

ACVATIX™

Electromotoric actuators for seat valves V..I47..V..F47.., V..F42..C

SBX.., SBV..



with a 20...40 mm stroke

- SBX31、SBV31 Operating voltage AC 230 V, 3-position control signal
- SBX81、SBV81 Operating voltage AC 24 V, 3-position control signal
- SBX61、SBV61 Operating voltage AC 24 V, control signal DC 0...10 V
- SBX61、SBV61 Optional 4...20 mA control signal function is realized by the AZX420 function module. Actuator returns to the full close position, when the control signal is lost.
- SBX151.00、SBV151.00 Operating voltage AC 24 V, control signal 4...20 mA, keep the valve position when the control signal is lost
- For direct mounting on valves; no adjustments required
- Manual adjuster, stroke position indicator

Use

It is used for Siemens 2-way valve VVF47..., VVI47..., VVF42..C and 3-way valve VXF47..., VXI47..., VXF42..C with positioning stroke of 20 mm and 40 mm, as control valves in heating, ventilation and air conditioning systems.

Type summary

Product No.	Stock No.	Positioning signal	Stroke	Pos. force	Operating voltage	Pos. time [s]	Manual operation
SBX61	S55160-A100	DC 0...10 V	20 mm	800 N	AC 24 V	120	Turnkey for manual adjustment
SBX81	S55160-A101	3-position			AC 230 V		
SBX31	S55160-A102				AC 24 V		
SBX151.00	S55160-A108	4...20 mA					
SBV61	S55160-A103	DC 0...10 V	40 mm	1600 N	AC 24 V	180	Turnkey for manual adjustment
SBV81	S55160-A104	3-position			AC 230 V		
SBV31	S55160-A105				AC 24 V		
SBV151.00	S55160-A109	4...20 mA					

Electrical accessories

Product No.	Stock No.	Description	SBX31 SBV31	SBX81 SBV81	SBX61 SBV61	SBX151.00 SBV151.00
AZX420	S55845-Z120	Function module	-	-	Max. 1	-

Mechanical accessories

Product No.	Stock No.	Description	SBX..	SBV..	Picture	Notes
-	-	Coupling	Max. 1	Max. 1		Coupling is packaged inside the actuator packaging

Ordering

Example

Product No.	Stock No.	Description	Quantity
SBX61	S55160-A100	Actuator	1
AZX420	S55845-Z120	Function module	1

Delivery

Actuators, valves and accessories are supplied in individual packs.

Equipment combinations

2-port valves VV.. (control or safety shutoff valves)

Valve type		DN	PN class	k _{vs} [m ³ /h]	Data sheet
VVI47..	Thread	15...50	16	2.5...40	N4470
VVF47..	Flange	50...150	16	40...315	N4419
VVF42..C	Flange	25...150	16	6.3...400	A6V10794157

3-port valves VX.. (Control valves for functions "mixing" and "diverting")

Valve type		DN	PN class	k _{vs} [m ³ /h]	Data sheet
VXI47..	Thread	15...50	16	2.5...40	N4470
VXF47..	Flange	50...150	16	40...315	N4419
VXF42..C	Flange	25...150	16	6.3...400	A6V10794157

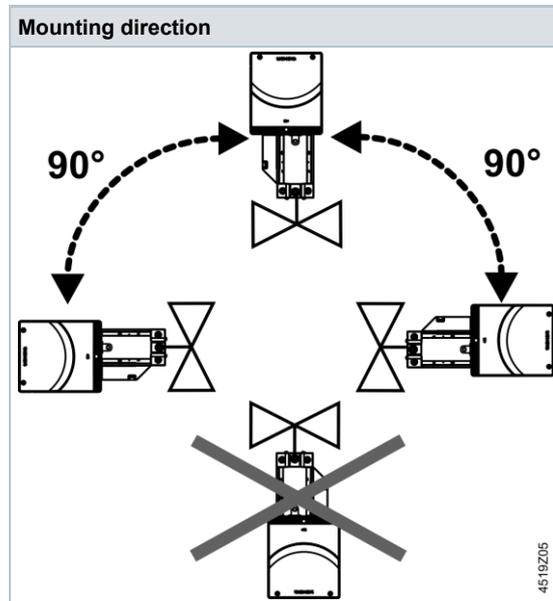
Product documentation

Detailed Informations about the actuators can be found in the Basic documentation "Electromotoric actuators SBX.., SBV.." (CB1P4519en).

Engineering SBX.., SBV..

3-position actuators must have their own specific controller, Please refer to "Connection Diagrams" (on page 7).

Up to 10 SBX61 or SBV61 actuators can be driven in parallel on a controller output with a rating of 1 mA. Modulating 0...10 VDC actuators have an input impedance of 100 kΩ.

Mounting**Maintenance**

The actuators are maintenance-free.

Self-calibration

During commissioning with valves, every time power is applied to the actuator without Y input ($Y = 0 \text{ V}$ or $Y \leq 2.5 \text{ mA}$), the actuator carries out a self-calibration with the valve, i.e. the actuator automatically runs to H0 position, after 30 seconds, the actuator will store the detected valve stroke into its internal nonvolatile memory. To ensure the calibration can be performed successfully, the combination valves must be 20mm stroke for SBX61 and SBX151.00, and 20 mm or 40 mm stroke for SBV61 and SBV151.00.

Warranty

Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations".

Note

Siemens rejects any and all warranties in the event that third-party products are used.

Technical Data

Power supply	SBX..	SBV..
Operating voltage	SBX31 AC 230 V (± 15%)	SBV31 AC 230 V (± 15 %)
	SBX61 AC 24 V (± 20%)	SBV61 AC 24 V (± 20 %)
	SBX81 AC 24 V (± 20%)	SBV81 AC 24 V (± 20 %)
	SBX151.00 AC 24 V (± 20%)	SBV151.00 AC 24 V (± 20 %)
Frequency	50/60 Hz	
Power consumption at 50 Hz	SBX31 9 VA	SBV31 9 VA
	SBX61, SBX151.00 5 VA	SBV61, SBV151.00 7 VA
	SBX81 4 VA	SBV81 7 VA
	Stem retracts/extends	Stem retracts/extends

Function data	SBX..	SBV..
Positioning times	120 s	180 s
Positioning force	800 N	1600 N
Nominal stroke	20 mm	40 mm
Permissible medium temperature (valve fitted)	+1...95 °C	

Signal inputs	SBX..	SBV..
Positioning signal "Y1, Y2"		
3-position	Voltage	SBX31 AC 230 V (± 15 %) / SBV31 AC 230 V (± 15 %)
	Voltage	SBX81 AC 24 V (± 20 %) / SBX81 AC 24 V (± 20 %)
SB..61 (DC 0...10 V)	Current	≤ 0.1 mA
	Input impedance	100 kΩ
SB..151.00 (DC 4...20 mA)	Current	DC 4...20 mA ± 1 %
	Input impedance	220 Ω

Parallel operation	SBX..	SBV..
SB..61	≤ 10 (depending on controller output)	

Position feedback	SBX61, SBX151.00	SBV61, SBV151.00
SB..61 position feedback U	DC 0...10 V	
Load impedance	> 10 kΩ	
SB..151 position feedback U	DC 4...20 mA	
Load impedance	< 500 Ω	

Connecting cable	SBX..	SBV..
Wire cross-sectional areas	0.5...1.5 mm ² , AWG 20...15 ¹⁾	
Cable entries SBX.., SBV..	2 entries Ø 20.5 mm (M20)	

Degree of protection	SBX..	SBV..
Housing from vertical to horizontal	IP54 as per EN 60529	
Insulation class	As per EN 60730-1	
Actuators SBX31, SBV31 AC 230 V	Class I (with earth connection)	
Actuators SBX61, SBV61 AC 24 V	Class III	
Actuators SBX151.00, SBV151.00	Class III	
Actuators SBX81, SBV81 AC 24 V	Class III	

Environmental conditions	SBX..	SBV..
Operation		
Mounting location	Indoors	
Temperature General	-10...55 °C	
Humidity (noncondensing)	5...95 % r.h.	
Transport		
Temperature	-25...70 °C	
Humidity	< 95 % r.h.	
Storage		
Temperature	-15...55 °C	
Humidity	5...95 % r.h.	

Norms and Standards	SBX..	SBV..
EU conformity (CE)	SBX/V 31: A5W90000888* SBX/V 61/81/151.00: A5W90000889*	
RCM conformity	A5W90000885*	

Environmental compatibility

The product environmental declaration CE1E4519en* contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

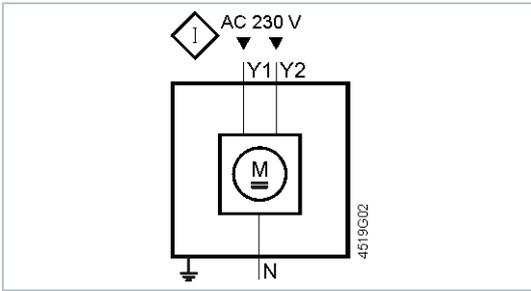
Dimensions/Weight /Accessories	SBX.., SBV..
Dimensions	See "Dimensions" (on page 10)
Weight (Excl. packaging)	
Accessories	Function module AZX420, 4...20 mA

¹⁾ AWG = American wire gauge

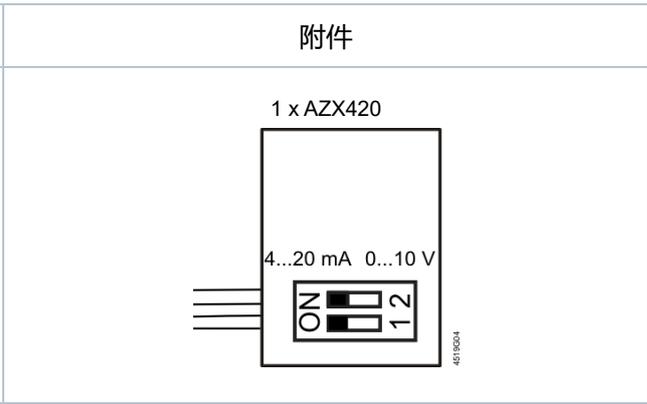
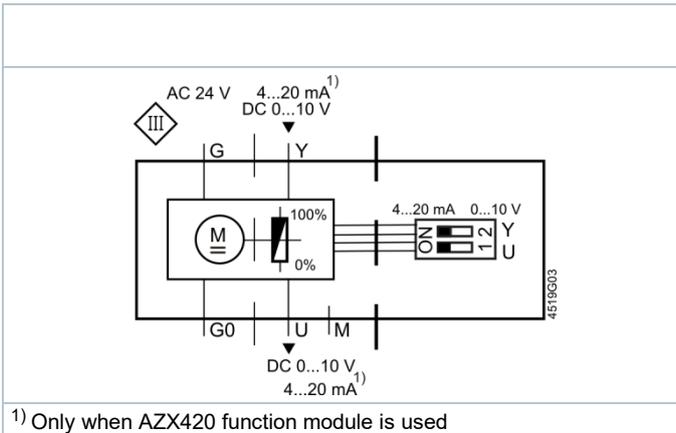
* The documents can be downloaded from <http://siemens.com/bt/download>.

Internal Diagrams

SB..31..

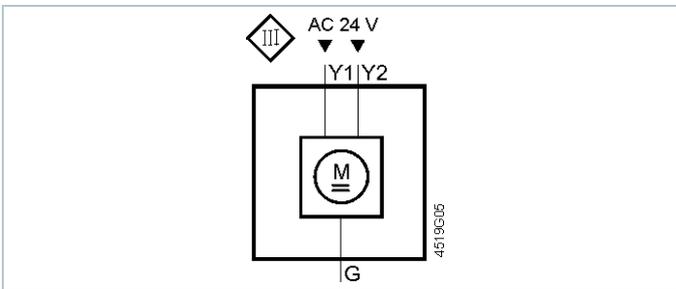


SB..61..

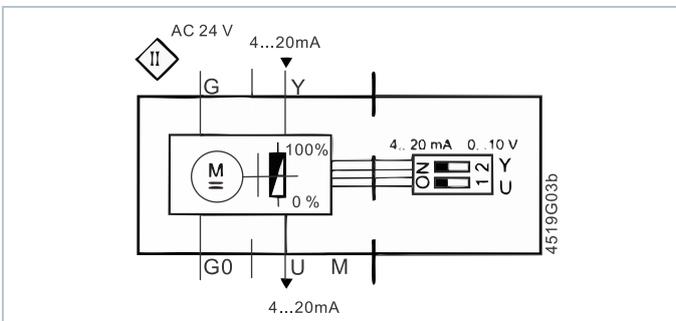


¹⁾ Only when AZX420 function module is used

SB..81..



SB..151..



Connection terminals

SB..31..

AC 230 V, 3-position

4519206	Y2	Positioning signal (actuator's stem retracts)
	Y1	Positioning signal (actuator's stem extends)
	N	System neutral (SN)

SB..61..

AC 24 V, DC 0...10 V / 4...20 mA¹⁾

4519208	U	Positioning signal DC 0...10 V / 4...20 mA ¹⁾
	M	Measuring neutral
	Y	Positioning signal DC 0...10 V / 4...20 mA ¹⁾
	G0	System neutral (SN)
	G	System potential (SP)

¹⁾ Only When AZX420 is used

SB..151..

AC 24 V, 4...20 mA

4519208	U	Positioning signal 4...20 mA
	M	Measuring neutral
	Y	Positioning signal 4...20 mA
	G0	System neutral (SN)
	G	System potential (SP)

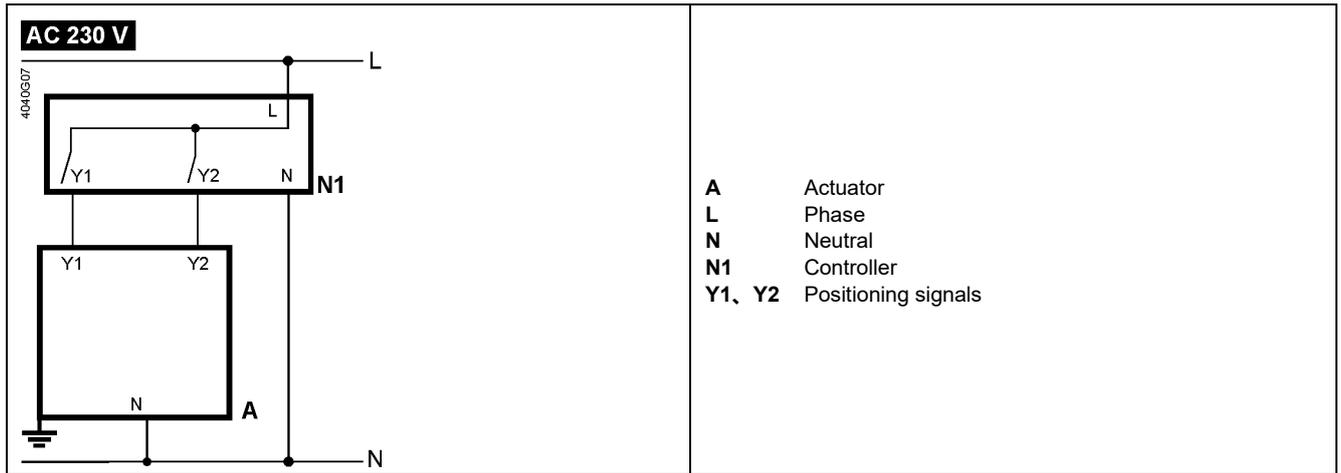
SB..81..

AC 24 V, 3-position

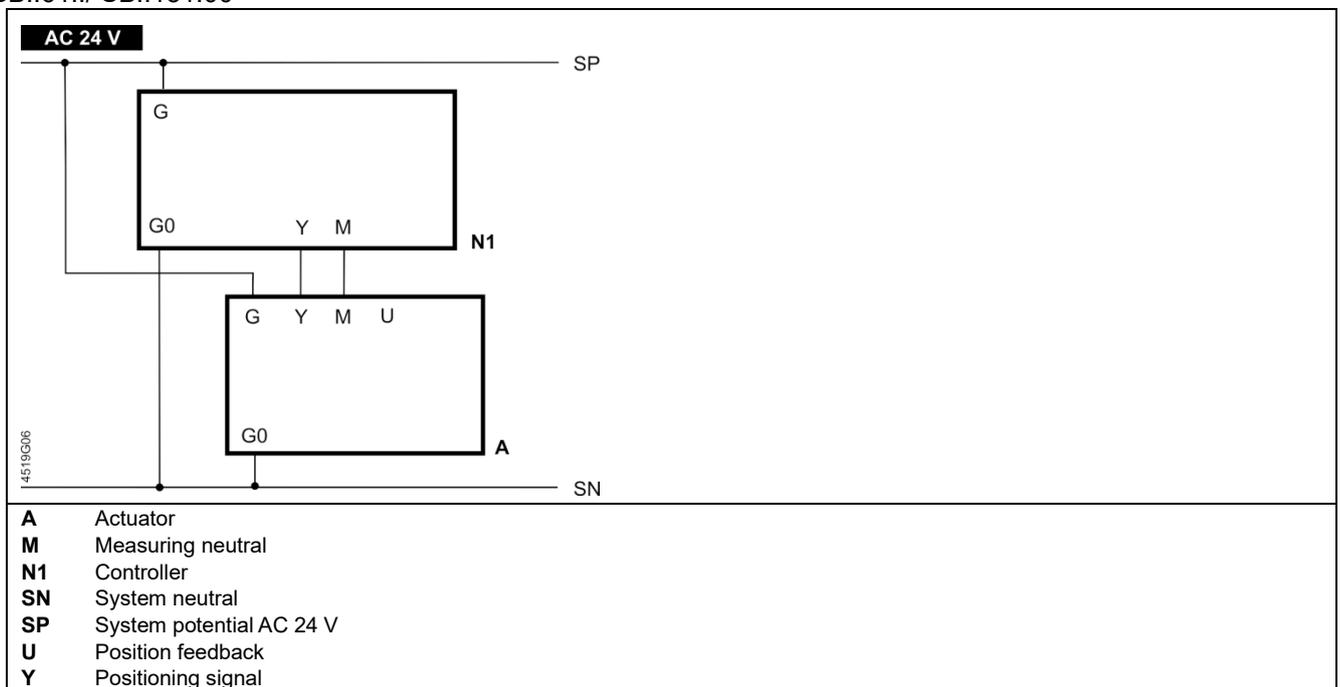
4519207	Y2	Positioning signal (actuator's stem retracts)
	Y1	Positioning signal (actuator's stem extends)
	G	System potential (SP)

Connection Diagrams

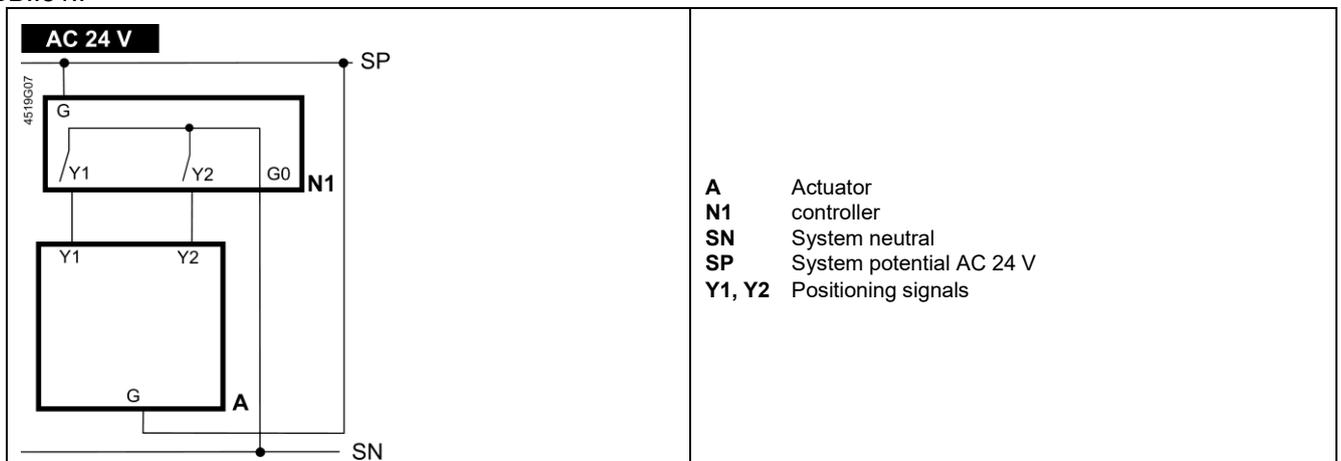
SB..31..



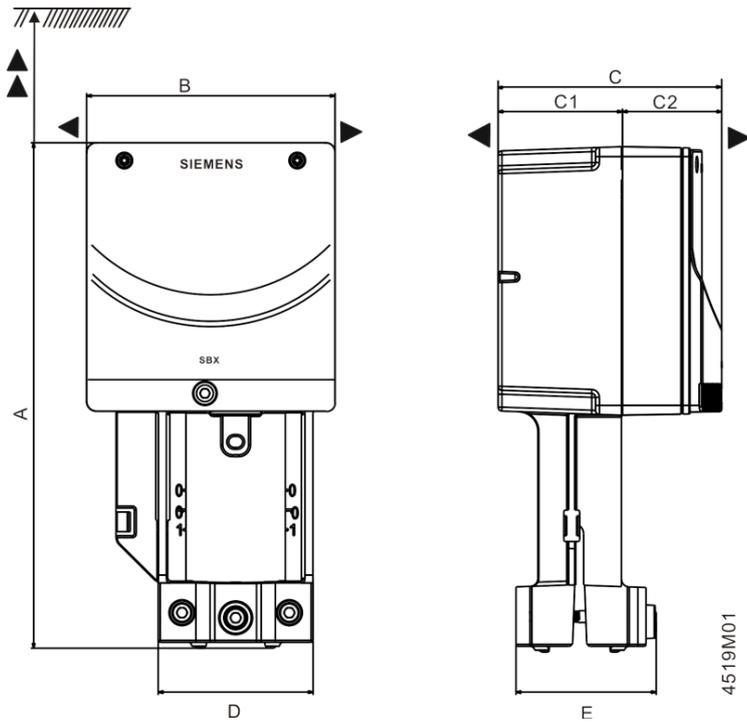
SB..61../ SB..151.00



SB..81..



Dimensions



Product No.	A	B	C	C1	C2	D	E	▶	▶▶	Weight (kg)
SBX..	256	125	113	63	50	78	71	200	100	1.5
SBV..	316	153	113	58	55	78	71	200	100	2.3

Dimensions in mm

Revision numbers

Product No.	Valid from rev. No.	Product No.	Valid from rev. No.
SBX31	..B	SBV31	..B
SBX61	..B	SBV61	..B
SBX81	..B	SBV81	..B
SBX151.00	..B	SBV151.00	..B

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