibration»).

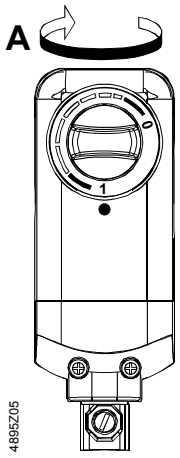
Operation

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

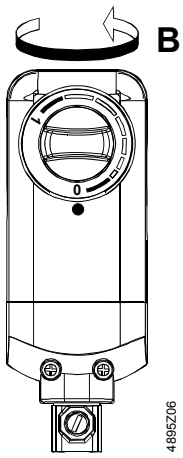
Note

To retain the manually set position, unplug the connecting cable. Due to the reset function, the SSC61.5 will first travel to position 0 and can then be driven manually to the required position.





Position indicator in position 1 = OPEN



Position indicator in position 0 = CLOSED

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 may 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 data (Δp_{max}, Δp_s, leakage rates, noise levels, service life, etc.) 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 [1]
	⚠ 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) [3]	max. 10			
Functional data	Running time for 5.5 mm stroke	150 s ± 2 %		30 s ± 10 %	
	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^2			
	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 [2]	UL873-listed			
	CUL approval [2]	certified to Canadian Standard C22.2 No. 24-93			
	Safety class	II	III		
	Housing protection standard	IP40 to EN 60529			

		SSC31	SSC81	SSC61	SSC61.5
Dimensions / weight	Dimensions	refer to «Dimensions»			
	Coupling thread to valve	coupling nut G¾			
	Weight	0.26 kg	0.25 kg		0.27 kg
Housing	Base, rotary knob	plastic, RAL 7035, light-grey			
	Cover	plastic, RAL 5014, pigeon-blue			

1) 3 VA, when capacitor charged for automatic reset
2) Applies to type SSC… actuators with type suffix U
3) Provided the controllers' output is sufficient

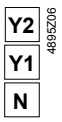
General ambient conditions

	Operation IEC 721-3-3	Transport IEC 721-3-2	Storage 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

All actuators must be electrically connected and installed in accordance with local safety regulations.

SSC31

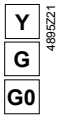


Control signal CLOSE (AC 230 V)
Control signal OPEN (AC 230 V)
Neutral

SSC81

Control signal CLOSE
Control signal OPEN
System potential AC 24 V

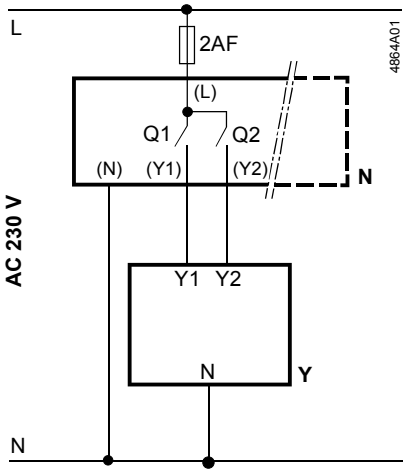
SSC61
SSC61.5



Control signal DC 0...10 V
System potential AC 24 V (+ with DC 24 V)
System neutral (- with DC 24 V)

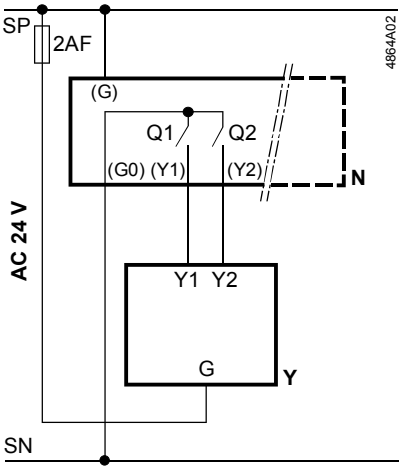
Connection diagrams

SSC31



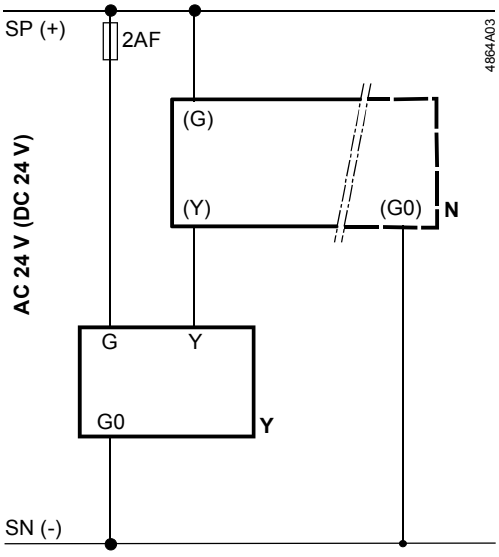
N	Controller
Y	Actuator
L	System potential AC 230 V
N	System neutral
Q1, Q2	Controller contacts

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