



ACVATIX™

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

with a 20 mm stroke

-
- **SAX31P03** Operating voltage AC 230 V, 3-position control signal
 - **SAX61P03** Operating voltage AC/DC 24 V, control signal DC 0...10 V, 4...20 mA
 - **SAX81P03** Operating voltage AC/DC 24 V, 3-position control signal
 - **SAX61P03** 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

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
SAX31P03	S55150-A118	20 mm	500 N	AC 230 V	3-position	-	30 s	-	Push and fix	1)
SAX61P03	S55150-A114			AC/DC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ω			✓		2), 3)
SAX81P03	S55150-A116			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/.. ¹⁾
Stock no.	S55845-Z103	S55845-Z104 (ASZ7.5/135) S55845-Z105 (ASZ7.5/200) S55845-Z106 (ASZ7.5/1000)
	Max. 2	
SAX31P..	Max. 2	Max. 1
SAX61P..	Max. 2	-
SAX81P..		Max. 1

¹⁾ Available with 135 Ω, 200 Ω or 1000 Ω

Mechanical Accessory Weather shield ASK39.1

Ordering

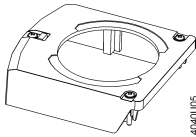

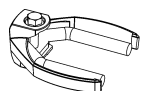
Example

Product no.	Stock no.	Description	Quantity
SAX81P03	S55150-A116	Actuator	1
ASZ7.5/1000	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 ₁₀₀ [mm]	\dot{V}_{\min} [m ³ /h]	\dot{V}_{100} [m ³ /h]	Δp_{\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 ₁₀₀ [mm]	\dot{V}_{\min} [m ³ /h]	\dot{V}_{100} [m ³ /h]	Δp_{\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

SAX31P03 and
SAX81P03

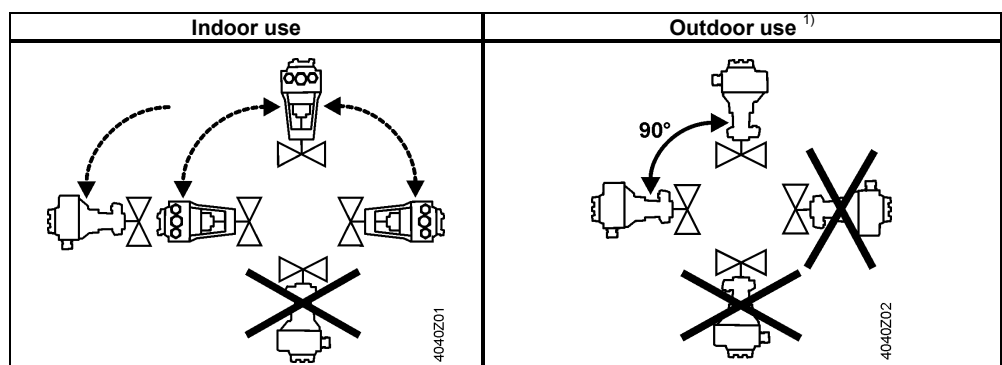
3-position actuators must have their own specific controller, refer to "Connection Diagrams" (page 8).

SAX61P03

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 Ω .

Mounting

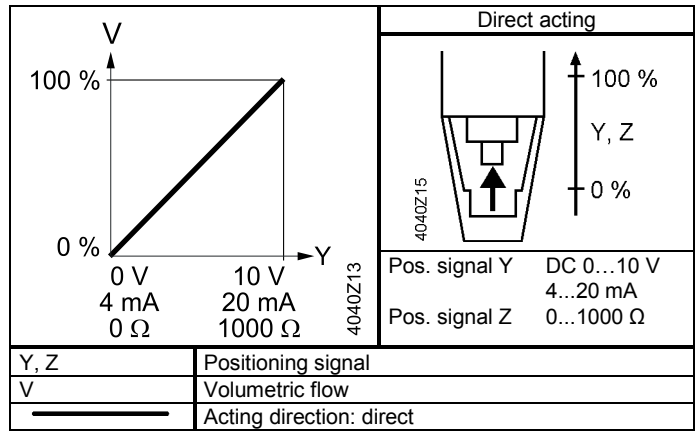
Mounting positions



¹⁾ 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 Ω respectively.



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.

Technical Data

		SAX..P
Power supply	Operating voltage SAX31P03 SAX61P03 SAX81P03	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	
	SAX31P03 Stem retracts / extends SAX61P03 Stem retracts / extends SAX81P03 Stem retracts / extends	6 VA / 3.5 W 8 VA / 3.75 W 5 VA / 3.75 W
Function data	Positioning times (with the specified nominal stroke) The positioning time can vary, depending on the type of valve -> refer chapter "Type summary" (page 2) SAX31P03, SAX61P03, SAX81P03	30 s
	Positioning force	500 N
	Nominal stroke	20 mm
	Permissible medium temperature (valve fitted)	1...130 °C
Signal inputs	Positioning signal "Y" SAX31P03, SAX81P03	3-position
	SAX31P.. Voltage	AC 230 V ±15%
	SAX81P.. Voltage	AC 24 V ± 20 % / DC 24 V + 20 % / -15%
	SAX61P03 (DC 0...10 V) Current draw Input impedance	≤ 0.1 mA ≥ 100 kΩ
Parallel operation	SAX61P03	≤ 10 (depending on controller output)
	Positioning signal "Z" SAX61P03 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% ¹⁾ Min. stroke 0% ¹⁾ Max. AC 24 V ± 20% Max. DC 24 V + 20% / -15% ≤ 0.1 mA
Position feedback	Position feedback U SAX61P03 Load impedance Load	DC 0...10 V ± 1% > 10 kΩ res. Max. 1 mA
Connecting cable	Wire cross-sectional areas	0.75...1.5 mm ² , AWG 20...16 ²⁾
	Cable entries SAX..P..	EU: 2 entries Ø 20.5 mm (for M20) 1 entry Ø 25.5 mm (for M25)
Degree of protection	Housing from vertical to horizontal	IP54 as per EN 60529 ³⁾
	Insulation class	As per EN 60730
	Actuators SAX31P03Y AC 230 V Actuators SAX61P03Y AC / DC 24 V Actuators SAX81P03Y AC / DC 24 V	II III III
Environmental conditions	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 -5...55 °C 5...95% r.h.
	Max. media temperatur when mounted on valve	130 °C
	Standards	CE conformity As per EMC directive Immunity Emissions
Standards	Electrical safety	EN 60730-1
	Low-voltage directive AC 230 V	2006/95/EC
	C-tick	N 474
	UL conformity AC 230 V AC/DC 24 V	- UL 873
Environmental compatibility		ISO 14001 (environment) ISO 9001 (quality) SN 36350 (environment-compatible products) RL 2002/95/EG (RoHS)
Dimensions		See "Dimensions" (page 9)

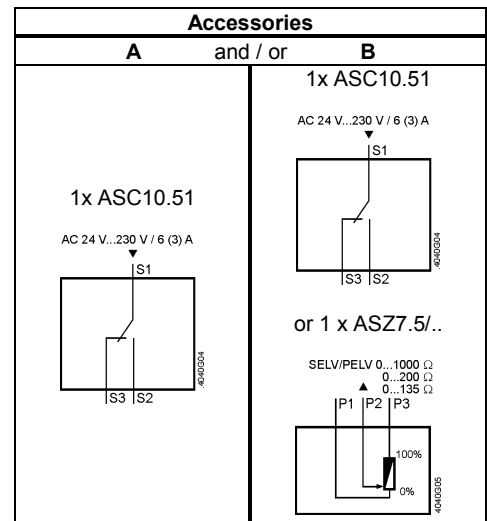
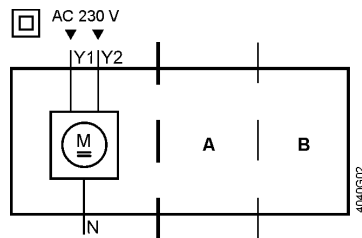
		SAX..P
Accessories	Potentiometer ASZ7.5/135	0...135 Ω ± 5% Voltage DC 10 V Current rating <4 mA
	Potentiometer ASZ7.5/200	0...200 Ω ± 5% Voltage DC 10 V Current rating <4 mA
	Potentiometer ASZ7.5/1000	0...1000 Ω ± 5% Voltage DC 10 V Current rating <4 mA
	Auxiliary switch ASC10.51	Switching capacity AC 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

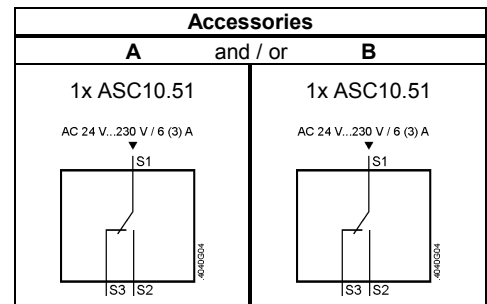
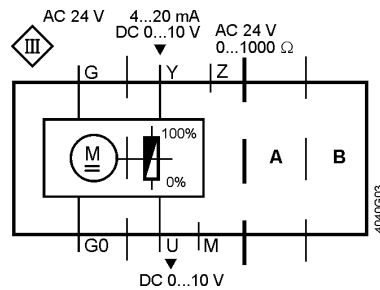
Connection Diagrams

Internal Diagrams

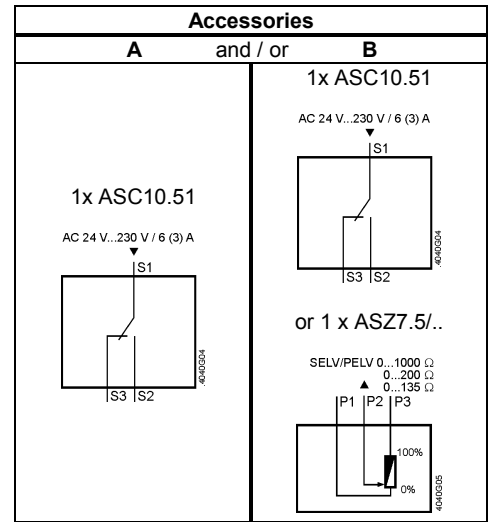
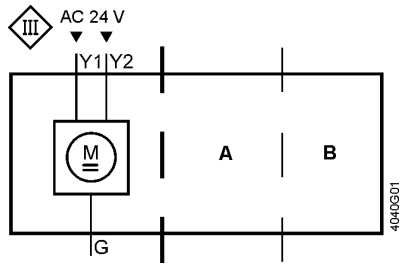
SAX31P03



SAX61P03



SAX81P03



Connection terminals

SAX31P03

AC 230 V, 3-position

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

SAX61P03

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

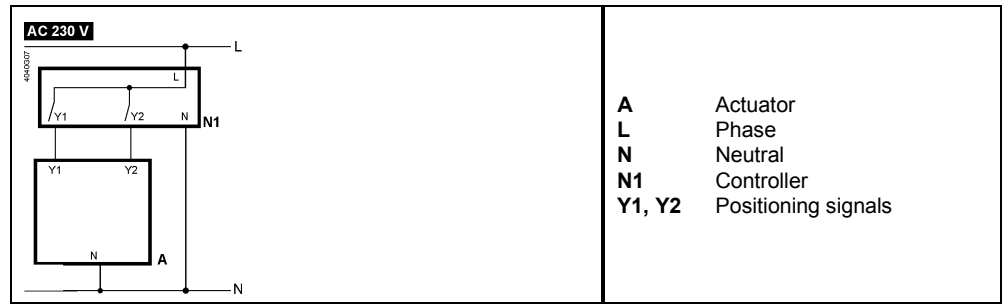
SAX81P03

AC/DC 24 V, 3-position

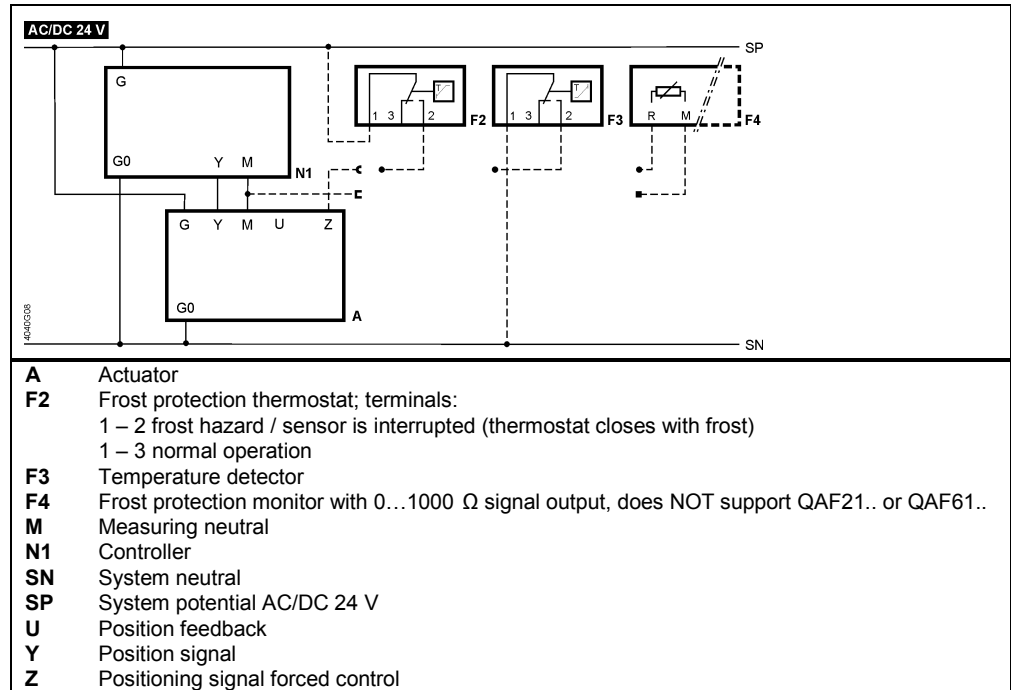
- G** — System potential (SP)
- Y1** — Positioning signal (actuator's stem retracts)
- Y2** — Positioning signal (actuator's stem extends)

Connection Diagrams

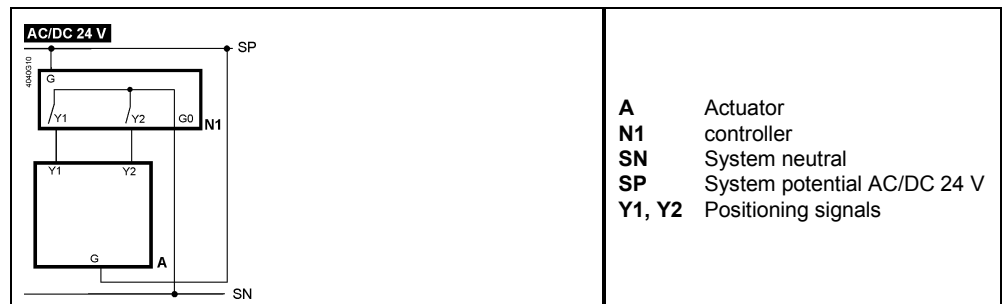
SAX31P03



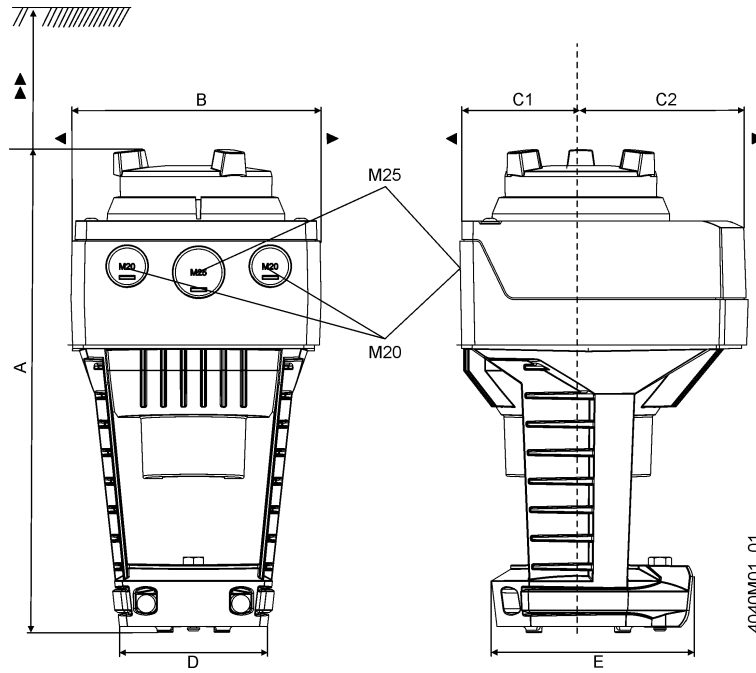
SAX61P03



SAX81P03



Dimensions



Type	A	B	C	C1	C2	D	E	▶	▶▶	kg
SAX..P..	242	124	150	68	82	80	100	100	200	1,850
With ASK39.1	+25	154	300	200	100	-	-	-	-	2,080

Dimensions in mm

Revision numbers

Product no.	Valid from rev. no.
SAX31P03	..G
SAX61P03	..G
SAX81P03	..G

