



ACVATIX™

Electromotoric rotary actuators **SAL..NS** for butterfly or slipper valves

with 90° rotary angle

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- **SAL31..NS** Operating voltage AC 230 V, 3-position control signal
 - For direct mounting on butterfly or slipper valves; no adjustments required
 - Manual adjuster, position indicator
 - Optional functions with auxiliary switches, potentiometer

Use

For the operation of Siemens butterfly and slipper valves, types VKF41.., VKF46.., and VBF21.. as control or shutoff valves in heating, ventilation and air conditioning systems.

Type summary

Product no.	Stock no.	Angular rotation	Torque	Operating voltage	Positioning signal	Positioning time	LED	Manual adjuster
SAL31.00T10NS	S55162-A108-A999	90°	10 Nm	AC 230 V	3-position	120 s	-	Push
SAL31.00T20NS	S55162-A110-A999		20 Nm					
SAL31.03T10NS	S55162-A109-A999		10 Nm					

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 in total		
SAL31..NS	Max. 2	Max. 1

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

Mechanical accessories

Product no.	Weather shield ASK39.1	Mounting set		NS
		ASK31N for VBF21..	ASK33N for VKF41..	
Stock no.	S55845-Z109	S55845-Z100	S55845-Z101	S55845-Z102
SAL..T10NS	Max. 1	✓	✓	-
SAL..T20NS	Max. 1	-	-	DN40 .. DN65

¹⁾ Type VKF45.. was replaced by type VKF46.. in the year 2000.

Product documentation

Detailed information about the New Generation actuators can be found in the basic documentation "Electromotoric actuators SAX..., SAL.." (CE1P4040en).

Ordering


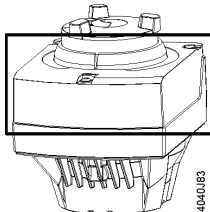


Example

Product no.	Stock no.	Description	Quantity
SAL31.00T10NS	S55162-A108-A999	Rotary actuator	1
ASZ7.5/1000	S55845-Z106	Potentiometer	1

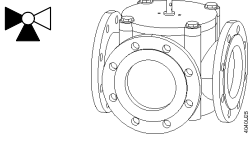
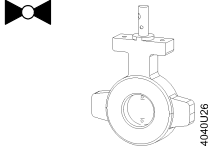
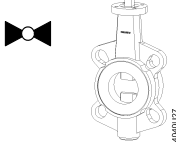
Delivery

Actuators, valves and accessories are supplied in individual packs.

Spare parts

Stock number 8000060844	Housing cover 	
	2 adapters  1 pc. 14 mm 1 pc. 11 mm	
	4 screws  2 pcs. M5 x 20 mm 2 pcs. M6 x 20 mm	

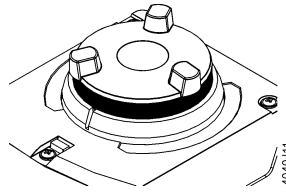
Combinations

SAL..					SAL..T10NS	SAL..T20NS	
					Angular rotation Torque		
					10 Nm	90 ° 20 Nm	
Slipper valves	Data Sheet	Valve type ¹	DN	k _{vs} [m ³ /h]	Mounting set		
PN6  1 °C...120 °C	N4241	VBF21.40	40	25	-	- ¹⁾	
		VBF21.50	50	40	-	- ¹⁾	
		VBF21.65	65	63	ASK31N	30	-
		VBF21.80	80	100	ASK31N		
		VBF21.100	100	160	ASK31N		
		VBF21.125	125	550	ASK31N		
		VBF21.150	150	820	ASK31N		
Butterfly valves							
PN16  -10 °C...120 °C	N4131	VKF41.40	40	50	ASK33N	500	
		VKF41.50	50	80	ASK33N		
		VKF41.65	65	200	ASK33N		
		VKF41.80	80	400	ASK33N		
		VKF41.100	100	760	ASK33N		
		VKF41.125	125	1'000	ASK33N	300	-
		VKF41.150	150	2'100	ASK33N	250	
		VKF41.200	200	4'000	ASK33N	125	
PN16  -10 °C...120 °C	N4136	VKF46.40	40	50	-	-	
		VKF46.50	50	85	-		
		VKF46.65	65	215	-		
		VKF46.80	80	420	-		
		VKF46.100	100	800	-		
		VKF46.125	125	1'010	-		

1) SAL..T10 rotary actuators only fit on VBF21.., DN65...150. For VBF21.., DN40/50 use SQK34.., SQK84.. (data sheet N4508) or SQK33.00 (data sheet N4506) rotary actuators.

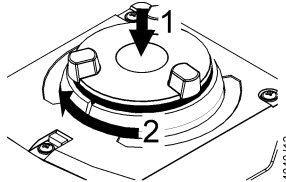
Manual adjuster

Automatic



When the motor drives the manual adjuster turns. Thus in automatic mode, the manual adjuster is used for indication of travel. If the manual adjuster is held firm in this mode, there is no transmission of power to the gear train.

Manual operation



When pushing the manual adjuster down (1), it engages and the actuator can be manually operated.

Stroke actuator: When turning the manual adjuster in clockwise / counterclockwise direction (2), the actuator's stem retracts / extends.

Rotary actuator: The actuator spindle turns in the same direction

An overload protection prevents damage to the manual adjuster.

Fixing the position

It's not possible to fix the actuator in manual position.

After adjustment the manual adjuster will return into automatic mode position

After 5 seconds if power is applied the actuator follows the active positioning signal.

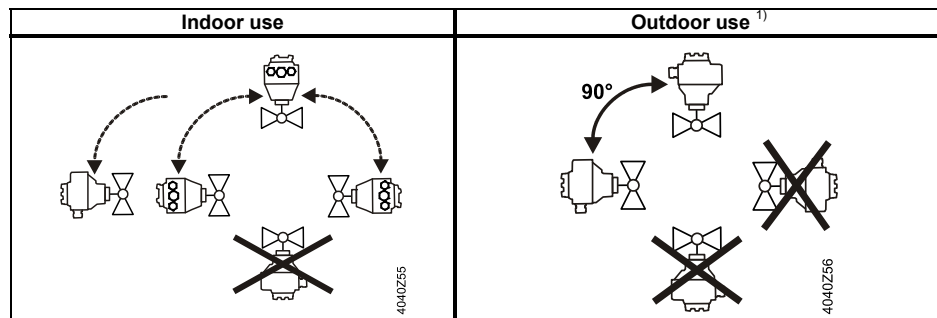
Notes

Engineering

SAL 31... ..

3-position actuators must have their own specific controller, refer to "Connection Diagrams" (page 6).

Mounting



¹⁾ Only in connection with weather shield ASK39.1

Maintenance

The rotary 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 slipper valves of other manufacture, correct functioning must be ensured by the user, and Siemens will assume no responsibility. The use of the rotary actuators SAL..T10 with butterfly valves is only permitted for the Siemens Series VKF41..

Technical Data

		SAL..
Power supply	Operating voltage SA..31..	AC 230 V ±15%
	Frequency	45...65Hz
	Fusing ac. DIN 57 100 part 430 (supply lines)	6 A .. 10 A slow
	Power consumption at 50 Hz SAL31.00T10NS Rotary actuator turns SAL31.00T20NS Rotary actuator turns SAL31.03T10NS Rotary actuator turns	3.5 VA / 2 W 4.1 VA / 2.6 W 6.5 VA / 2.75 W
Function data	Positioning times (with spec. nominal angular rotation) SAL31.00..NS SAL31.03T10NS	120 s 30 s
	Torque SAL..T10 SAL..T20	10 Nm 20 Nm
	Rotary angle	90°
	Permissible medium temperature (valve fitted)	-10...120 °C
Signal inputs	Positioning signal "Y" SAL31.. SAL3.. Voltage	3-position AC 230 V ±15%
Connecting cable	Wire cross-sectional areas	0.75...1.5 mm ² , AWG 20...16 ²⁾
Connecting cable	Cable entries	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 SAL31.. AC 230 V	As per EN 60730 II
Environmental conditions	Operation Climatic conditions Mounting location Temperature Humidity (noncondensing)	IEC 60721-3-3 Class 3K5 Indoors (weather-protected) -15...55 °C 5...95 % r.h.
	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 temperature when mounted on valve	120 °C
Standards	CE conformity As per EMC directive Immunity Emissions	2004/108/EC EN 61000-6-2:[2005] Industrial ⁴⁾ 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
Environmental compatibility	-	ISO 14001 (environment) ISO 9001 (quality) SN 36350 (environment-compatible products) RL 2002/95/EG (RoHS)
Dimensions	-	See "Dimensions" (page 7)
Weight	Excl. packaging	See "Dimensions" (page 7)
Accessories	Potentiometer ASZ7.5/135 Voltage Current rating	0...135 Ω ± 5% DC 10 V <4 mA
	Potentiometer ASZ7.5/200 Voltage Current rating	0...200 Ω ± 5% DC 10 V <4 mA
	Potentiometer ASZ7.5/1000 Voltage Current rating	0...1000 Ω ± 5% DC 10 V <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

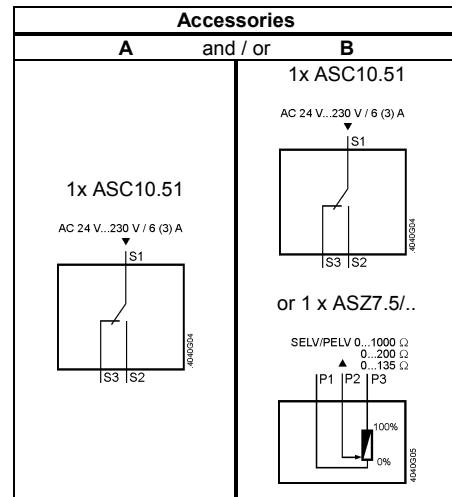
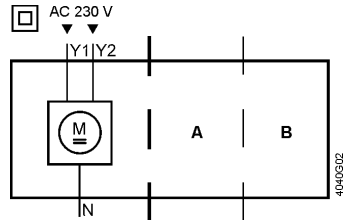
³⁾ Also with weather shield ASK39.1

⁴⁾ Transformer 160 VA (e.g. Siemens 4AM 3842-4TN00-0EA0) for actuators operating on AC 24 V

Connection Diagrams

Internal Diagrams

SAL31...NS



Connection terminals

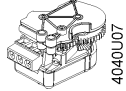
SAL31..

AC 230 V, 3-position

- N** System neutral (SN)
- Y1** Positioning signal (actuator's spindle turns clockwise)
- Y2** Positioning signal (actuator's spindle turns counter-clockwise)

Connection terminals accessories

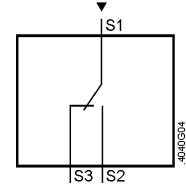
Auxiliary switch
ASC10.51



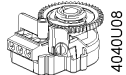
Adjustable switching points, AC 24...230 V

- 1** System potential (SP)
- 2** Closing (actuator's spindle turns clockwise)
- 3** Opening (actuator's spindle turns clockwise)

AC 24 V...230 V / 6 (3) A



Potentiometer
ASZ7.5/..

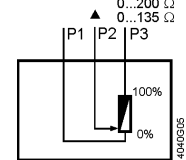


Adjustment of zero point, DC 10 V

- 1** Measuring neutral
- 2** 0...x Ω
- 3** x...0 Ω

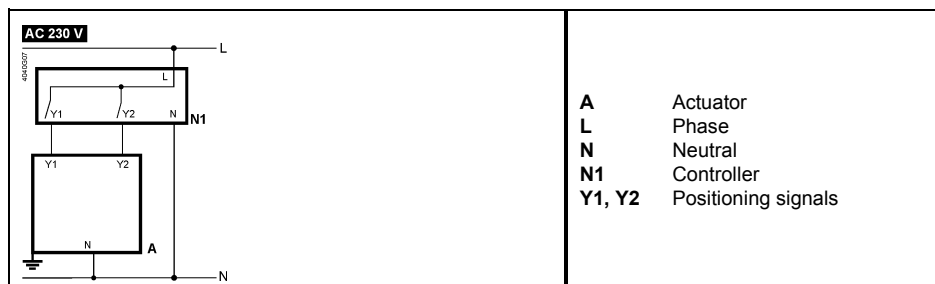
x = 135 Ω, 200 Ω; 1000 Ω

SELV/PELV 0...1000 Ω
0...200 Ω
0...135 Ω



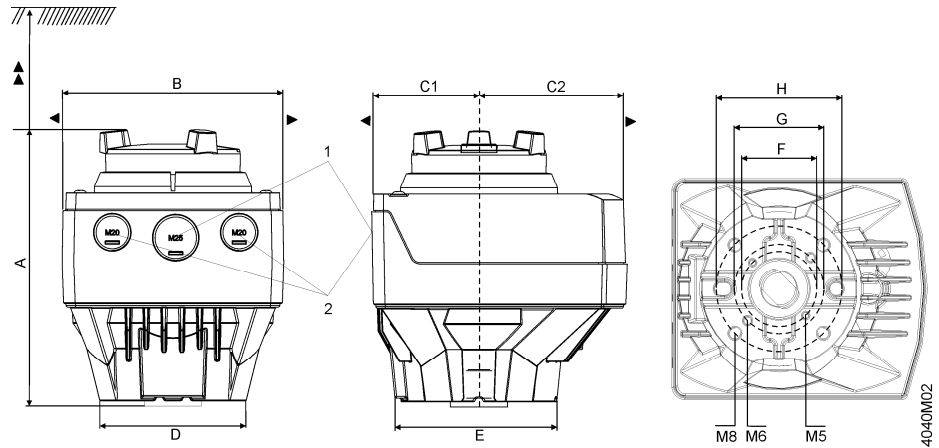
Connection Diagrams

SAL31..



Dimensions

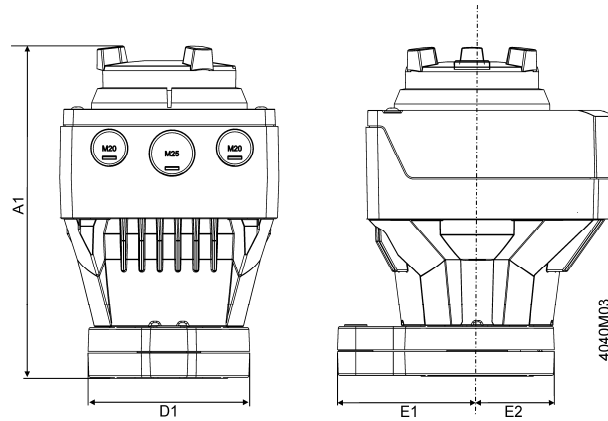
Dimensions in mm



- 1 SAL...: M25
- 2 SAL...: M20

Type	A	B	C	C1	C2	D	E	F	G	H	▶	▶▶
SAL..	160	124	150	68	82	82	88	42	50	70	100	200
With ASK39.1	+25	154	300	200	100	-	-	-	-	-	-	-

With mounting set ASK3..N



Type	A1	D1	E1	E2
SAL.. with ASK3..N	188	88	80	44
With ASK39.1	+25	-	-	-

Revision numbers

Product no.	Valid from rev. no.
SAL31.00T10NS	..D
SAL31.00T20NS	..C
SAL31.03T10NS	..D

