

ACVATIX™

## Electromotive actuators in combination with the Intelligent Valve Controller

SAX61.03/HR, SAV61.00/HR



**Electromotive actuator to operate Siemens 2-port and 3-port valves, types VVF42..K, VVF42..KC und VXF42.. with 20/40 mm stroke, as control and safety shutoff valves on heating, ventilation, and air conditioning plants.**

- Operating voltage AC/DC 24 V, positioning signal 0...10 V with feedback
- For direct mounting on valves; no adjustments required
- Manual adjuster, position and status indication (LED)
- Optional stem heating function available

## Use

Electromotive actuator to operate Siemens 2-port and 3-port valves, types VVF42..K, VVF42..KC und VXF42.. with 20 or 40 mm stroke, as control and safety shutoff valves on heating, ventilation, and air conditioning plants, together with the Intelligent Valve Controller.

## Type summary

Type	Stock number	Stroke	Pos. force	Operating voltage	Pos. signal	Pos. time	LED	Manual adjuster <sup>1)</sup>	Extra functions
SAX61.03/HR	S55150-A142	20 mm	800 N	AC / DC 24 V	DC 0...10 V	30 s	✓	Push and fix	Position feedback
SAV61.00/HR	S55150-A146	40 mm	1600 N			120 s			

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

## Accessories

### Electrical accessories

Type	Stock number	Designation	No.
ASZ6.6	S55845-Z108	Stem heating element	Max. 1

### Ordering – Service replacement only


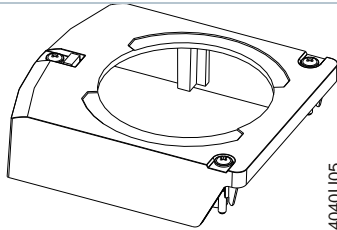

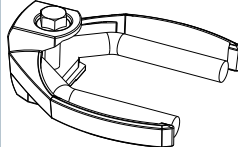
Type	Stock number	Designation	Number of pieces
SAX61.03/HR	S55150-A142	Actuator	1
ASZ6.6	S55845-Z108	Stem heating element	1

*Example*

### Scope of delivery

Actuators, valves and accessories are supplied in individual packs.

### Spare parts

<b>Product number</b>  <b>Stock number</b> 8000060843	<b>Housing cover</b>  4040U05	<b>Screw (Valve spindle coupler)</b>  4040U22
		<b>U-bracket</b>  4040U04

## Equipment combinations

Valve type	DN		PN class	k <sub>vs</sub> [m <sup>3</sup> /h]		Data sheet	
	SAX..	SAV..		SAX..	SAV..		
<b>2-port valves VV.. (control or safety shutoff valves)</b>							
VVF42..K	Flange	65...80	100...150	16	63...100	160...315	
VVF42..KC							N4403 A6V10794157
<b>3-port valve VX.. (Control valves for functions "mixing" and "distribution")</b>							
VXF42..	Flange	65...80	100...150	16	50...100	160...400	N4403

## Product documentation



Title	Contents	Document ID
Actuators SAX..., SAY..., SAV..., SAL.. for valves	Basic documentation: Comprehensive information on the new generation of SAX actuators.	P4040
Electromotive actuators in combination with the Intelligent Valve Controller	Data sheet: Product description: SAX61.03/HR, SAV61.00/HR	A6V11418660

Related documents such as environmental declarations, CE declarations, etc., can be downloaded at the following Internet address:

<http://siemens.com/bt/download>

## Notes

## Safety

	<b>⚠ DANGER</b>
	<p><b>Risk of injury caused by hot actuator</b></p> <p>Hot media flowing through the valve heats up the metal connecting elements on the actuator.</p> <ul style="list-style-type: none"> <li>Do not touch hot surfaces.</li> </ul>
	<b>⚠ CAUTION</b>
	<p><b>National safety regulations</b></p> <p>Failure to comply with national safety regulations may result in personal injury and property damage.</p> <ul style="list-style-type: none"> <li>Observe national provisions and comply with the appropriate safety regulations.</li> </ul>

## Engineering

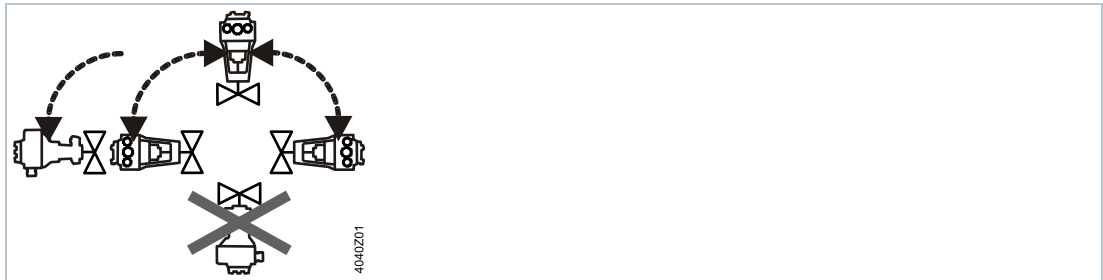
The actuator is factory configured for equal-percentage characteristic.  
SAX61.03/HR and SAV61.00/HR does **not** support the following functions:

- Choice of flow characteristic
- Positioning signal 4...20 mA

Function module AZX61.1 cannot be used!

## Mounting

### Mounting positions



## Maintenance

The actuator is maintenance-free.

## Disposal



The device is considered an electronic device for disposal in accordance with the European Guidelines 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

Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

## Technical data

Power	SAX61.03/HR	SAV.61.00/HR
Operating voltage:	AC 24 V $\pm$ 20 % / DC 24 V +20 % / -15 % (SELV)	
External supply line fusing (EU)	Fuse slow 6...10 A	
	Circuit breaker: Max. 13 A, type B, C, D per EN 60898	
	Power source with current limitation of max. 10 A	
Power consumption at 50 Hz: Stem retracts/extends	8 VA / 3.75 W	10 VA / 4.5 W

Operating data	SAX61.03/HR	SAV.61.00/HR
Positioning times (with the specified nominal stroke)	30 s	120 s
Positioning force	800 N	1600 N
Nominal stroke	20 mm	40 mm
Working stroke range at which the actuator is calibrated	9...22 mm	-
Permissible media temperature (valve fitted)	-25...130 °C	

Signal inputs	
Positioning signal "Y"	DC 0...10 V
Power consumption	$\leq$ 0.1 mA
Input impedance	$\geq$ 100 k $\Omega$
Resolution	<60 mV
Hysteresis	<100 mV

Forced control	
Z positioning signal	
R = 0...1000 $\Omega$	Stroke proportional to R
Z connected to G	Max. stroke 100%
Z connected to G0	Min. stroke 0%
Voltage	Max. AC 24 V $\pm$ 20 %
	Max. DC 24 V +20 % / -15%
Power consumption	$\leq$ 0.1 mA

Position feedback	
Position feedback U	DC 0...10 V
Load impedance	> 10 k $\Omega$ resistive
Load	Max. 1 mA

Connection cables	
Wire cross-sectional areas	0.13...1,5 mm <sup>2</sup> , AWG <sup>1)</sup> 24...16
Cable entries	Fixed connection cable
	Number of cores
Permissible length for signal wires	10 m

Protection class	
Housing protective class from vertical to horizontal (see 'Mounting', page 4)	IP 54 as per EN 60529
Insulation class	As per EN 60730
AC / DC 24 V	III

Ambient conditions	
Climatic ambient conditions	
Operation as per IEC 60721-3-3	Class 3K5
Mounting location	Interior, weather-protected
Temperature (general)	-5...<55 °C
Humidity (non-condensing)	5...95 % r.h.
Transport per IEC 60721-3-2	Class 2K3
Temperature	-25...70 °C
Humidity	<95 % r.h.
Storage per IEC 60721-3-1	Class 1K3
Temperature	-15...55 °C
Humidity	<95 % r.h.
Max. media temperature when mounted on valve	130 °C

Directives and standards	SAX61.03/HR	SAV.61.00/HR
Product standard	EN 60730-x	
Electromagnetic compatibility (field of use)	For residential, commercial, and industrial environments	
EU conformity (CE)	CE1T4501X1 <sup>2)</sup>	CE1T4503 <sup>2)</sup>
RCM conformity	CE1T4515X4 <sup>2)</sup>	8000078495 <sup>2)</sup>
EAC compliance	Eurasien Konformität für alle SAX..	Eurasien Konformität für alle SAV..


Environmental compatibility
The product environmental declarations 7173310522A <sup>2)</sup> , 7173310559Bde <sup>2)</sup> and A6V101083254 <sup>2)</sup> contain data on environmentally compatible product design and assessments (RoHS compliance, material composition, packaging, environmental benefit, and disposal).

Dimensions and weight
See "Dimensions" (page 8)

Accessories		
Stem heating element ASZ6.6 <sup>3)</sup>	Operating voltage	AC/DC 24 V ± 20 %.
	Power consumption	50 VA, 30 W
	Switch-on current (cold)	Max. 8,5 A (max. temperature 85 °C/185 F)

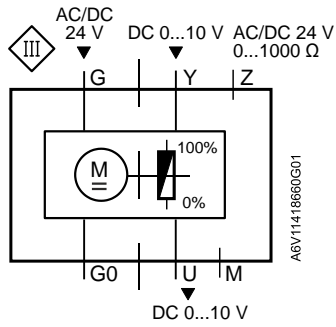
<sup>1)</sup> AWG = American wire gauge

<sup>2)</sup> The documents can be downloaded at <http://www.siemens.com/bt/download>

<sup>3)</sup> UL-approved components 

## Connection diagrams

### Connection diagram



### Connection terminals

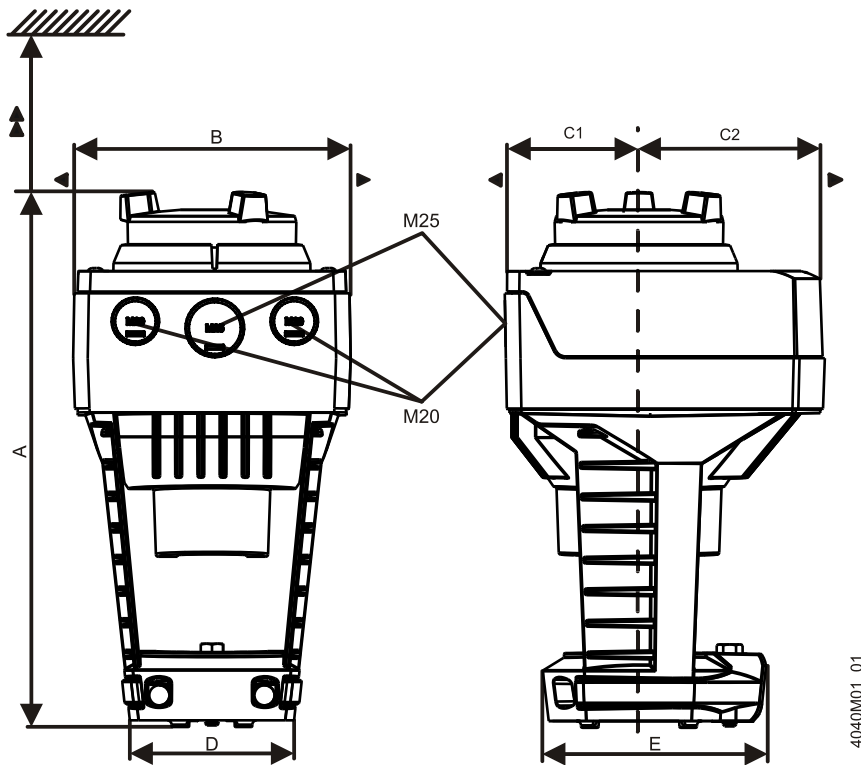
#### Fixed connection cable 4 x 0.75 mm<sup>2</sup>

AC/DC 24 V, DC 0...10 V	
<b>G</b>	System neutral (SN)
<b>G0</b>	System potential (SP)
<b>Y</b>	Positioning signal DC 0...10 V
<b>M</b>	Measuring neutral
<b>U</b>	Position feedback DC 0...10 V – (System neutral is measuring ground M)
<b>Z</b>	Control signal forced control

#### Cable designations

Connection	Code	No.	Color	Abbreviation	Meaning
Actuator. AC / DC 24 V	G	1	Red	RD	System potential AC/DC 24 V
	G0	2	Black	BK	System zero
	Y	8	Gray	GY	Signal input
	U	9	Pink	PK	Signal output

## Dimensions



Type	A	B	C	C1	C2	D	E			
SAX61.03/HR <sup>1)</sup>	242	124	150	68	82	80	100	100	200	1,945
SAV61.00/HR	265									2,070

<sup>1)</sup> Device has fixed connection cable - left cable entry occupied

Dimensions in mm

## Revision numbers

Type	Valid from rev. no.
SAX61.03/HR	..H
SAV61.00/HR	..B