SIEMENS

دقیق صنعت پیشرو

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 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	Operating voltage	Running time at 50 Hz	Positioning 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 (30 s)

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.
Items are supplied individually packed.

Equipment combinations

Type reference	Type of valve	k_{vs} [m³/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 Landis & Gyr 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 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

| **Self-calibration** | When the AC / DC 24 V supply is applied for the first time, the actuators calibrate |
| SSC61 and SSC61.5 | themselves independent of the control signal. In this process, the actuator drives the |
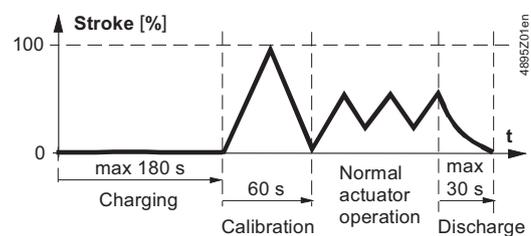
**Self-calibration**
SSC61 and SSC61.5

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 is completed.

Recalibration

If the calibrated actuator is used with some other valve (e.g. a replacement valve), it must be recalibrated.

1. Unscrew screws
2. Remove cover
3. Connect the 2 contacts behind the slot for about 1 second.
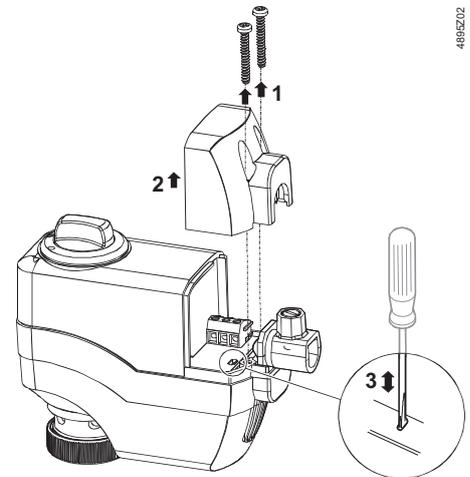
⚠ The calibration can only be made correctly if the actuator is fitted to a valve (refer to «Equipment combinations», page 2).

Features and benefits

- Plastic cover
- Position indication
- 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 end positions
- Parallel operation of 10 SSC... possible, provided the controllers' output is sufficient

Accessories

Mounting kit

Type ASK30

Mounting kit for Landis & Gyr valves VVG45…, VXG45… and X3i...

Notes

Engineering

The actuators must be electrically connected in accordance with local regulations (refer to «Connection diagrams», page 6).

⚠ **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», page 5).

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», page 4).

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Building Technologies
HVAC Products

Orientation
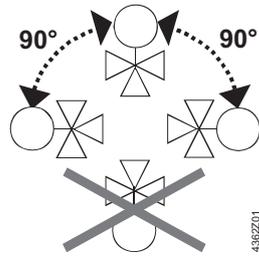
Commissioning

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», page 2).

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», page 3).

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

Position indicator in position 1: Valve OPEN

Position indicator in position 0: Valve CLOSED
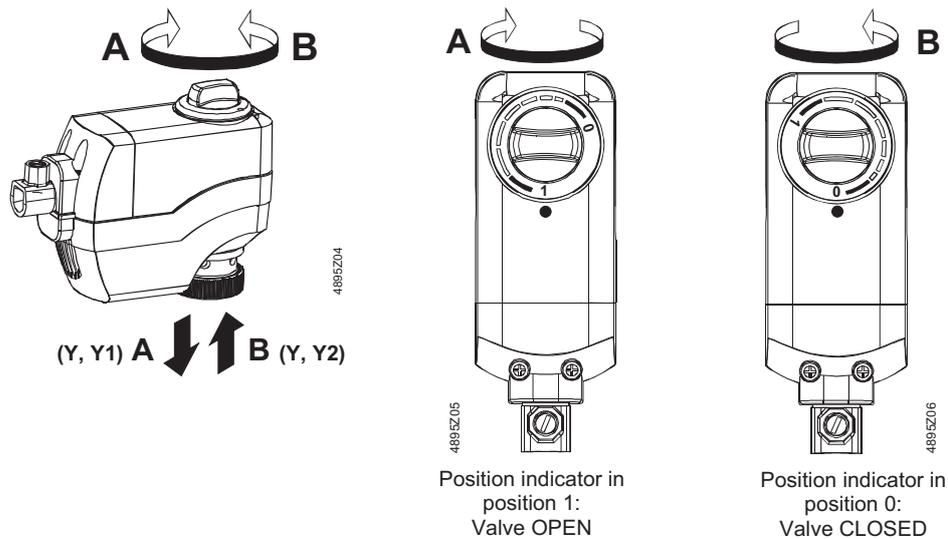
Note SSC61…

After manual override with the rotary knob the positioning signal and the stroke synchronize autonomously, if the positioning signal is once > 9.7 V or < 0.3 V.

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.

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اتوماسیون و سیستمهای کنترل

Building Technologies

HVAC Products

The technical relating to specific applications are valid only in conjunction with the Siemens valves listed in this Data Sheet under «Equipment combinations», page 2.

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) [2]	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^2			
	Terminal block color	green	grey	red	red
	Cable strain relief	for cables 4...11 mm dia.			
Standards	Meets requirements for CE marking: EMC directive	2004/108/EC			
	Immunity	EN 61000-6-2 Industrial [3]			
	Emission	EN 61000-6-3 Residential			
	Low voltage directive	2006/95/EC			
	Electrical safety	EN 60730-1			
	Protection class to EN 60730	II		III	
	Contamination level	EN 60730, Class 2			
	Housing protection Upright to horizontal	IP40 to EN 60529			
	UL approbation		UL 873		
	cUL approbation		C22.2 No. 24-93		
Dimensions / weight	Dimensions	refer to «Dimensions», page 7			
	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			

[1] 3 VA, when capacitor charged for automatic reset
[2] Provided the controllers' output is sufficient
[3] Transformer 160 VA (e.g. Siemens 4AM3842-4TN00-0EA0) for AC 24 V actuators

General ambient conditions		Operation EN 60721-3-3	Transport EN 60721-3-2	Storage EN 60721-3-1
	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

SSC31

Y2	Control signal CLOSE (AC 230 V)
Y1	Control signal OPEN (AC 230 V)
N	Neutral

SSC81

Y2	Control signal CLOSE (AC 24 V)
Y1	Control signal OPEN (AC 24 V)
G	System potential AC 24 V

SSC61
SSC61.5

Y	Control signal DC 0...10 V	
G	System potential AC 24 V	(+ with DC 24 V)
G0	System neutral	(- with DC 24 V)

Connection diagrams

SSC31
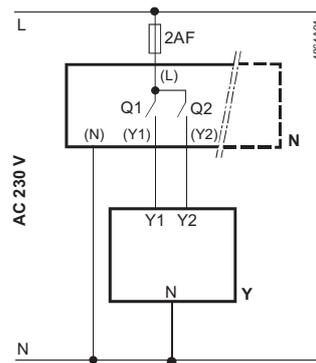
N	Controller
Y	Actuator
L	System potential AC 230 V
N	System neutral
Y1, Y2	Control signal OPEN, CLOSE
Q1, Q2	Controller contacts

SSC81
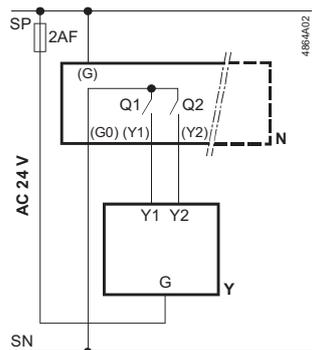
| N	Controller
Y	Actuator
SP, G	System potential AC 24 V
SN, G0	System neutral
Y1, Y2	Control signal OPEN, CLOSE
Q1, Q2	Controller contacts

SSC61
SSC61.5
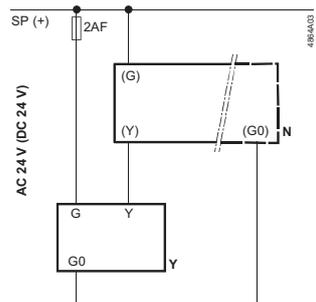
N	Controller
Y	Actuator
SP G	System potential AC / DC 24 V
SN, G0	System neutral
Y	Control signal

All dimensions in mm

4895Z08

89.2

110.8

21.6

G¾

115.1

132.5

48