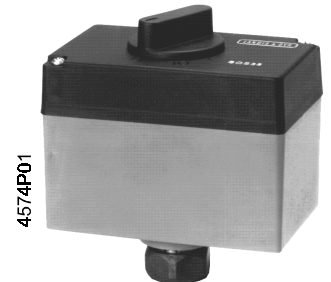


## Electric actuators for valves with 5.5 mm stroke

**SQS35...**  
**SQS65...**



4574P02  
SQS35.50, SQS35.53, SQS65.5  
with spring return and  
without manual adjustment



4574P01  
SQS35.00, SQS35.03, SQS65, SQS65.2  
without spring return and  
with manual adjustment

### Electric actuators

- **SQS35...** AC 230 V operating voltage, 3-position signal
- **SQS65...** AC 24 V operating voltage  
Positioning signal DC 0...10 V or DC 2...10 V
- The unit comes with or without spring return as per DIN 32 730
- Functional enhancement by means of auxiliary switch for SQS35.00, SQS35.03
- Positioning force 400 N
- Stroke 5.5 mm
- For direct valve mounting without additional setting tasks
- With manual adjustment and position indication for actuators without spring return
- Without manual adjustment and position indication for actuators with spring return

### Use

To actuate two-port and three-port valves of type series VVG44..., VVG55..., VVI52..., VVP45..., VMP43..., VMP44..., VMP45..., VXG44..., VXP45... with 5.5 mm stroke.

- Field of use as per IEC 721-3-3 Class 3K5
- Ambient temperatures: -5 ... +50 °C
- Medium temperature inside the valve: +2...+130 °C
- With the aid of the ASK30 mounting set, all ex-Landis & Gyr valves with 4 or 5.5 mm stroke can be actuated: X3i..., VVG45..., VXG45..., VXG46..., VVI51...

### Functions

**SQS35..., SQS65...**

3-position signal or  
proportional positioning  
signal

The reversible synchronous motor is controlled by a 3-position signal either via terminal Y1 or Y2 or via a proportional DC 0...10 V or DC 2...10 V positioning signal and generates the desired stroke by means of a blocking-proof gear train.

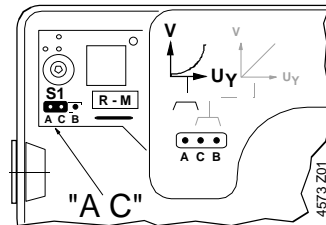
- Voltage on Y1: Valve stem retracts, through-port opens
- Voltage on Y2: Valve stem extends, through-port closes
- No voltage on either Y1 or Y2: The valve stem remains in the resp. position

## SQS65...

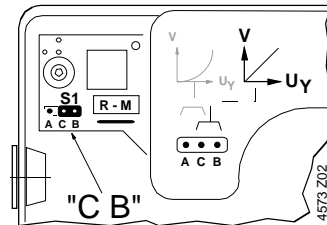
Selection of flow characteristic

By means of a plug (on the circuit board below the housing cover), the through-port characteristic flow can be changed from "equal-percentage" to "linear" for valves of 5.5 mm stroke in relation to the valve's through-port.

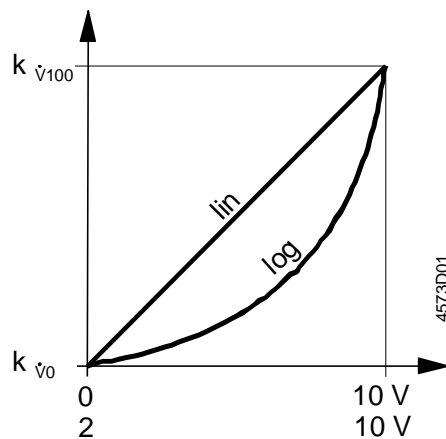
- **Plug S1 on pins A and C results in an equal-percentage flow characteristic = factory setting**, used primarily for heating applications
- **Plug S1 on pins B and C results in a linear flow characteristic**, used primarily for cooling applications
- **For automatic operation, plug S1 must be inserted on either pins A and B or pins B and C, depending on the selected flow characteristic.**



Plug S1 on: **A and C**  
(equal-percentage flow characteristic)



Plug S1 on: **B and C**  
(linear flow characteristic)



SQS65, SQS65.5, SQS65.2

Connection between positioning signal  
DC 0...10 V or DC 2...10 V and  
volumetric flow

Positioning signals:

Y = DC 0 ... 10 V or DC 2...10V

R = 0...1000 Ω

Flow characteristic:

log = equal-percentage valve  
characteristic (factory setting)

lin = linear valve characteristic

Flow range

$k_{v100}$  = Volumetric flow 100%

$k_{v0}$  = Volumetric flow 0%

## Type summary Actuators

Type	Operating voltage	Control type (Positioning signal)	Runtime [s]	Spring return function	Spring return time [s]
SQS35.00	AC 230 V	3-position	150	No	---
SQS35.03			35	No	---
SQS35.50			150	Yes	8
SQS35.53			35	Yes	8
SQS65.5	AC 24 V	DC 0...10 V	35	Yes	8
SQS65...				No	---
SQS65.2				No	---

## Accessories

Name	Type	For actuators	Mounting location
Auxiliary switch	ASC9.6	SQS35.00, SQS35.03	1x ASC9.6

## Ordering

Indicate the actuator type and the accessory type where required.

- Example: **SQS35.00**

## Delivery

Actuator, valve and accessories are packed and delivered separately and are not mounted on delivery.

## Equipment combinations

With the SQS35... or SQS65... electric actuators, the following two-port and three-port valves with threaded connection and 5.5 mm stroke can be actuated.

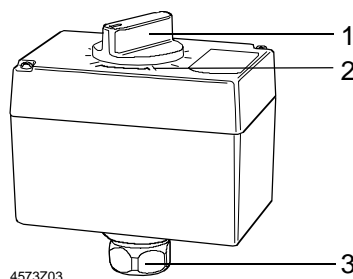
Type	DN [mm]	PN [bar]	Data sheet
<b>Two-port valves</b>			
VVG44...	15...40	16	<b>4364</b>
VVP45...	10...20	16	<b>4845</b>
VMP43...(2)	15, 20	16	<b>4841</b>
VMP44...(2)	15, 20	16	<b>4844</b>
VVG55...	15...25	25	<b>4379</b>
VVI52...	15	25	<b>4377</b>
<b>Three-port valves</b>			
VXG44...	15...40	16	<b>4464</b>
VXP45...	10...20	16	<b>4845</b>
VMP43...	15, 20	16	<b>4841</b>
<b>Three-port valves with T-bypass</b>			
VMP45...	10...20	16	<b>4845</b>
VMP43...(4)	15, 20	16	<b>4841</b>
VMP44...(4)	15, 20	16	<b>4844</b>

Refer to the associated valve data sheets for permissible differential pressures  $\Delta p_{\max}$  and  $\Delta p_s$  of the motorised valve.

## Mechanical design

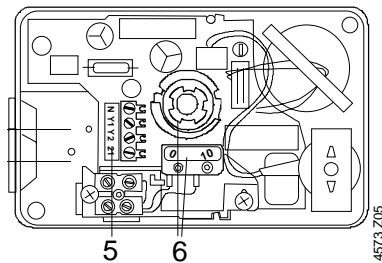
### Actuators

- Maintenance-free, electric actuator
- Reversible synchronous motor
- Blocking-proof gear train
- Spring return as per DIN 32 730 for SQS35.50, SQS35.53, SQS65.5
- Load-dependent switch-off in the limit positions
- Selectable flow characteristic: equal-percentage or linear for SQS65, SQS65.2, SQS65.5 only when combined with valves VVG44..., VVI52..., VXG44...
- Directly impacting manual adjustment for SQS35.00, SQS35.03, SQS65, SQS65.2
- Position indication for SQS35..., SQS65...
- Mounting location for auxiliary switch; for SQS35.50, SQS35.53, the auxiliary switch is factory-integrated



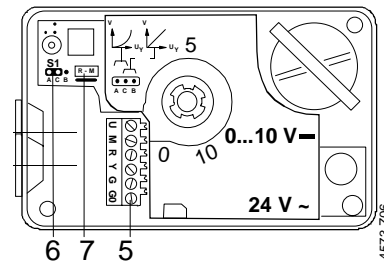
SQS35..., SQS65...

- 1 Manual adjustment
- 2 Position indication
- 3 Coupling bolt for valve neck



SQS35...

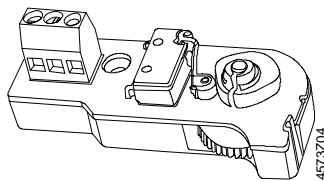
- 5 Terminal strip
- 6 Mounting location for auxiliary switch at SQS35.00, SQS35.03 or standard integrated auxiliary switch for SQS35.50, SQS35.53



SQS65...

- 5 Terminal strip
- 6 Plug "lin" / "log"
- 7 Bridge R – M

## Accessories



Auxiliary switch ASC9.6  
 Mounting in actuator SQS35.00, SQS35.03.  
 Adjustable switching point between 0...100 % stroke

See section "Technical data" for more information on accessories.

## Disposal

The various material types used require that you disassemble the unit and sort the components prior to disposal.

## Notes

### Engineering

Conduct the electric connections in accordance with local regulations on electric installations as well as the unit or connecting diagrams on page 5.



**Observe safety-related requirements and restrictions to prevent injuries and damages to goods.**

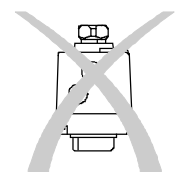
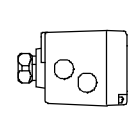
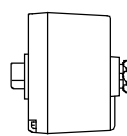
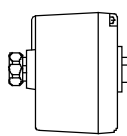
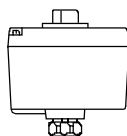


**With the SQS65... actuators, the plug for the flow characteristic must be set to "lin" if a valve of type series VVG55..., VMP..., VVP..., VXP... is used.**

Additionally, pay attention to permissible temperatures as listed in sections "Use" and "Technical data". If an auxiliary switch is required, indicate its switching point on the plant schematic.

## Mounting

### Mounting positions



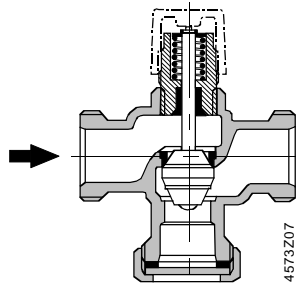
Permissible

Not permissible

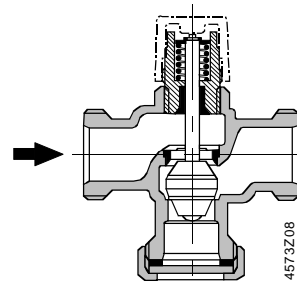
The valve mounting instructions are printed on the rear of the actuator. Accessory instructions are located in the respective accessory's packing.

## Commissioning

During commissioning, check the wiring and conduct a functional check. Additionally, check or make the required settings at the auxiliary switch.



Stroke "0" = Valve closed



Stroke "1" = Valve open



**If the manual adjustment knob is turned counter-clockwise, the Landis & Staefa valves with 5.5 mm stroke are closed (stroke = 0%).**

## SQS35...

These actuators generate a linear flow characteristic when combined with valves VVG44..., VVI52... or VXG44....

## SQS65...

These actuators via integrated electronics generate an equal-percentage flow characteristic (factory setting) that, when combined with valves VVG44..., VVI52... or VXG44..., can be replugged to linear.

## Warranty

The technical data ( $\Delta p_{max}$ ,  $\Delta p_s$ , leakage rate, noise level and life) apply only when used together with the Landis & Staefa valves as listed in "Equipment combinations".



**The use with third party valves expressly voids any warranty claims.**

## Service



**For actuator service work: Turn off the pump and the operating voltage, close the shutoff valves, depressurize the pipes and allow them to cool down. Disconnect the electrical connections, where required, from the terminals. Re-commission the actuator only if mounted correctly on the valve.**

## Technical data

### Actuators Supply

<b>Operating voltage</b>	
SQS35...	AC 230 V $\pm$ 15%
SQS65...	AC 24 V $\pm$ 20%
<b>Frequency</b>	50 Hz or 60 Hz
<b>Power consumption</b>	
SQS35.00	2.5 VA
SQS35.03	3.5 VA
SQS35.50	5 VA
SQS35.53	6 VA
SQS65, SQS65.2	4.5 VA
SQS65.5	7 VA
<b>Switching capacity</b> of the limit switches	on terminals 11 or 12
SQS35...	AC 250 V, 6 A res., 2.5 A ind.

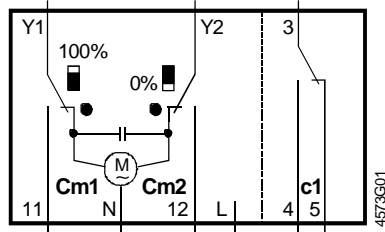
### Function data

<b>Control type</b> (positioning signal)	
SQS35.00, SQS35.03	3-position
SQS35.00, SQS35.03	DC 0...10 V (proportional)
SQS65, SQS65.5	DC 2...10 V (proportional)
SQS65.2	
<b>Runtime</b> at 50 Hz	for opening and closing
SQS35.00, SQS35.03	150 s
SQS35.03, SQS35.53	
SQS65, SQS65.2, SQS65.5	35 s
<b>Spring return time</b> on spring return function	for closing
SQS35.50, SQS35.53, SQS65.5	
closing	8 s
<b>Positioning force</b>	400 N
<b>Stroke</b>	5.5 mm

<b>Signal inputs</b>	<b>Terminal Y</b>	
	SQS65, SQS65.5	
	Voltage	DC 0 ... 10 V
	Current	max. 0.1 mA
	SQS65.2	
	Voltage	DC 2 ... 10 V
	Current	max. 0.1 mA
	<b>Terminal R</b>	
	SQS65, SQS65.5, SQS65.2	
	Resistance	0...1000 Ω
<b>Signal outputs</b>	<b>Terminal U</b>	
	SQS65, SQS65.5, SQS65.2	
	Voltage	DC 0 ... 10 V
	Current	max. 0.5 mA
<b>Housing protection</b>	Housing protection	IP54 as per EN 60529
	Cable entry glands	Pg11 (2x)
<b>Environmental conditions</b>	<b>Medium temperature</b> , maximum permissible temp. inside valve	130 °C
	<b>Operation</b>	
	Climatic conditions	as per IEC 721-3-3
	Temperature	Class 3K5
	Humidity	-5 ... +50 °C
		5... 95 % r.h.
	<b>Transport</b>	
	Climatic conditions	as per IEC 721-2-3
	Temperature	Class 2K3
	Humidity	-25 ... +70 °C
		<95 % r.h.
	<b>Storage</b>	
	Climatic conditions	as per IEC 721-1-3
	Temperature	Class 1K3
	Humidity	-5 ... +50 °C
		5 ... 95 % r.h.
<b>Standards</b>	<b>CE conformity</b>	
	In accordance with EMC directive	89/336/EEC
	Low voltage guideline	73/23/EEC
<b>Dimensions</b>	Actuators	see "Dimensions"
<b>Weight</b>	<b>Actuators</b>	
	SQS35.00, SQS35.03, SQS65, SQS65.2	
	Weight without packaging	1.5 kg
	With packaging	1.6 kg
	SQS35.50, SQS35.53, SQS65.5	
	Weight without packaging	1.6 kg
	With packaging	1.7 kg
<b>Materials</b>	Actuator housing	Plastic
	Housing cover and manual adjustment knob	Plastic
	Gear train and stem with coupling	Plastic
<b>Accessories</b>		
<b>Auxiliary switch ASC9.6 for SQS35.00, SQS35.03</b>	Switching capacity	AC 250 V, 10 A res., 3 A ind.

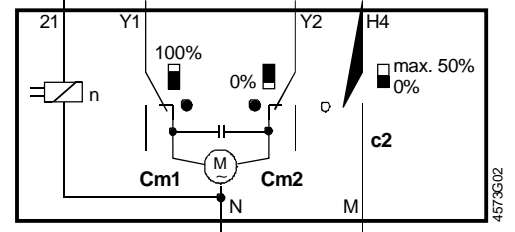
## Internal diagram

### SQS35...



SQS35.00, SQS35.03  
AC 230 V, 3-position  
without spring return

Cm1 Limit switch 100 % stroke  
Cm2 Limit switch 0 % stroke  
c1 Auxiliary switch ASC9.6 can be integrated



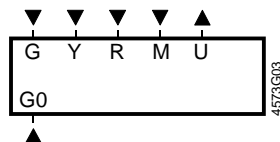
SQS35.50, SQS35.53  
AC 230 V, 3-position  
with spring return

c1 Preset auxiliary switch for flow  
min. limitation, pre-integrated in the actuator  
on delivery

## Connection diagram

### SQS65...

Connecting terminals



G, G0 **AC 24 V operating voltage**  
G System potential (SP)  
**corresponds to LS for SQS65.2**  
G0 System neutral (SN)  
**corresponds to NS for SQS65.2**

#### Signal inputs

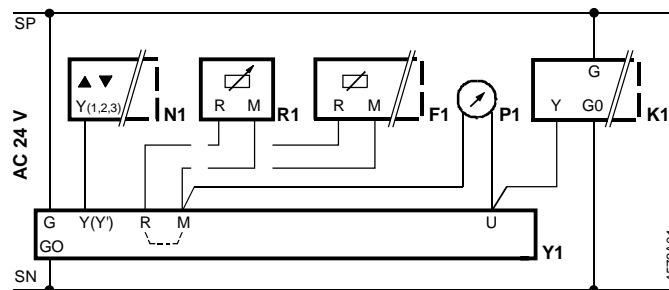
Y SQS65, SQS65.5, DC 0...10 V  
SQS65.2: DC 2...10 V  
R SQS65, SQS65.5,  
SQS65.2: 0...1000 Ω  
M Measuring neutral

#### Signal outputs

U SQS65, SQS65.5,  
SQS65.2: DC 0...10 V

### SQS65, SQS65.2

The connection diagram shows all possible connections.  
The amount and type of connection depends on the plant.



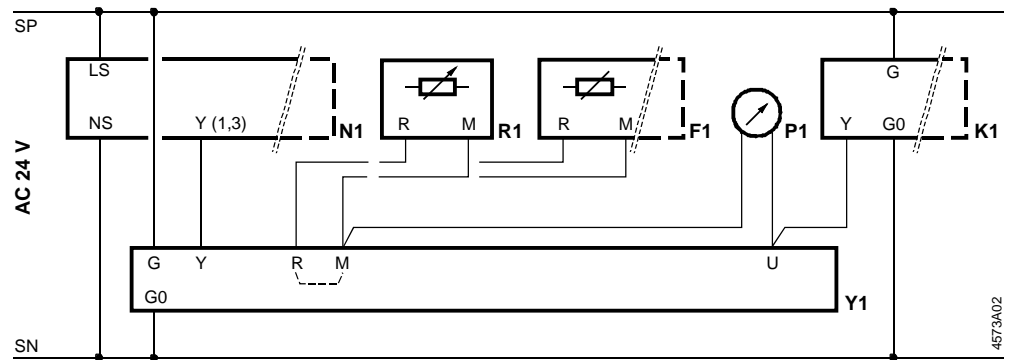
**SQS65, SQS65.5:** AC 24 V, DC 0...10 V

Units:

N1 Controller  
P1 Position indicator  
Y1 Actuator

If a unit is connected to terminal R, the factory-fitted bridge across "R – M" on the printed circuit board must be cut.

## SQS65.2



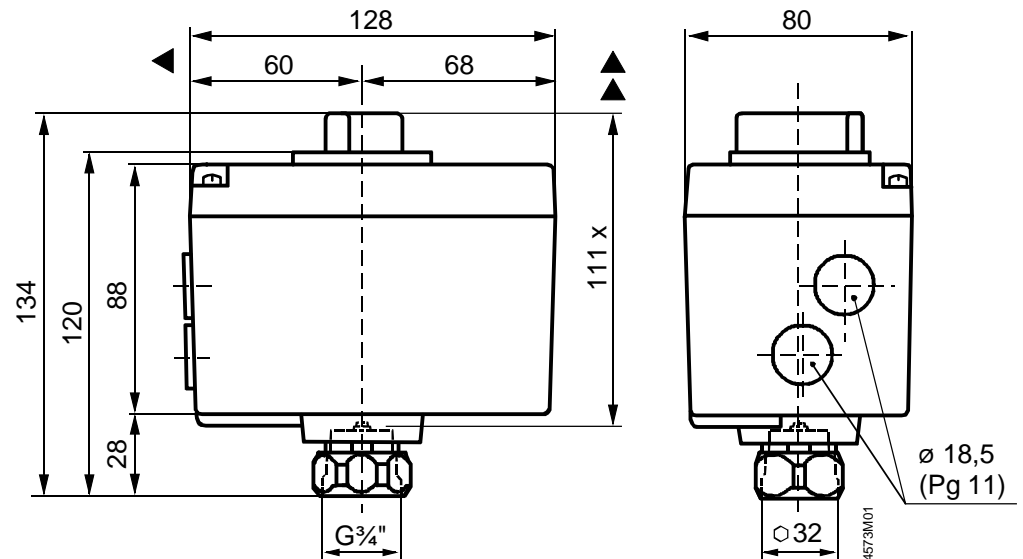
**SQS65.2:** AC 24 V, DC 2...10 V

Units:

- F1 Frost protection monitor
- K1 On/Off switch
- N1 CLASSIC controller
- P1 Position indicator
- R1 Positioner
- K1 On/Off switch
- N1 CLASSIC controller
- P1 Position indicator
- R1 Positioner
- Y1 Actuator

If a unit is connected to terminal R, the factory-fitted bridge across "R – M" on the printed circuit board must be cut.

## Dimensions



\* Actuator height from valve

- ▲ > 100 mm [ Minimum mounting distance to wall or ceiling,
- ▲▲ > 200 mm [ Connection, operation, maintenance, etc.