



ACVATIX™

## Electromotoric actuators for **SAX..P..Y** valves

with a 20 mm stroke

- 
- **SAX31P03Y** Operating voltage AC 230 V, 3-position control signal
  - **SAX61P03Y** Operating voltage AC/DC 24 V, control signal DC 0...10 V, 4...20 mA
  - **SAX81P03Y** Operating voltage AC/DC 24 V, 3-position control signal
  - **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

---

Electromotoric actuators for the operation of Siemens combi valves of types VPF43.. and VPF53.. with 20 mm stroke as control and safety shut-off valves in ventilation, air conditioning, district heating and refrigerating systems.

## Type summary

Product no.	Stock no.	Stroke	Pos. force	Operating voltage	Positioning signal	Spr. ret. time	Pos. time	LED	Manual adjuster	Extra functions
SAX31P03Y	S55150-A118-A998	20 mm	500 N	AC 230 V	3-position	-	30 s	-	Push and fix	1)
SAX61P03Y	S55150-A114-A998			AC/DC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ω			✓		2), 3)
SAX81P03Y	S55150-A116-A998			3-position	-			1)		

1) Optional accessories: auxiliary switch, potentiometer

2) Position feedback, forced control, change of characteristic

3) Optional accessories: auxiliary switch, sequence control, selection of acting direction

## Electrical accessories

Product no.	Auxiliary switch ASC10.51	Potentiometer ASZ7.5
Stock no.	S55845-Z103	S55845-Z106
	Max. 2	
SAX31P..	Max. 2	Max. 1
SAX61P..	Max. 2	-
SAX81P..		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.

## Mechanical Accessory

Weather shield ASK39.1

## Ordering

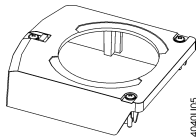

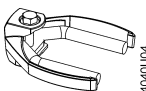
### Example

Product no.	Stock no.	Description	Quantity
SAX81P03Y	S55150-A116-A998	Actuator	1
ASZ7.5	S55845-Z106	Potentiometer	1

### Delivery

Actuators, valves and accessories are supplied in individual packs.

### Spare parts

Product number / Stock number	Description	Image
8000060843	Housing cover	
	Screw (valve stem coupling)	
	U-bracket	

## Combinations

VPF43..	Type	Stock no.	DN	H <sub>100</sub> [mm]	$\dot{V}_{min}$ [m <sup>3</sup> /h]	$\dot{V}_{100}$ [m <sup>3</sup> /h]	$\Delta p_{min}$ [kPa]	Data sheet
Standard flow	VPF43.50F16	S55266-V100	50	20	2.3	15	35	N4315
	VPF43.65F24	S55266-V102	65		4.4	25		
	VPF43.80F35	S55266-V104	80		5.3	34		
High flow	VPF43.50F25	S55266-V101	50	20	4.3	25	70	
	VPF43.65F35	S55266-V103	65		6	35		
	VPF43.80F45	S55266-V105	80		7	43		

VPF53..	Type	Stock no.	DN	H <sub>100</sub> [mm]	$\dot{V}_{min}$ [m <sup>3</sup> /h]	$\dot{V}_{100}$ [m <sup>3</sup> /h]	$\Delta p_{min}$ [kPa]	Data sheet
Standard flow	VPF53.50F16	S55266-V112	50	20	2.3	15	35	N4316
	VPF53.65F24	S55266-V114	65		4.4	25		
	VPF53.80F35	S55266-V116	80		5.3	34		
High flow	VPF53.50F25	S55266-V113	50	20	4.3	25	70	
	VPF53.65F35	S55266-V115	65		6	35		
	VPF53.80F45	S55266-V117	80		7	43		

## Product documentation

Detailed Informations about the New Generation actuators can be found in the Basic documentation for actuators (P4040).

## Notes

### Engineering

SAX31P03Y and  
SAX81P03Y

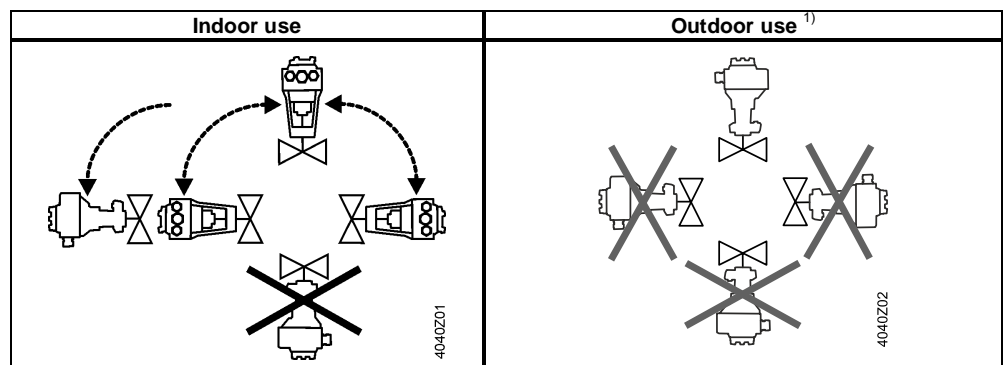
3-position actuators must have their own specific controller, refer to "Connection Diagrams" (page 8).

SAX61P03Y

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 k $\Omega$ .

### Mounting

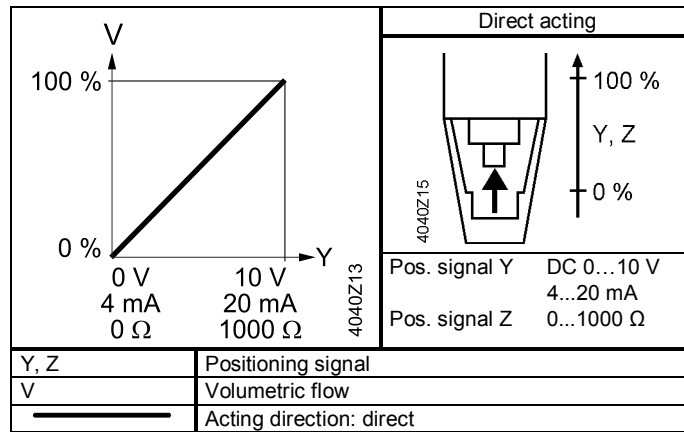
Mounting positions



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

### Acting direction

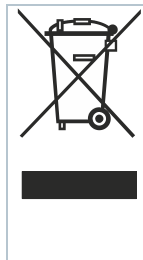
With valves whose stem is retracted in the fully closed position, "direct acting" means that the valve is fully closed (100 %) when positioning signal Y = 0 V and Z = 0  $\Omega$  respectively.



**Maintenance**

The actuators are maintenance-free.

**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.

**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.**

## Technical Data

		SAX..P
<b>Power supply</b>	Operating voltage SAX31P03Y SAX61P03Y SAX81P03Y	AC 230 V ±15% AC 24 V ± 20% / DC 24 V + 20% / -15% AC 24 V ±20% / DC 24 V + 20 % / -15%
	Frequency	45...65Hz
	Fusing ac. DIN 57100 part 430 (supply lines)	6 A... 10 A slow
	Power consumption at 50 Hz SAX31P03Y Stem retracts / extends SAX61P03Y Stem retracts / extends SAX81P03Y Stem retracts / extends	8 VA / 3.5 W 8 VA / 3.75 W 8 VA / 3.75 W
<b>Function data</b>	Positioning times (with the specified nominal stroke) The positioning time can vary, depending on the type of valve -> refer chapter "Type summary" (page 2) SAX31P03Y, SAX61P03Y, SAX81P03Y	30 s
	Positioning force Nominal stroke Permissible medium temperature (valve fitted)	500 N 20 mm 1...100 °C
<b>Signal inputs</b>	Positioning signal "Y" SAX31P03Y, SAX81P03Y SAX31P.. Voltage SAX81P.. Voltage SAX61P03Y (DC 0...10 V) Current draw SAX61P03Y (DC 4...20 mA) Current draw	3-position AC 230 V ±15% AC 24 V ± 20 % / DC 24 V + 20 % / -15% ≤ 0.1 mA ≥ 100 kΩ DC 4...20 mA ± 1% ≤ 500 Ω
	Input impedance	≥ 100 kΩ
<b>Parallel operation</b>	SAX61P03Y	≤ 10 (depending on controller output)
<b>Forced control</b>	Positioning signal "Z" SAX61P03Y R = 0...1000 Ω Z connected to G Z connected to G0 Voltage Current draw	R = 0...1000 Ω, G, G0 Stroke proportional to R Max. stroke 100% <sup>1)</sup> Min. stroke 0% <sup>1)</sup> Max. AC 24 V ± 20% Max. DC 24 V + 20% / -15% ≤ 0.1 mA
	Position feedback U SAX61P03Y Load impedance Load	DC 0...10 V > 10 kΩ res. Max. 1 mA
<b>Connecting cable</b>	Wire cross-sectional areas	0.75...1.5 mm <sup>2</sup> , AWG 20...16 <sup>2)</sup>
	Cable entries SAX..P..Y	EU: 2 entries Ø 20.5 mm (for M20) 1 entry Ø 25.5 mm (for M25)
<b>Degree of protection</b>	Housing from vertical to horizontal	IP54 as per EN 60529 <sup>3)</sup>
	Insulation class Actuators SAX31P03Y AC 230 V Actuators SAX61P03Y AC / DC 24 V Actuators SAX81P03Y AC / DC 24 V	As per EN 60730 II III III
	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.
<b>Environmental conditions</b>	Transport Climatic conditions Temperature Humidity	IEC 60721-3-2 Class 2K3 -25...70 °C <95% r.h.
	Storage Temperature Humidity	IEC 60721-3-1 -15...55 °C 5...95% r.h.
	Max. media temperatur when mounted on valve	100 °C
	<b>Standards</b>	
<b>Standards</b>	CE conformity As per EMC directive Immunity Emmissions	2004/108/EC EN 61000-6-2:[2005] Industrial <sup>4)</sup> EN 61000-6-3:[2007] Residential
	Electrical safety	EN 60730-1
	Low-voltage directive AC 230 V C-tick	2006/95/EC N 474
	UL conformity AC 230 V AC/DC 24 V	- UL 873
	<b>Environmental compatibility</b>	ISO 14001 (environment) ISO 9001 (quality) SN 36350 (environment-compatible products) RL 2002/95/EG (RoHS)
<b>Dimensions</b>		See "Dimensions" (page 9)

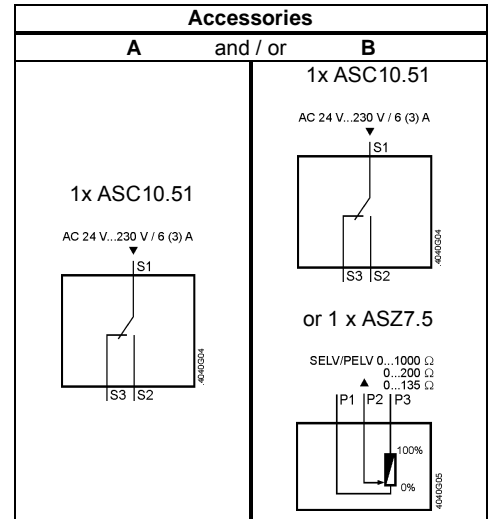
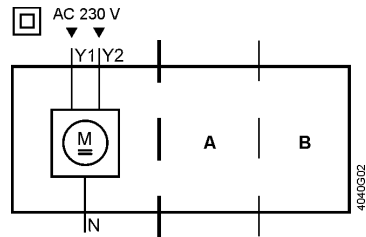
		<b>SAX..P</b>
<b>Accessories</b>	Potentiometer ASZ7.5	0...1000 Ω ± 5%
		Voltage DC 10 V
	Auxiliary switch ASC10.51	Current rating <4 mA
		Switching capacity AC 24...230 V, 6 A res., 3 A ind.

- 1) Observe acting direction of DIL switches
- 2) AWG = American wire gauge
- 3) Also with weather shield ASK39.1
- 4) Transformer 160 VA (e.g. Siemens 4AM 3842-4TN00-0EA0) for actuators operating on AC 24 V

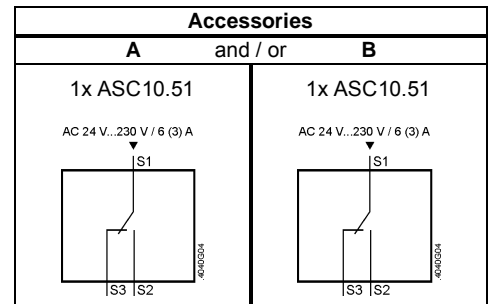
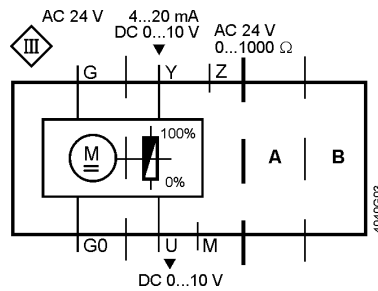
## Connection Diagrams

### Internal Diagrams

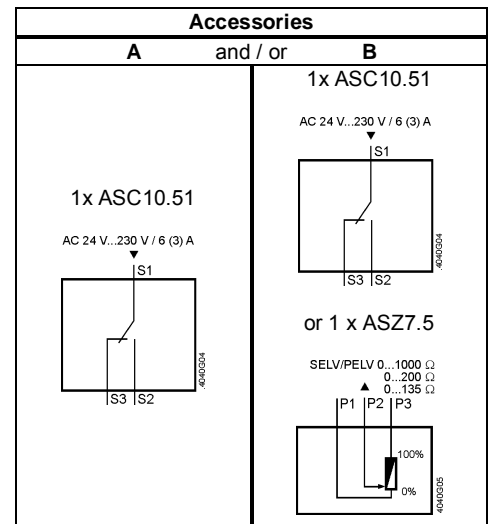
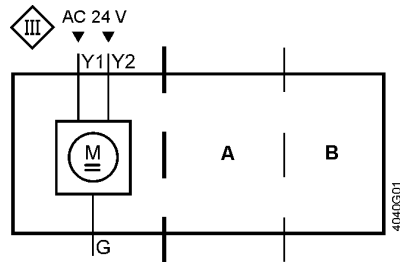
SAX31P03Y



SAX61P03Y



SAX81P03Y



**Connection terminals**

SAX31P03Y

AC 230 V, 3-position

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

SAX61P03Y

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

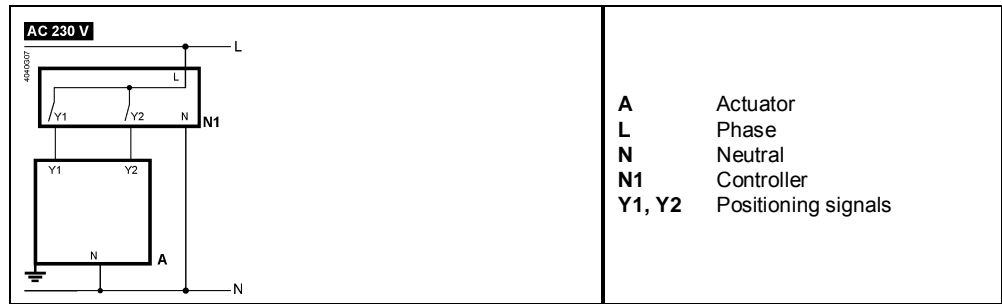
- G0** — System neutral (SN)
- G** — System potential (SP)
- Y** — Positioning signal for DC 0...10 V / 4...20 mA
- M** — Measuring neutral
- U** — Position feedback DC 0...10 V
- Z** — Positioning signal forced control

SAX81P03Y

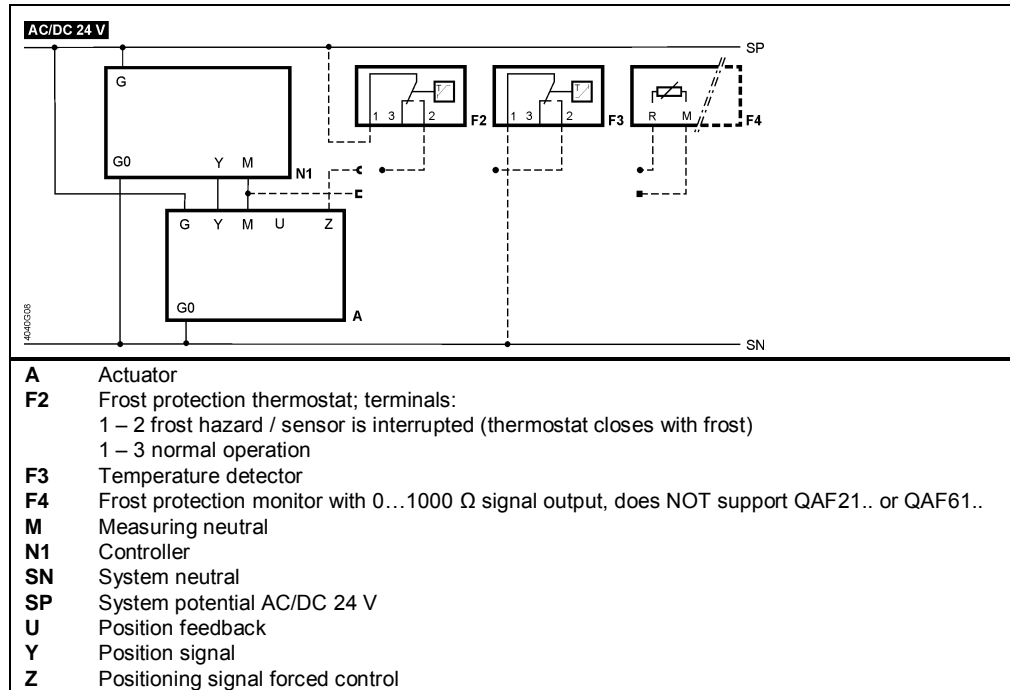
AC/DC 24 V, 3-position

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

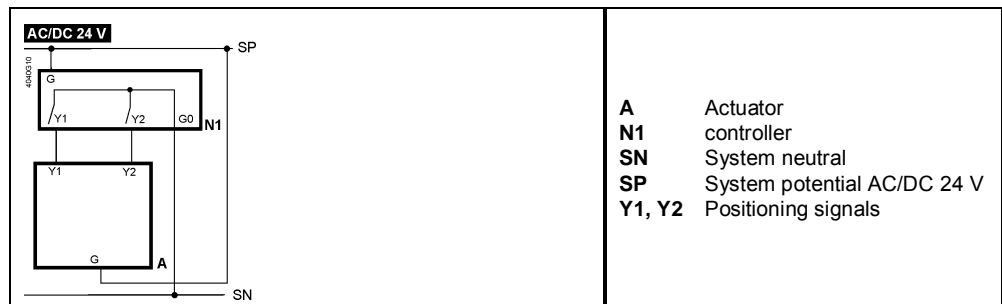
**Connection Diagrams**  
SAX31P03Y



SAX61P03Y

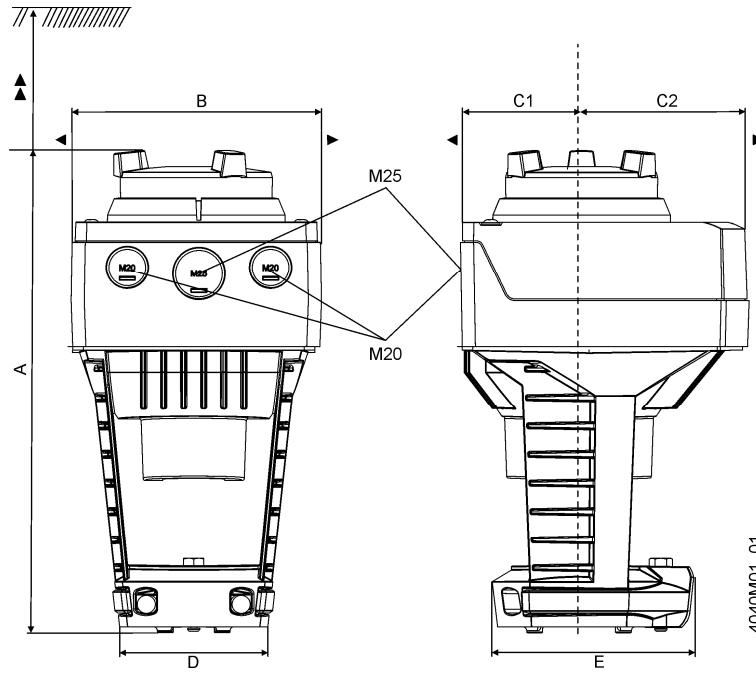


SAX81P03Y





## Dimensions



Type	A	B	C	C1	C2	D	E	▶	▶▶	kg
<b>SAX..P..Y</b>	242	124	150	68	82	80	100	100	200	1.755
<b>With ASK39.1</b>	+25	154	300	200	100	-	-	-	-	1.990

Dimensions in mm

## Revision numbers

Product no.	Valid from rev. no.
<b>SAX31P03Y</b>	..E
<b>SAX61P03Y</b>	..E
<b>SAX81P03Y</b>	..E

Issued by  
Siemens Switzerland Ltd  
Building Technologies Division  
International Headquarters  
Theilerstrasse 1a  
6300 Zug  
Switzerland  
Tel. +41 58-724 24 24  
[www.siemens.com/buildingtechnologies](http://www.siemens.com/buildingtechnologies)

© Siemens Switzerland Ltd, 2013  
Technical specifications and availability subject to change without notice.