



ACVATIX™

Electromotoric actuator

SSY31
SSY81

For small valves VVP45..N

-
- **SSY31** Operating voltage AC 230 V 3-position control signal
 - **SSY81** Operating voltage AC 24 V 3-position control signal
 - **Nominal force > 250 N**
 - **Automatic identification of valve stroke**
 - **Direct mounting with union nut, no tools required**
 - **Basic types complete with plug-in connecting cable, length 1.5 m**
 - **Manual override and position indication**
 - **Parallel connection of multiple actuators possible**

Use

For operation of Siemens valves VVP45..N for water-side control of hot and cooling water in heating, ventilation and air conditioning systems.

Type summary

Type reference	Operating voltage	Positioning time at 50 Hz	Control signal	Connecting cable
SSY31	AC 230 V	150 s	3-Punkt	1.5 m
SSY81	AC 24 V			

SSY81 are UL and cUL approved.

Accessories

Type reference	Stock no.	description
ASY98	ASY98	Retaining screw for terminal block connectors

Ordering

Type reference	Stock no.	Description	Quantity
SSY31	SSY31	Electromotoric actuator	3

Delivery Actuators, valves and accessories are packed separately.

Rev. No.

Overview tables, see page 6.

Equipment combinations

Type reference	Type of valve	k_{vs} [m ³ /h]	PN class	Data sheet
VVP45..N	2-port valves	2.5...6.3	PN 16	N4840

k_{vs} = nominal flow rate of cold water (5...30 °C) through the fully open valve (H_{100}) at a differential pressure of 100 kPa (1 bar)

Technical / mechanical design

When the actuator is driven by a 3-position signal, it produces a stroke which is transmitted to the valve stem.

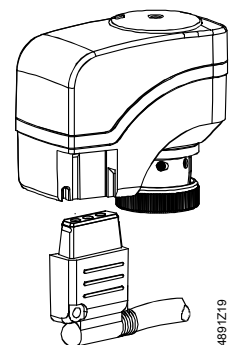
The description of operation in this document applies to the valve versions which are fully closed without actuator (NC valves).

3-position control signal

Voltage at Y1:	stem extends	valve opens
Voltage at Y2:	stem retracts	valves closes
No voltage at Y1 and Y2:	actuator maintains its current position	

Features and benefits

- Plastic housing
- Locking-proof, maintenance-free gear train
- Manual override with hexagonal socket wrench 3 mm
- Reduced power consumption in the holding positions
- Load-dependent switch-off in the event of overload and in stroke end positions
- Parallel operation of 6 SSY31 and 24 SSY81 possible, provided the controllers' output is sufficient
- Connecting cables with AC 24 V and AC 230 V connectors cannot be mixed up



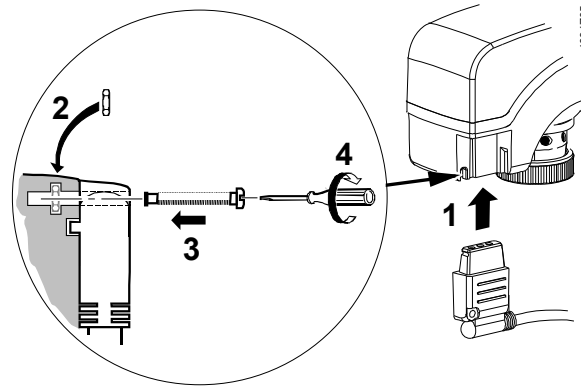
4891Z19

Accessories

Retaining screw
ASY98



Type ASY98 to secure the cable connector



The cable connector snaps into position, but can be additionally secured with the retaining screw.

Notes

Engineering

The actuators must be electrically connected in accordance with local regulations (refer to "Connection terminals" and "Connection diagrams"), page 6.

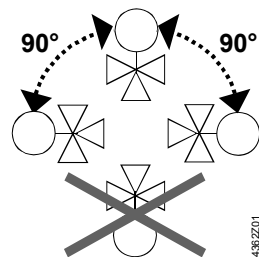
⚠ Caution Regulations and requirements to ensure the safety of people and property must be observed at all times!

The permissible temperatures (refer to "Technical data", page 4 and 5) must be observed. The connecting cable of the actuator may come into contact with the hot valve body, provided the temperature of the valve body does not exceed 80 °C.

Mounting

The Mounting Instructions 74 319 0643 0 are enclosed in the product packaging. Assembly is made with the union nut; no tools or adjustments are required. The actuator must be fitted in position 0 (also refer to "Manual override", page 3 and 4) without operating voltage.

orientation



Commissioning

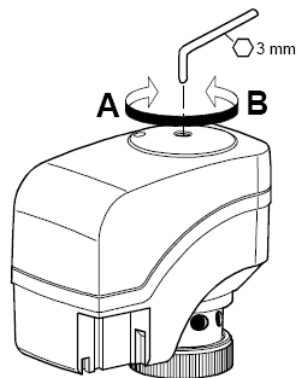
When commissioning, check wiring and the functioning of the actuator.

- Actuator stem extends (from position 0 to 1): Valve opens
- Actuator stem retracts (from position 1 to 0): Valve closes

Manual override

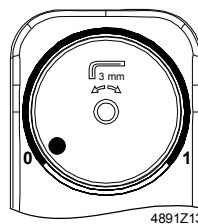
A 3 mm hexagonal socket wrench can be used to move the actuator to any position between 0 and 1. If a control signal from the controller is present, then this takes priority in determining the position.

note To retain the manually set position, unplug the connecting cable or switch off power and the control signal.

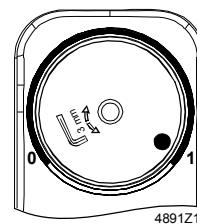


A (Y, Y1) ↓ ↑ B (Y, Y2)

4891Z25



Position indicator in Position 0: Valve closed



Position indicator in Position 1: Valve open

maintenance

The actuators are maintenance-free.

When carrying out service work on the plant, following must be noted:



- Turn power off (e.g. remove the plug)
- If necessary, disconnect electrical connections from the terminals
- The actuator must be commissioned only with a correctly mounted valve in place!

repair SSY.. actuators cannot be repaired; the complete unit must be replaced.

Disposal



The device must not be disposed of together with domestic waste. This applies in particular to the PCB.

Legislation may demand special handling of certain components, or it may be sensible from an ecological point of view.

Current local legislation must be observed.

Warranty

The engineering data specified in chapter "Combinations" (page 3) are only guaranteed in connection with the Siemens valves listed.

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

		SSY31	SSY81
Power supply	Operating voltage	AC 230 V ± 15 %	AC 24 V ± 20 %
	Frequency	50 / 60 Hz	
	Fuse for incoming cable	2 A, quick blow	
	Max. power consumption	6 VA	0.8 VA
Functional data	Run time for 5.5 mm stroke at 50 Hz	150 s	
	Nominal force	> 250 N	
	Nominal stroke	5.5 mm	
	Perm. temperature of medium in the connected valve	1...110 °C	
Signal inputs	Positioning signal	3-position	
	Parallel operation (number of actuators) ¹⁾	max. 6	max. 24
Electrical connections	Connecting cable	1.5 m 3-core to EN 60320 / IEC 60227	

	SSY31	SSY81	
Standards	CE conformity As per EMC directive	2004/108/EC	
	Immunity	EN 61000-6-2:[2005] Industrial ²⁾	
	Emissions	EN 61000-6-3:[2007] Residential	
	Electrical safety	EN 60730-1	
	Low-voltage directive	2006/95/EC	
	Protection class to EN 60730	II	III
	Contamination level	Class2 to EN 60730	
	Housing protection upright to horizontal	IP40 to EN 60529	
	UL approbation		UL 873
	CSA, Canada		C22.2 No. 24-93
Environmental compatibility	ISO 14001 (Environment) ISO 9001 (Quality) SN 36350 (Environmentally compatible products) RL 2002/95/EG (RoHS)		
Dimensions	Dimensions	Refer to "Dimensions", page 6	
	Weight	0.35 kg	
	Coupling thread to valve	Union nut G 3/4"	
Housing colors	Base and cover	RAL 7035 light gray	

¹⁾ Provided the controllers' output is sufficient

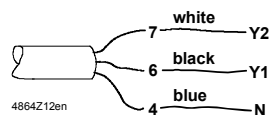
²⁾ Transformer 160 VA (e.g. Siemens 4AM3842-4TN00-0EA0) for AC 24 V actuators

General ambient conditions

	Operation EN 60721-3-3	Transport EN 60721-3-2	Storage EN 60721-3-1
Environmental conditions	Class 3K3	Class 2K3	Class 1K3
Temperature	+1...+50 °C	-25...+70 °C	-5...+50 °C
Humidity	5...85 % r.h.	< 95 % r.h.	5...95 % r.h.

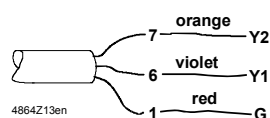
Connection terminals

SSY31



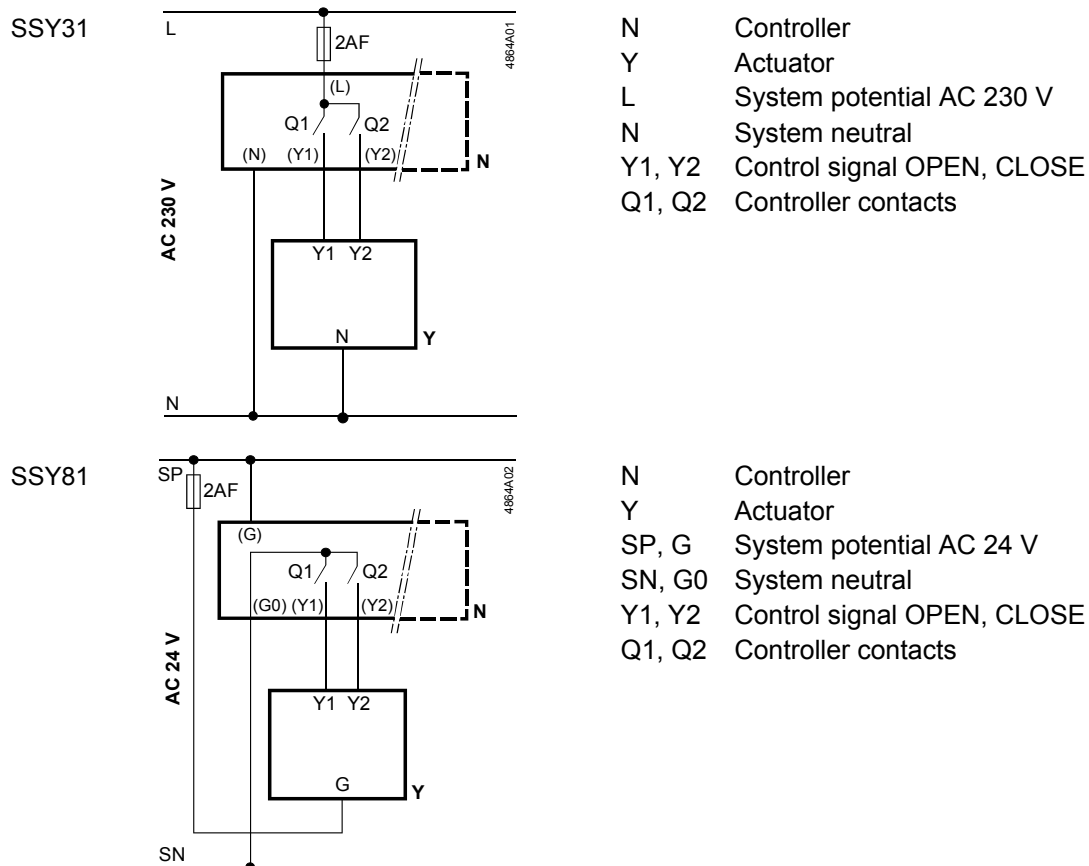
7	White	Y2	Control signal CLOSE (AC 230 V)
6	Black	Y1	Control signal OPEN (AC 230 V)
4	Blue	N	Neutral

SSY81



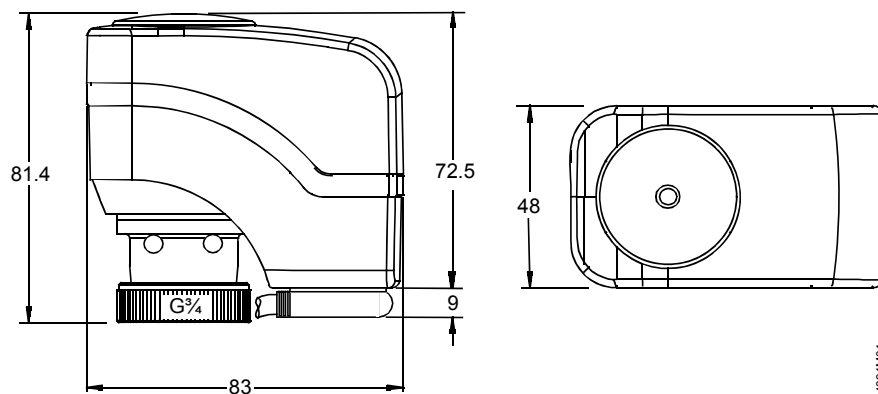
7	Orange	Y2	Control signal CLOSE (AC 24 V)
6	Violet	Y1	Control signal OPEN (AC 24 V)
1	Red	G	System potential AC 24 V

Connection diagrams



Dimensions

Dimensions in mm



Revision numbers

Type reference	Valid from rev. no.	Type reference	Valid from rev. no.
SSY31	J	SSY81	J