



## Electric actuator

for zone valves VVI46..., VXI46..., VVS46... und VXS46...

**SFA21/18**  
**SFA71/18**

- SFA21/18 AC 230 V operating voltage, 2-position control signal
- SFA71/18 AC 24 V operating voltage, 2-position control signal
- 105N positioning force
- Spring return
- Manual adjustment
- For direct mounting with union nut (no tools required)
- Integral 1.8 m connecting cable
- Auxiliary switch, type ASC2.1/18 (optional)

### Use

The SFA21/18 and SFA71/18 actuators are used in conjunction with zone valves VV...46... and VX...46..., primarily in heating, ventilation, air conditioning and refrigeration systems for water-based control of low-temperature hot water and cooling water.

### Functions

The electric actuator requires an on/off controller (thermostat) to control the valve. If the temperature of the medium deviates from the setpoint, the controller output signal causes the actuator to drive the valve open. When the temperature of the medium reaches the setpoint, the control signal is cut off and the valve closes again.

## Types

Type	Operating voltage	Positioning time	Control signal	Connecting cable
SFA21/18	AC 230 V	40 s	2-Punkt	1.8 m
SFA71/18	AC 24 V			

## Accessories

Type	Description	Switching point	Switching capacity	Connecting cable
ASC2.1/18	Auxiliary switch open/closed	At approx. 50% stroke	AC 250 V / 3(2) A	1.8 m

## Ordering

When ordering please specify the quantity, product name and type code.

*Example:* **2 Elektric actuators, type SFA71/18** and  
**2 auxiliary switches, type ASC2.1/18**

## Delivery

Actuators, valves and accessories are supplied separately.

## Compatibility

### Zone valves

VVI46...  
with internal thread  
VVS46...  
with solder connection

Type code	Valve type	$k_{vs}$ [m <sup>3</sup> /h]	PN class	Data sheet
VVI46.15, VVS46.15	Two-port valves	2.0	PN16	N4842
VVI46.20, VVS46.20		3.5		
VVI46.25, VVS46.25		5.0		
VXI46.15, VXS46.15	Three-port valves	2.0		
VXI46.20, VXS46.20		3.5		
VXI46.25, VXS46.25		5.0		

## Technical design / Mechanical design

The valve is opened electrically by the actuator and closed by spring force. It incorporates a synchronous motor, a gear mechanism and a return spring. The electric motor is overload-resistant and anti-locking, so that continuous operation is possible. The maximum stroke is limited mechanically. The closing motion, by contrast, includes an overrun for the gear mechanism. This protects the gear mechanism from mechanical shock and increases service life. The valve is connected by an 1.8 m cable, which is an integral part of the actuator.

## Accessories

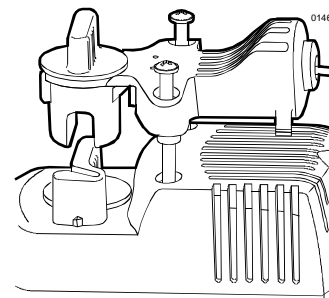
### ASC2.1/18 auxiliary switch

The optional auxiliary switch can be fitted to the actuator with two screws.

It switches at a stroke of approx. 50 %.

- Valve actuator de-energized:  
→ Auxiliary switch open
- Voltage applied to valve actuator:  
→ Auxiliary switch closed (50 ... 100 % stroke)
- Manual adjuster locked into position  
(approx. 90 % stroke):  
→ Auxiliary switch closed

See «Technical data» for further information on the auxiliary switch.



## Engineering

The admissible temperatures (see «Technical data») must be observed.

## Electrical connection

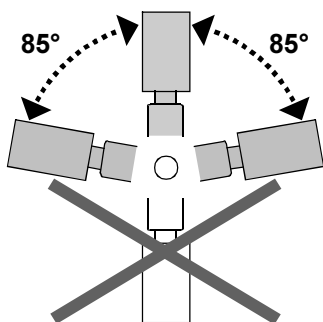
### ⚠ Caution

- The actuator may be operated only with alternating current (AC 230 V for SFA21/18 and AC 24V for SFA71/18)
- **Phase cut and pulse-width-modulated signals are not suitable.**
- Recommended number of opening/closing operations: approx. 50 per day, with 200 heating or cooling days

## Mounting

Mounting instructions are enclosed with the packaging.

## Orientation



## Commissioning

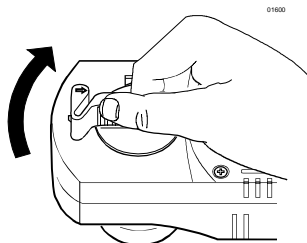
- Check the wiring.
- Check the functioning of the actuator and of the auxiliary switch, if fitted.

## Operating

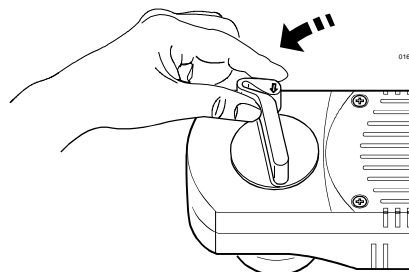
The valve can be opened manually by use of a lever on the actuator. When the valve is approximately 90% open this locks into position. When electrical operation is resumed, the locking mechanism is released automatically.

## Manual adjustment

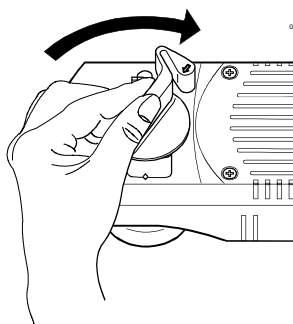
Opening the valve manually



Locking the lever into position at a valve opening of approx. 90%



Releasing the lever manually



Rotate lever as far as the mechanical stop, and release.

## Maintenance

- The actuators require no maintenance.
- In the event of a fault, the actuator can be replaced without removing the valve. The operating voltage must be switched off during this process.
- The actuators cannot be repaired.

## Disposal



The controller includes electrical components and must not be disposed of as domestic waste.

**Current local legislation must be observed.**

## Warranty

The technical data given for these applications is valid only when the valves are used with the actuators described under «Compatibility».

**The use of type SFA... actuators with third-party valves invalidates any warranty offered by Siemens Building Technologies / HVAC Products.**

## Technical data

		SFA21/18	SFA71/18
Power supply	Operating voltage	AC 230 V	AC 24 V
	Voltage tolerance	−15 / +10 %	−15 / +10 %
	Frequency	50 Hz	
	Max. power consumption	9.8 VA	
	Fuse protection for incoming cable	Max. 3 A (external)	
Control	Control signal	On/off via temperature controller <i>Phase cut and pulse-width-modulated signals are not suitable.</i>	
	Opening/closing operations	Recommended number: approx. 10 000 / year (equivalent to approx. 50 per day)	
Operating data	Position with de-energized actuator Two-port valve (VVI46...) Three-port valve (VXVI46...)	A → AB closed AB → A closed	
	Positioning time	30 ... 50 s (opened by motor, closed by spring force)	
	Nominal stroke	2.5 mm	
	Positioning force	105 N	
	Manual adjustment	0 ... 90 %	
	Admissible temperature of medium in the connected valve:	+1 ... +110 °C	
	Electrical connection	2-core, 1.8 mm 18 AWG (0.96 mm <sup>2</sup> )	
	Industry standards	Meets the requirements for <b>CE</b> marking: EMC Directive Low Voltage Directive	
	Protection class	II to EN 60730 Section 2.7	III to EN 60730 Section 2.7
	Housing protection standard	IP30 to DIN 40050, EN60529	

		SFA21/18	SFA71/18
Dimensions / Weight	Dimensions	See «Dimensions»	
	Weight without auxiliary switch with auxiliary switch	0.585 kg 0.692 kg	0.585 kg 0.692 kg
Materials	Base-plate Housing	Die-cast aluminum Polycarbonate	
Housing colors	Base and cover	Light gray, RAL7035	
Auxiliary switch (optional)	witch type	Changeover contact	
	witching point	at approx. 50 % stroke	
	witching capacity	AC 250 V 3 A resistive 2 A inductive	
	connecting cable	3-core, 1.8 mm 18 AWG (0.96 mm <sup>2</sup> )	

General ambient conditions	Operation IEC 721-3-3	Transport IEC 721-3-2	Storage IEC 721-3-2
Environmental conditions	Class 3K3	Class 2K3	Class 2K3
Temperature	+1 ... +50 °C	−25 ... +70 °C	−5 ... +50 °C
Humidity	5 ... 85 %rh	< 95 %rh	5 ... 95 %rh

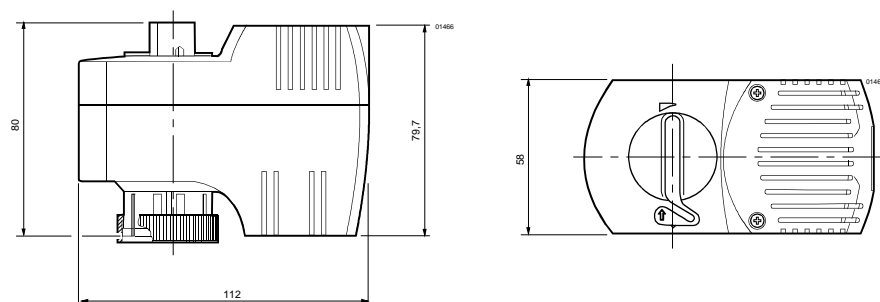
## Connecting cable

Cable	SFA21/18 AC 230 V		SFA71/18 AC 24 V	
	Cable color	Connection	Cable color	Connection
Operating voltage 2-core	Brown	L	Red	G
	Blue	N	Black	G0
Auxil. switch ASC2.1/18 (optional) 3-core	Black / Red	Input	Black / Red	Input
	Black / Blue	N/C contact	Black / Blue	N/C contact
	Black / Pink	N/O contact	Black / Pink	N/O contact

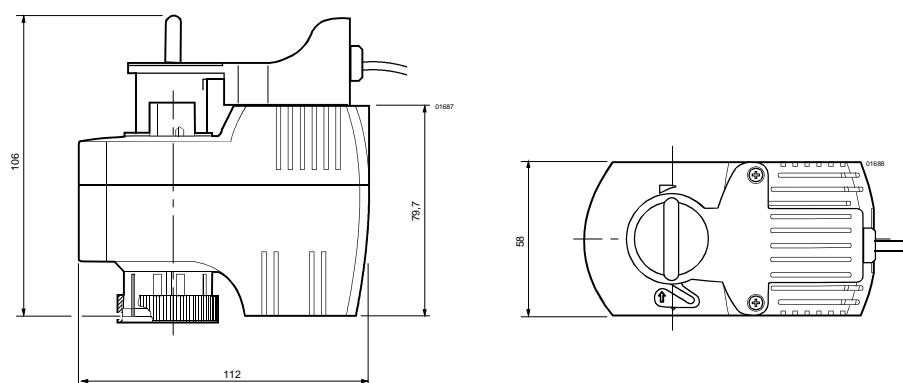
## Dimensions

All dimensions in mm

### Actuators without auxiliary switch SFA21/18, SFA71/18



### Actuators with auxiliary switches SFA21/18, SFA71/18 with ASC2.1/18





Г р у п п а   к о м п а н и й  
**Климатик**

Проектирование, поставка оборудования, монтаж и пусконаладка инженерного оборудования любой сложности.

Ассортимент товаров – более 100 000 наименований. В наличии и под заказ.

Оперативная доставка по всей территории России и стран Таможенного Союза.

## Москва:

Московская область, Люберецкий р-н, пос.Томилино, микрорайон птицефабрики ТЛК "Томилино", склад №48

Телефон: (495) 668-08-02

## Калуга:

248000, Калуга, ул.Болдина, 61, подъезд 8, офис 103, этаж 1

Телефон / Факс: +7(4842) 92-24-23

Email: [info@climatik.su](mailto:info@climatik.su)

Сайт: <https://climatik.su>