



ACVATIX™

## Electromotoric actuators for valves

SAV..

with a 20/40 mm stroke

- 
- SAV31.. Operating voltage AC 230 V, 3-position control signal
  - SAV61.. Operating voltage AC/DC 24 V, control signal DC 0...10 V, 4...20 mA
  - SAV81.. Operating voltage AC/DC 24 V, 3-position control signal
  - SAV61.. Position feedback, override control, choice of flow characteristic
  - For direct mounting on valves; no adjustments required
  - Manual adjuster, position indicator and status indication per LED
  - Optional functions with auxiliary switches, potentiometer, function module, stem heating element

### Use

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For the operation of Siemens 2-port and 3-port valves, types V..F22.., V..F32.., V..F42.., V..F43.. and V..F53.. with 20/40 mm stroke as control and safety shut-off valves in heating, ventilation and air conditioning systems.

## Type summary

Product no.	Stock no.	Stroke	Pos. force	Operating voltage	Positioning signal	Spr. ret. time	Pos. time	LED	Manual ad-juster <sup>1)</sup>	Extra functions
<b>SAV31.00</b>	S55150-A112	40 mm	1600 N	AC 230 V	3-position	-	120 s	-	Press and fix	-
<b>SAV61.00</b> <b>SAV61.00U</b>	S55150-A110 S55150-A110-A100			DC 0...10 V DC 4...20 mA 0...1000 Ω	✓			Position feedback, forced control, change of characteristic		
<b>SAV81.00</b> <b>SAV81.00U</b>	S55150-A111 S55150-A111-A100			3-position	-			-		

<sup>1)</sup> Not designed for continuous operation.

## Electrical accessories

Product no.	Auxiliary switch <b>ASC10.51</b>	Potentiometer <b>ASZ7.5</b>	Function module <b>AZX61.1</b>	Stem heating element <b>ASZ6.6</b>
Stock no.	S55845-Z103	S55845-Z106	S55845-Z107	S55845-Z108
	Max. 2			Max. 1
<b>SAV31..</b>	Max. 2	Max. 1	-	Max. 1
<b>SAV61..</b>	Max. 2	-	Max. 1 AZX61.1	
<b>SAV81..</b>		Max. 1	-	

Note: ASZ7.5

For the combination SIMATIC S5/S7 and position feedback message, we recommend actuators with DC 0...9.8 V feedback signals.

The signal peaks that occur in the potentiometer ASZ7.5 may result in error messages on Siemens SIMATIC.

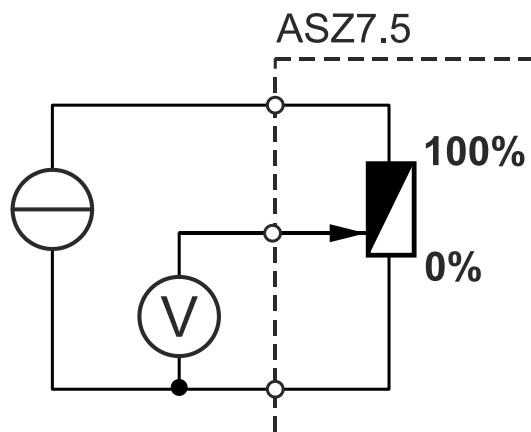
This is not the case when combined with Siemens HVAC controllers.

The reason is that SIMATIC has a higher resolution and faster response time.

Use a 3-wire connection as the voltage divider for the potentiometer.

Powering the potentiometer over the wiper may result in a shorter lifecycle.

Signal peaks occurring in this operating mode increase in frequency and severity throughout its lifecycle.



## Mechanical Accessory

Weather shield ASK39.1

## Ordering

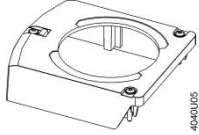

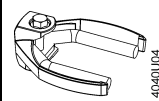
### Example

Product no.	Stock no.	Description	Quantity
SAV81.00	S55150-A111	Actuator	1
ASZ7.5	S55845-Z106	Potentiometer	1

### Delivery

Actuators, valves and accessories are supplied in individual packs.

### Spare part kit

Product number / Stock number	Housing cover	Screw (valve stem coupling)
8000060843		
		<b>U-bracket</b> 

## Product documentation

Detailed Informations about the New Generation actuators can be found in the Basic documentation "Electromotoric actuators SAV.." (CE1P4040en\_AP).

## Combinations

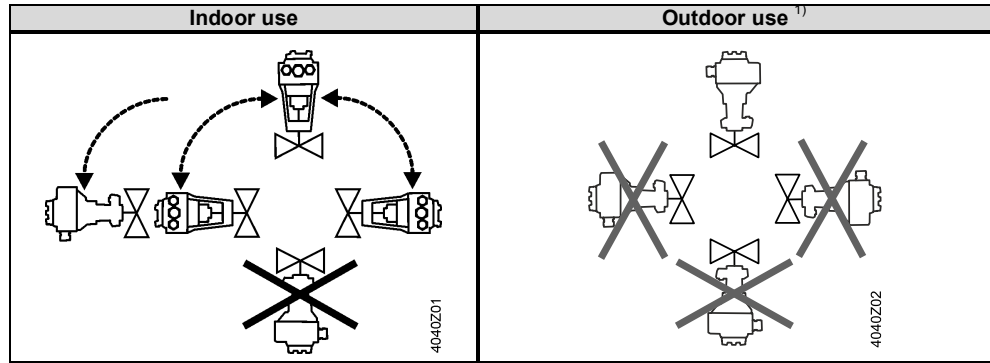
Type reference	DN	PN class	$k_{vs}$ [m <sup>3</sup> /h]	Data sheet	
<b>▶ 2-port valves VV.. (control or safety shutoff valves)</b>					
VVF22..	flange	40...100	6	16...160	N4401
VVF32..	flange	40...150	10	16...400	N4402
VVF42..	flange	40...150	16	16...400	N4403
VVF42..K	flange	100...150		160...360	
VVF43..	flange	65...150	25	50...400	N4404
VVF43..K	flange	-		-	invalid
VVF53..	flange	40...150	25	16...400	N4405
VVF53..K	flange	-		-	invalid
<b>▶ 3-port valves VX.. (control valves for "mixing" and "diverting" functions)</b>					
VXF22..	flange	40...100	6	16...160	N4401
VXF32..	flange	40...150	10	16...400	N4402
VXF42..	flange	40...150	16	16...400	N4403
VXF43..	flange	65...150		63...400	
VXF53..	flange	40...150	25	16...400	N4405

**Notes**


**Engineering**  
SAV31.. and SAV81.. 3-position actuators must have their own specific controller, refer to "Connection Diagrams" (page 8).

SAV61.. Up to 10 actuators can drive in parallel on a controller output with a rating of 1 mA. Modulating actuators have an input impedance of 100 kΩ.

**Mounting**



<sup>1)</sup> Only in connection with weather shield ASK39.1

-  During operation in heating installations the actuator consol, which is in contact with the hot valve, gets hot as well and can reach temperatures up to 100 °C.
- When servicing actuators:
- Deactivate the pump and turn off the power supply
  - Close the shutoff valves
  - Allow pipes to completely cool down

**Maintenance**

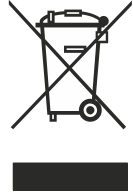
The actuators are maintenance-free. Warranty The engineering data specified in chapter "

Combinations" (page 3) are only guaranteed in connection with the Siemens valves listed.

**Note**

**When using the actuators in connection with valves of other manufacture, correct functioning must be ensured by the user, and Siemens will assume no responsibility.**

**Disposal**




The device is considered electrical and electronic equipment for disposal in terms of the applicable European Directive and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.



<b>Environmental conditions</b>	Operation Climatic conditions Mounting location Temperature General Humidity (noncondensing)	IEC 60721-3-3 Class 3K5 Indoors (weather-protected) -5...<55 °C 5...95 % r.h.
	Transport Climatic conditions Temperature Humidity	IEC 60721-3-2 Class 2K3 -25...70 °C <95 % r.h.
	Storage Climatic conditions Temperature Humidity	IEC 60721-3-1 Class 1K3 -15...55 °C 5...95 % r.h.
	Max. media temperature when mounted on valve	130 °C Up to 150 °C with horizontal mounting position
<b>Directives and Standards</b>	Product standard Electromagnetic compatibility (Application)	EN 60730-x For residential, commercial and industrial environments CE1T4503xx <sup>1)</sup> CE1T4503_C1 <sup>1)</sup>
	EU Conformity (CE) RCM Conformity EAC Conformity	AC 230 V Eurasia Conformity for all SAV..
	UL, cUL AC 230 V AC / DC 24 V	- UL 873 <a href="http://ul.com/database">http://ul.com/database</a> . File number E35198
<b>Environmental compatibility</b>		The product environmental declaration 71 7331 0522 A <sup>1)</sup> contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).
<b>Dimensions</b>		See "Dimensions" (page 9)
<b>Accessories <sup>2)</sup></b>	Potentiometer ASZ7.5 Voltage Current rating	0...1000 Ω ± 5 % DC 10 V <4 mA
	Auxiliary switch ASC10.51 External supply line protection US Installation, UL & cUL	Switching capacity AC 24...230 V, 6 (2) A, floating See section power supply AC 24 V class 2, 5 A general purpose
	Stem heating element ASZ6.6 Power supply Power consumption Inrush current (cold)	AC/DC 24 V, ± 20% 40 VA / 30 W Max. 8,5 A (max. temperature 85 °C / 185 F)

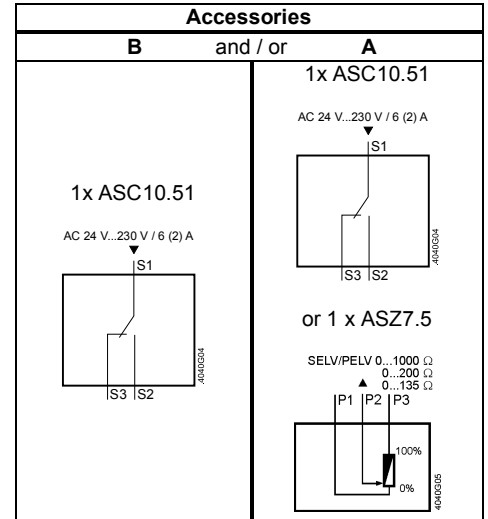
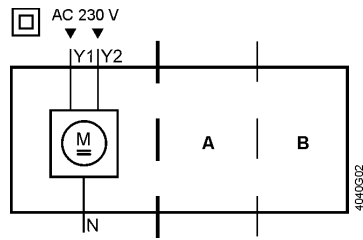
<sup>1)</sup> The documents can be downloaded from <http://siemens.com/bt/download>.

<sup>2)</sup> UL recognized component 

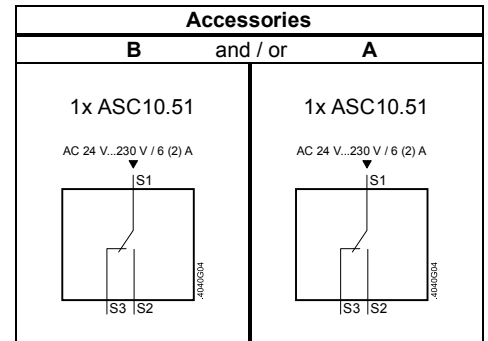
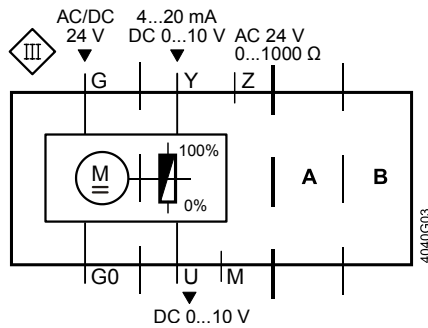
## Connection Diagrams

### Internal Diagrams

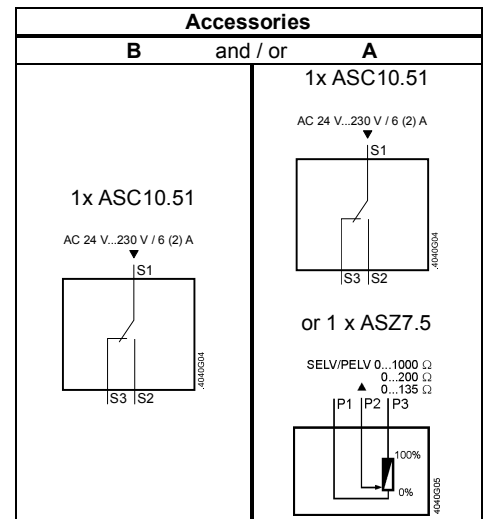
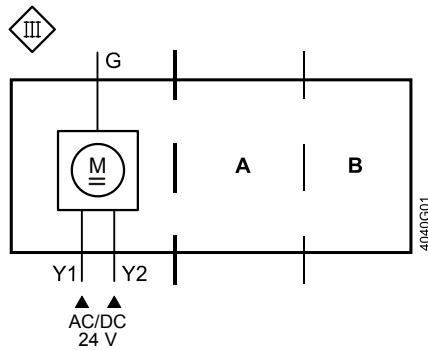
SAV31..



SAV61..



SAV81..



**Connection terminals**

SAV31..

AC 230 V, 3-position

- N** — Sytem neutral (SN)
- Y1** — Positioning signal (actuator's stem extends)
- Y2** — Positioning signal (actuator's stem retracts)

SAV61..

AC/DC 24 V, DC 0...10 V / 4...20 mA / 0...1000 Ω

- G0** — Sytem neutral (SN)
- G** — Sytem potential (SP)
- Y** — Positioning signal for DC 0...10 V / 4...20 mA
- M** — Measuring neutral
- U** — Position feedback DC 0...10 V - (reference potential is M measuring neutral)
- Z** — Positioning signal forced control

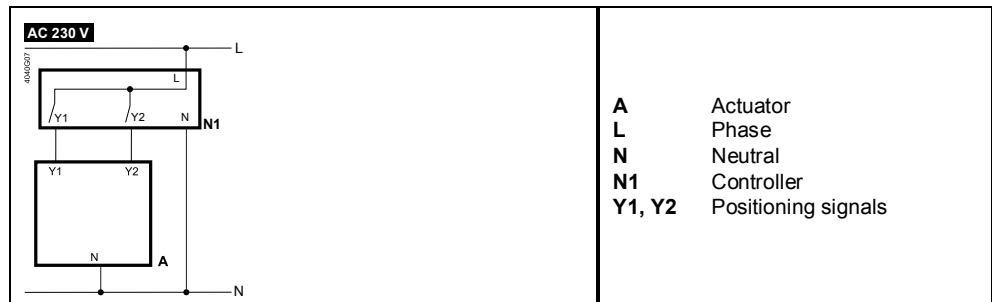
SAV81..

AC/DC 24 V, 3-position

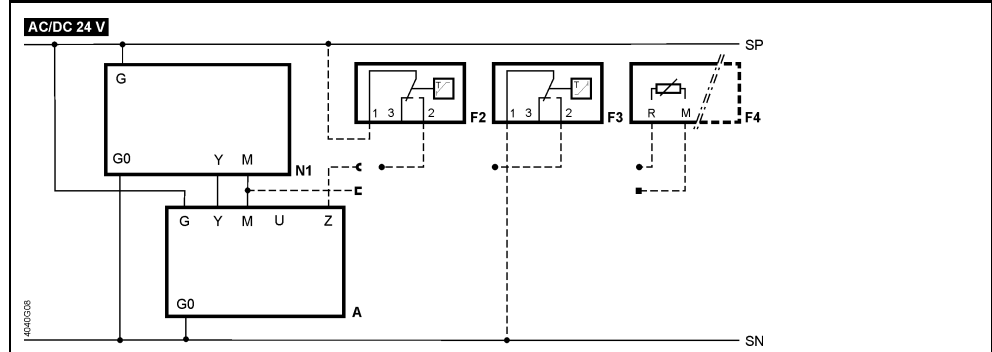
- G** — Sytem potential (SP)
- Y1** — Positioning signal (actuator's stem extends)
- Y2** — Positioning signal (actuator's stem retracts)

**Connection Diagrams**

SAV31..

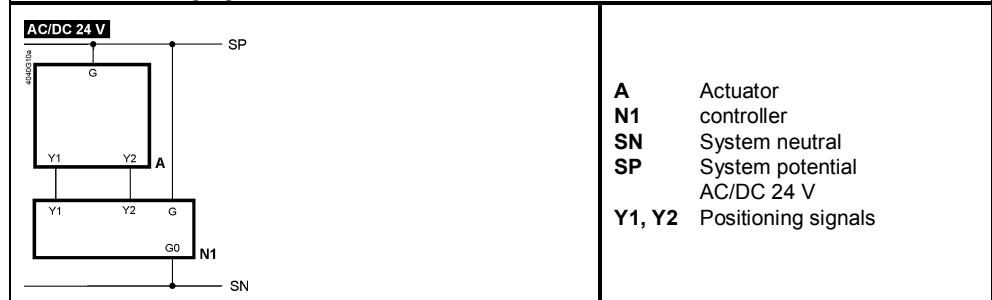


SAV61..



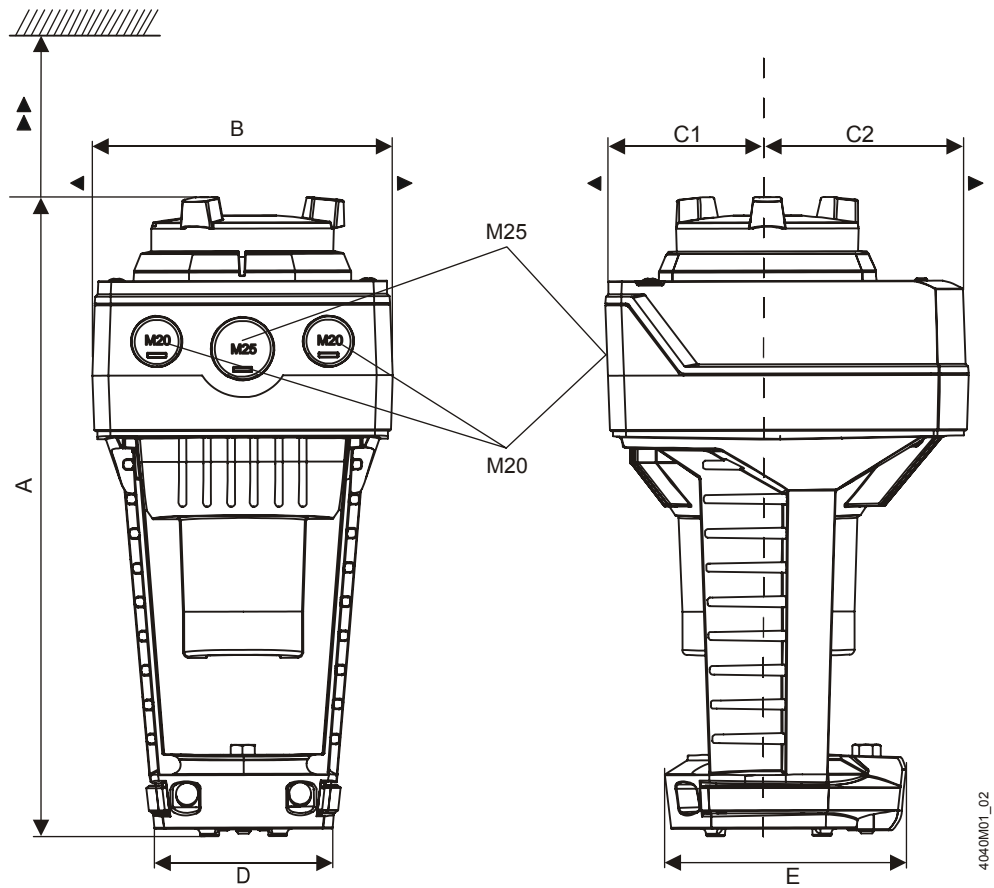
- A** Actuator
- F2** Frost protection thermostat; terminals:  
1 – 2 frost hazard / sensor is interrupted (thermostat closes with frost)  
1 – 3 normal operation
- F3** Temperature detector
- F4** Frost protection monitor with 0...1000 Ω signal output, does NOT support QAF21.. or QAF61..
- M** Measuring neutral
- N1** Controller
- SN** System neutral
- SP** System potential AC/DC 24 V
- U** Position feedback - (reference potential is M measuring neutral)
- Y** Position signal
- Z** Positioning signal forced control

SAV81..





## Dimensions



4040M01\_02

Product no.	A	B	C	C1	C2	D	E	▶	▶▶	kg
<b>SAV..(U<sup>1)</sup>)</b>	265	124	150	68	82	80	100	100	200	1.920
<b>With ASK39.1</b>	+25	154	300	200	100	-	-	-	-	2.150

Dimensions in mm

<sup>1)</sup> SAV..U: For 1/2" tube connections (21.5 mm dia.)

## Revision numbers

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Product no.	Valid from rev. no.
SAV31.00	..B
SAV61.00	..B
SAV61.00U	..B
SAV81.00	..B
SAV81.00U	..B

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