

## Electrothermal actuators

STA..,STP..



### For radiator valves, small valves, zone and combi valves PICV

- ST..121.., STA126.., ST..162..: Operating voltage AC/DC 24 V
- ST..161..: Operating voltage AC 24 V
- ST..321.. ST..326..: Operating voltage AC 230 V
- Positioning force 125 N, 6.5 mm (ST..65..)
- Positioning force 100 N, 4 mm (ST..40..)
- Connection cables 1m, 2 m, 5 m, 10 m / halogen free: 1 m, 5 m, 10 m
- Direct assembly connection mounting for valve threaded connection M30x1.5 mm
- IP54 housing protective class
- Visible position indicator 360°
- Thermal expansion element
- First open function for low force valve mounting for NC actuators
- Robust construction, quiet operation, no maintenance required
- Degree of pollution 2
- ST..121.., ST..161.., ST..162.., AC/DC 24 V protection class III, overvoltage category I (1500 V)

## Application

- Used in interior rooms
- For Siemens valves:
  - Radiator valves: VDN.., VEN.., VUN..
  - Small valves: VD1..CLC.., VVP47.., VXP47.., VMP47..
  - Zone valves: VVI46.., VXI46..
  - PICV: VQP46.., VQI46.., VPP46..: DN 10, 15, 20, 25, 32, VPI46..: DN 15, 20, 25, 32
  - Radiator PICV: VPD..-135, VPE..-135, VPU..-135
- For third-party valves
  - Installation with corresponding adapter, see Accessories [▶ 10].  
Comap, Danfoss, Giacomini, MMA Markaryd, Vaillant, Beulco, Strawa
  - Direct assembly using the ASA80 adapter (included)  
Honeywell/MNG, Heimeier, Herz
  - Valve closing dimension as per table Device combinations [▶ 12]

## Technical design / mechanical design

### Actuator operation

The electro thermal actuators STA.. and STP.. feature silent operation and are maintenance-free.

When the control signal is applied to the actuator, the temperature of the heating element rises, which causes the solid expansion medium to expand. It transfers its stroke directly to the installed valve.

The valve starts to open after preheating for approximately 1.5 minutes if the heating element is switched on in a cold state (room temperature) and achieves the maximum stroke after another ca. 3 min (AC/DC 230 V) or 2 min (AC/DC 24 V).

The expansion element cools down when switched off and the spring closes the valve (NC variants).

Actuators	NC (normally closed) STA..	NO (normally open) STP..
De-energized	<ul style="list-style-type: none"> <li>● Valve stem is fully extended</li> <li>● <b>Valve (NO)</b> is closed.</li> </ul>	<ul style="list-style-type: none"> <li>● Valve stem is retracted.</li> <li>● The <b>valve (NC)</b> spring closes the valve.</li> </ul>
Action at startup	<ul style="list-style-type: none"> <li>● Valve stem retracts.</li> <li>● The <b>valve (NO)</b> spring opens the valve.</li> </ul>	<ul style="list-style-type: none"> <li>● Actuator stem is fully extended</li> <li>● <b>Valve (NC)</b> opens.</li> </ul>
Parallel operation of multiple actuators	Possible for all actuators that are limited by the output power of the controller. Do not use together with PDM/TPI.	
<b>Valve</b>	Examples: <ul style="list-style-type: none"> <li>● Zone valves (V..I46..)</li> <li>● Radiator valves (V..N..)</li> <li>● Small valves (VD1..CLC)</li> <li>● Radiator PICV (VPD..-135, VPE..-135, VPU..-135, VQ..46.., VP..46...: DN 10, 15, 20, 25, 32)</li> </ul>	Example: <ul style="list-style-type: none"> <li>● Small valves (V..P47..)</li> </ul>
State without actuator	<ul style="list-style-type: none"> <li>● <b>Valve (NO)</b> is open without actuator.</li> <li>● Valve stem is fully extended.</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Valve (NC)</b> is closed without actuator.</li> <li>● Valve stem is fully extended.</li> </ul>



Some controllers control the valve actuators with PDM signals. For optimum control, the ambient temperature of the actuator must be < 40 °C.

### First open function

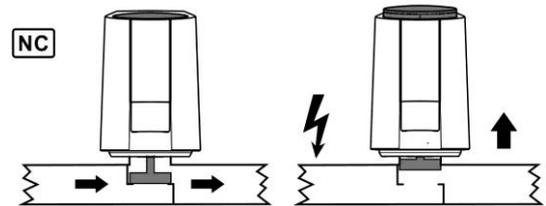
The NC version has a first open function (activated as part of the delivery). The first open function allows low-force assembly of the actuator and is used to flush the plant prior to commissioning. The first open function automatically unlocks once power is connected (for more than 6 min.) during commissioning.

### Definition NC/NO

**NC** versions are closed when deenergized:

The valve (NO) is closed when idle after assembling the actuator (NC). The actuator stem retracts and the valve opens as soon as the actuator is connected to power.

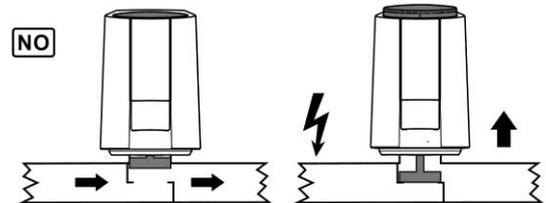
Valve state with deenergized actuator: Closed.



**NO** versions open when deenergized:

The valve (NO) is open when idle after assembling the actuator (NO). The actuator stem fully extends and the valve closes as soon as the actuator is connected to power.

Valve state with deenergized actuator: Open.



The valve is closed in a deenergized state for most valve applications featuring thermal actuators.

Actuators with the opposite control action are used when the reserved function is required: The valve is open in a deenergized state.

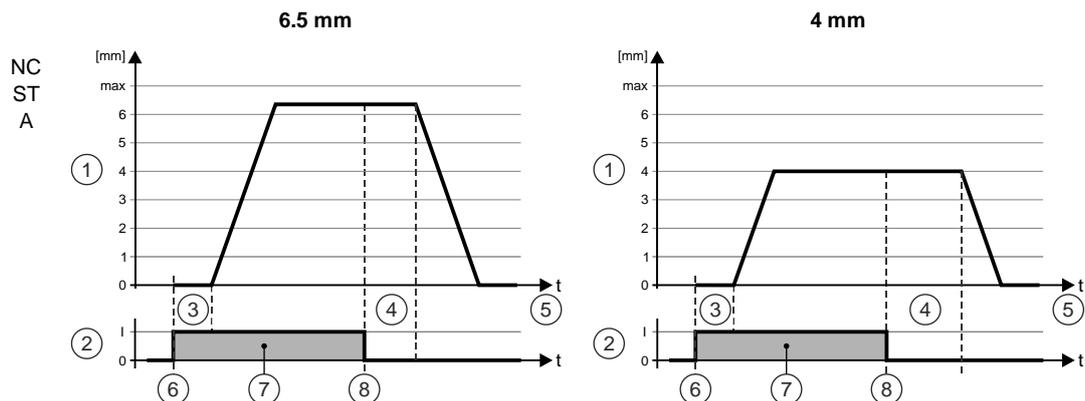
⇒ **NO function: STA.. + NC valve / STP.. + NO valve**

<i>Response on a deenergized actuator</i>			
Valve	Type	STA..	STP..
Radiator valves	VDN.., VEN.., VUN..	Closed	Open <sup>1), 2)</sup>
Small valves	VD1..CLC..	Closed	Open <sup>1), 2)</sup>
	VVP47.., VPI47.., VMP47..	A ↔ AB open <sup>1), 2)</sup>	A ↔ AB closed <sup>1), 2)</sup>
Zone valves	VVI46.., VXI46..	AB ↔ A closed	AB ↔ A open <sup>1), 2)</sup>
PICV	VPD..-135, VPE..-135, VPU..-135	Closed	Open <sup>1), 2)</sup>
	VPP46.10..		
	VPP46.., VPI46..: DN 15, 20, 25, 32		
	VQP46.., VQI46..		

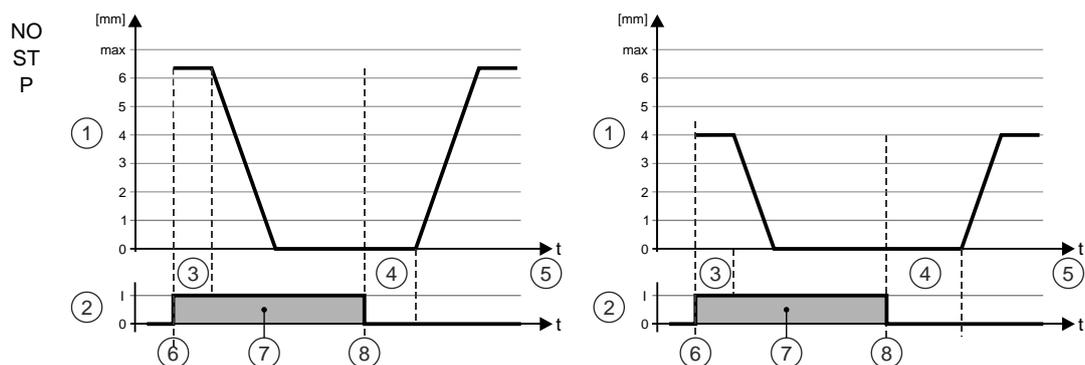
<sup>1)</sup> Controller must support NO valve-actuator combinations.

<sup>2)</sup> Combination not recommended since it does not make sense from an energy viewpoint outside demand periods.

## Positioning times, opening / closing 2-pos.



- The valve (NC) is opened uniformly by stem movement when switched on and preheated.
- The valve (NC) is closed uniformly by the closing force of the compression spring by switching off the voltage and after the hold-up time has elapsed.
- The closing force of the compression spring is matched to the closing force of the valves and keeps the valve (NC) closed when the valve is deenergized.



- The valve (NO) is opened uniformly by stem movement when switched on and preheated.
- The valve (NO) is opened uniformly by the closing force of the compression spring by switching off the voltage and after the hold-up time has elapsed.

1 Stroke

2 Voltage

1 on

0 off

3 Preheating time (approx. 2 min.)

4 Hold-up time (approx. 3 min.)

5 time

6 Switch-on time

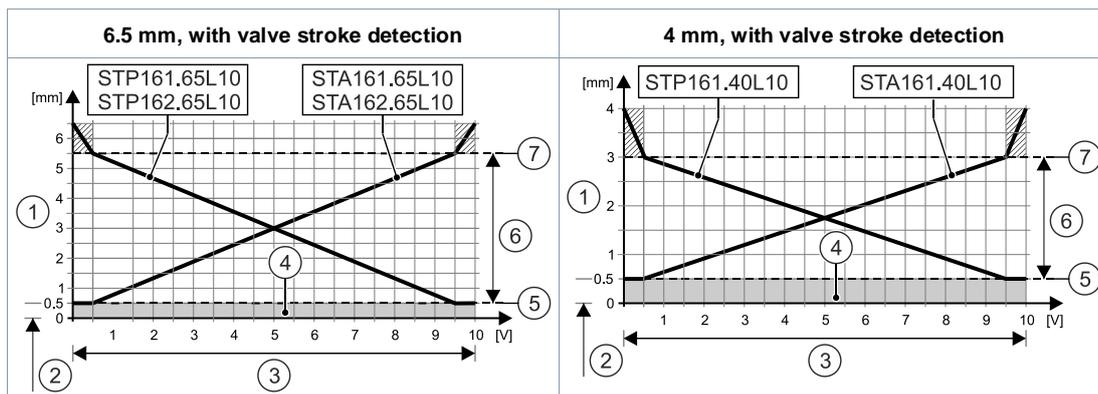
7 Voltage switched on

8 Switch off time



Some room controllers control thermal actuators with PDM/TPI signals. This increases response time. The ambient temperature of the actuator must be < 40°C for optimum control.

## Control of modulating drives

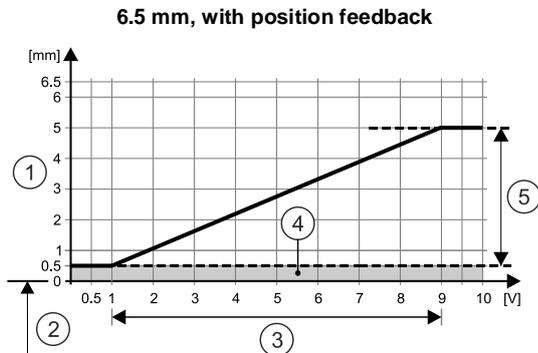


- 1 Actuator travel (mm)
- 2 Valve adapter edge
- 3 Voltage range 0...10V
- 4 Overstroke range <sup>1)</sup>
- 5 Stem fully extended (NO actuator)
- 6 Valve stroke
- 7 Stem fully retracted (NC actuator)

<sup>1)</sup> The overstroke (~ 0.5 mm) ensures reliable closing of the valve/actuator combination over the entire service life of the electrothermal actuator. The position indicator protrudes slightly as a consequence.

## Electronic position feedback

STA162.65L10; STP162.65L10



### Voltage

- < 0.5 V No function or no contact
- 1 – 9 V Voltage output is proportional to valve stroke
  - 1 V: Stem fully extended
  - 9 V: Stem fully retracted
- Applies to NC and NO actuators
- > 9.5 V Internal error

Voltage output while initializing the actuator: 5V

- 1 Actuator travel (mm)
- 2 Valve adapter edge
- 3 Positioning signal 1...9 V
- 4 Overstroke range <sup>1)</sup>
- 5 Valve stroke

<sup>1)</sup> The overstroke (~ 0.5 mm) ensures reliable closing of the valve/actuator combination over the entire service life of the electrothermal actuator. The position indicator protrudes slightly as a consequence.

## Valve stroke detection

STA161.40L10	STA161.65L10	STA162.65L10
STP161.40L10	STP161.65L10	STP162.65L10

The actuator determines the valve stroke and automatically adjusts the active control voltage range accordingly. This enables the valve to be actuated even more precisely and prevents the drive from running empty. The full voltage stroke of the controller is used for flow control.

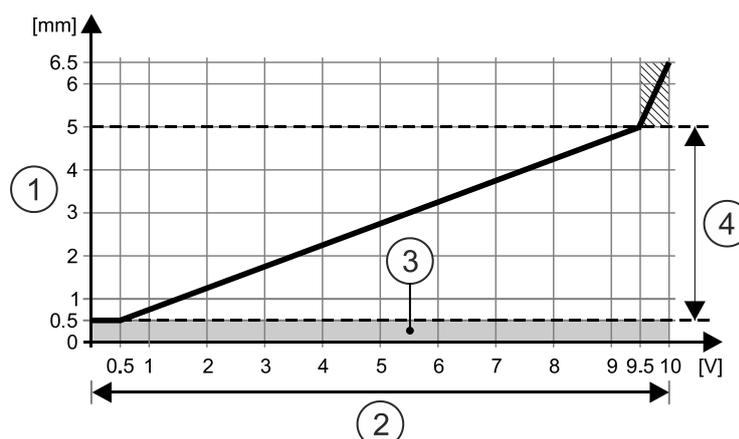
### NC variant:

The actuator is opened without power by the "First open" function when delivered. During initial commissioning, the "First open" function unlocks automatically by applying the operating voltage and detects the valve stroke. The entire initialization process takes 25 minutes. The "First-open" function unlocks after 6 minutes and detects the valve stroke after another 19 minutes. The actuator is then fully operational.

### NO variant:

During initial commissioning, the valve stroke is detected by applying the operating voltage. The entire initialization process takes 19 minutes. The actuator is then fully operational.

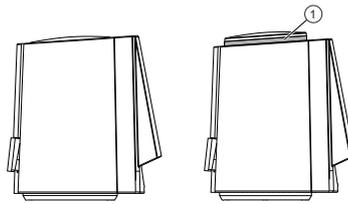
For example: STA161.65L10:



- |                         |                                  |
|-------------------------|----------------------------------|
| 1 Actuator travel (mm)  | 3 Overstroke range <sup>1)</sup> |
| 2 Voltage range 0...10V | 4 Valve stroke                   |

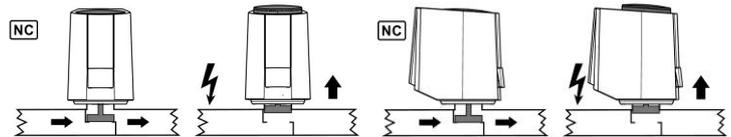
<sup>1)</sup> The overstroke (~ 0.5 mm) ensures reliable closing of the valve/actuator combination over the entire service life of the electrothermal actuator. The position indicator protrudes slightly as a consequence.

## Position indicator

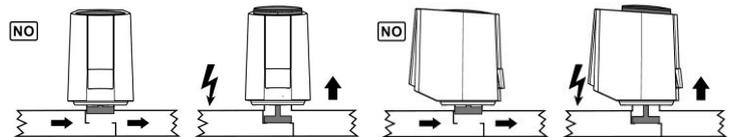


The movement and position of the actuator stem is indicated by the stroke indicator (1).

On actuator version NC (STA..), the position indicator extends and the actuator stem retracts when the actuator is energized.



On actuator version NO (STP..), the position indicator and actuator stem extends when the actuator is energized.



## Type summary

Type	Stock number	Stroke	Position deenergized	Positioning signal	Operating voltage	Auxiliary switch	Positioning Feedback	Valve stroke recognition	Connection cable	
		[mm]								
STA121.65L10	S55174-A201	6.5	NC	2-position, PDM/TPI <sup>3)</sup>	AC/DC 24 V	—	—	—	1 m	
STP121.65L10	S55174-A203		NO							
STA321.65L10	S55174-A200		NC	2-pos.	AC 230 V					
STP321.65L10	S55174-A202		NO							
STA121.65L20	S55174-A205		NC	2-position, PDM/TPI <sup>3)</sup>	AC/DC 24 V				2 m	
STP121.65L20	S55174-A207		NO							
STA321.65L20	S55174-A204		NC	2-pos.	AC 230 V					
STP321.65L20	S55174-A206		NO							
STA121.65H20 <sup>2)</sup>	S55174-A208		NC	2-position, PDM/TPI <sup>3)</sup>	AC/DC 24 V					2 m Halogen-free
STA321.65H20 <sup>2)</sup>	S55174-A209			2-pos.	AC 230 V					
STA121.65/00	S55174-A211			2-position, PDM/TPI <sup>3)</sup>	AC/DC 24 V				Not included: See Cable overview [► 9] (plug-in)	
STP121.65/00	S55174-A213		NO							
STA321.65/00	S55174-A210		NC	2-pos.	AC 230 V					
STP321.65/00	S55174-A212		NO							
STA161.65L10	S55174-A214		NC	DC 0...10 V	AC 24 V					yes
STP161.65L10	S55174-A215		NO							
STA162.65L10	S55174-A216		NC		AC/DC 24 V					
STP162.65L10	S55174-A217	NO								
STA121.40L10	S55174-A219	4.0	NC	2-position, PDM/TPI <sup>3)</sup>	AC/DC 24 V	—	—	1 m		
STP121.40L10	S55174-A221		NO							
STA321.40L10	S55174-A218		NC	2-pos.	AC 230 V					
STP321.40L10	S55174-A220		NO							
STA126.40L10	S55174-A225		NC	2-position, PDM/TPI <sup>3)</sup>	AC/DC 24 V	yes				
STA326.40L10	S55174-A224			2-pos.	AC 230 V					
STA161.40L10	S55174-A222		NO	DC 0...10 V	AC 24 V	—	yes	plug-in		
STP161.40L10	S55174-A223									

1) NC = Normally Closed = (Valve) closed when deenergized  
 NO = Normally Open = (Valve) open when deenergized

2) Halogen-free as per VDE 0207-24

3) PDM (Pulse Duration Modulation) / TPI (Time Proportional Integral)

## Cable overview

Type	Order number	Description	Cable length	Actuators
ASY21L10	S55845-Z278	PVC cable	1 m	STA121.65/00 STA321.65/00 STP121.65/00 STP321.65/00
ASY21L20	S55845-Z279		2 m	
ASY21L50	S55845-Z280		5 m	
ASY21L100	S55845-Z281		10 m	
ASY21L10H	S55845-Z282	Halogen-free cable	1 m	
ASY21L50H	S55845-Z283		5 m	
ASY21L100H	S55845-Z284		10 m	
ASY61L10	S55845-Z285	PVC cable, no position feedback	1 m	STA161.65L10 STP161.65L10 STA161.40L10 STP161.40L10
ASY61L20	S55845-Z286		2 m	
ASY61L50	S55845-Z287		5 m	
ASY61L100	S55845-Z288		10 m	
ASY61L10H	S55845-Z289	Halogen-free cable, no position feedback	1 m	
ASY61L50H	S55845-Z290		5 m	
ASY61L100H	S55845-Z291		10 m	
ASY62L10	S55845-Z292	PVC cable, position feedback	1 m	STA162.65L10 STP162.65L10
ASY62L20	S55845-Z293		2 m	
ASY62L50	S55845-Z294		5 m	
ASY62L100	S55845-Z295		10 m	
ASY62L10H	S55845-Z296	Halogen-free cable Position feedback	1 m	
ASY62L50H	S55845-Z297		5 m	
ASY62L100H	S55845-Z298		10 m	

**Adapter for third-party valves**

Type	Order number	For valves manufactured by
ASA04H	S55845-Z304	Beulco floor heating
ASA10	S55845-Z305	Strawa floor heating
ASA26	S55845-Z299	Giacomini
ASA59	S55845-Z300	Danfoss RAV/L
ASA64	S55845-Z306	Pettinaroli
ASA72	S55845-Z301	Danfoss RAV
ASA78	S55845-Z302	Danfoss RA
ASA80	S55845-Z303	M30x1.5
AV52 <sup>1)</sup>	BPZ:AV52	COMAP
AV57 <sup>1)</sup>	BPZ:AV57	Herz
AV59 <sup>1)</sup>	BPZ:AV59	Vaillant
AV61 <sup>1)</sup>	BPZ:AV61	MMA Markaryd

<sup>1)</sup> Assembled with adapter for third-party valves and adapter ASA80

**Delivery**

Actuators, valves and accessories are supplied in separate packages. Adapter ASA80 is included with the actuator.

**Ordering (example)**

With Siemens valves and direct assembly on third-party valves

Type	Stock number	Designation	Number of pieces
STA321.65L10	S55174-A200	Electrothermal actuators	1

With adapter for valves from other manufacturers, see Accessories [ ▶ 10].

Type	Stock number	Designation	Number of pieces
STP161.65L10	S55174-A215	Electrothermal actuators	1
ASA78	S55845-Z302	Third-party valve adapter on Danfoss RA	1

With cable, see Type summary [▶ 9].

Type	Stock number	Designation	Number of pieces
STA321.65/00	S55174-A210	Electrothermal actuators	1
ASY21L100H	S55845-Z284	Halogen-free cable 10 m	1

With cable and adapter for valves from other manufacturers, see Accessories [▶ 10]

Type	Stock number	Designation	Number of pieces
STA121.65/00	S55174-A211	Electrothermal actuators	1
ASA26	S55845-Z299	Giacomini	1
ASY21L50	S55845-Z-280	PVC cable: 5m	1

## Device combinations

### Siemens valves

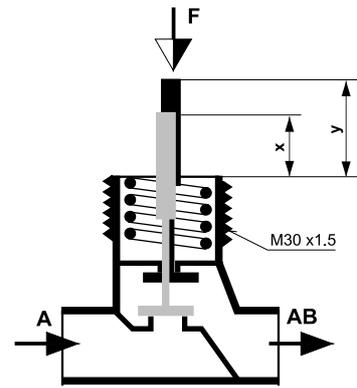
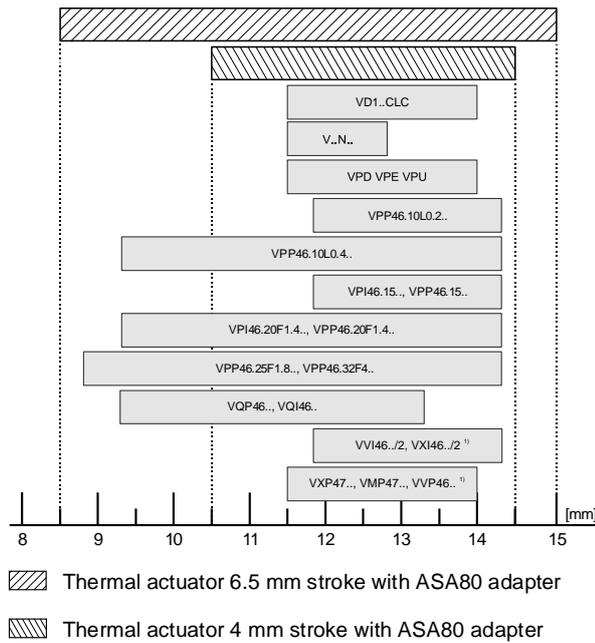
The following valves are recommended:

Valve type	Valve type	Actuator	$k_{vs}$ [m <sup>3</sup> /h]	$\dot{V}$ [l/h]	PN class	Data sheet
VDN.., VEN.., VUN..	Radiator valves	STA..40..	0.09...1.4	-	PN10	2105, 2106
VPD..-135, VPE..-135, VPU..-135	Pressure independent control valves (PICV)	STA..40..	-	20...135		A6V13089932
VD1..CLC..	Small valves	STA..40..	0.25...2.6	-		N2103
VVI46.., VXI46.. <sup>1)</sup>	Zone valves	STA..65..	2...5	-	PN16	N4842
VVP47.., VXP47.., VMP47.. <sup>1)</sup>	Small valves	STA..65..	0.25...4	-		N4847
Valve series VPP46 with 2.5 mm stroke: VPP46.10L0.2; VPP/VPI46.15L0.2 VPP/VPI46.15L0.6; VPP/VPI46.20L0.6 VPP46.10L0.2Q; VPP/VPI46.15L0.2Q VPP/VPI46.15L0.6Q; VPP46/VPI.20L0.6Q	PICV	STA..40.., STP..40..	-	30...575	PN25	N4855
Valve series VPP46 with 5...5.5 mm stroke: VPP46.10L0.4; VPP46.15L0.4 VPP46...F... VPP46.10L0.2Q; VPP46.15L0.4Q VPI46.15L0.4; VPI15L0.4Q VPI46..F..	PICV	STA..65.., STP..65..	-	30..4001		
VQP46.., VQI46.. <sup>1)</sup>	PICV	STA..65..	-	30...1800		A6V11877580

$k_{vs}$  Flow nominal value for cold water (5...30 °C) through a fully opened valve (H100), at a differential pressure of 100 kPa (1 bar)

<sup>1)</sup> For safe operation, use only STA/STP..65..

## Siemens valves closing dimension



x: Fully closed

y: Fully open

For recommended valve-actuator combinations, see Siemens valves [► 11].

<sup>1)</sup> Use only STA/STP..65.. to ensure safe operation

## Third-party valves

- Beulco
- COMAP
- Danfoss
- Giacomini
- Honeywell/MNG
- Heimeier
- Herz
- MMA Markaryd
- Strawa
- Vaillant
- Watts (Cazzaniga)

## Electrothermal actuators

Contents	Title	Document ID
Data sheet: Product description	Electrothermal actuators STA., STP..	A6V14028280
Mounting instructions	ST..161.40L10	A5W00438734A (A6V14084612)
	ST..321.40L10	A5W00438744A (A6V14084638)
	ST..121.40L10	A5W00438748A (A6V14084639)
	ST..162.65L10	A5W00438750A (A6V14084666)
	ST..161.65L10	A5W00438753A (A6V14084669)
	ST..121.65..	A5W00442573A (A6V14084671)
	ST..321.65..	A5W00442575A (A6V14084672)
	ST..321.65/00	A5W00442578A (A6V14084673)
	ST..121.65/00	A5W00442580A (A6V14084674)
	ST..126.40L10	A5W00442582A (A6V14084676)
	ST..326.40L10	A5W00442584A (A6V14084677)

## Valves

Contents	Title	Document ID
Data sheet: Product description	Product range overview	N2100
	Radiator valves VDN1., VEN1..	N2105
	ST..121., VDN2., VEN2., VUN2..	N2106
	Pressure independent control valves (PICV) VPD..-135, VPE..-135, VPU..-135	A6V13089932
	Small valves (VD1..CLC.)	N2103
	2-port and 3-port zone valves PN16 VVI46., VXI46..	N4842
	2-port and 3-port zone valves PN16 VVP47., VXP47..	N4847
	PICV PN25 VPP46., VPI46..	N4855
	Open/close PICV PN25 VQP46., VQI46..	A6V11877580

Safety

 **CAUTION**



**National safety regulations**

Failure to comply with national safety regulations may result in personal injury and property damage.

- Observe national provisions and comply with the appropriate safety regulations.

 **CAUTION**



**Risk of injury from electrical shock**

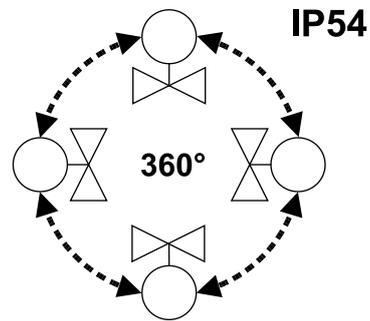
- Do not install with defective cable.
- Disconnect power prior to assembling or removing the device.
- Do not attach cables to warm piping.
- Using an external fuse.
- Power 24V versions with a transformer or power supply that meet requirements of safety extra low voltage to IEC 60730-1 as well as requirements per IEC 61558-2-6 or IEC 61558-2-16.

## Mounting

The mounting instructions are enclosed in the packaging (see Product documentation [▶ 13]).

### Mounting positions

Actuators may be installed in all positions.  
IP54 guaranteed.

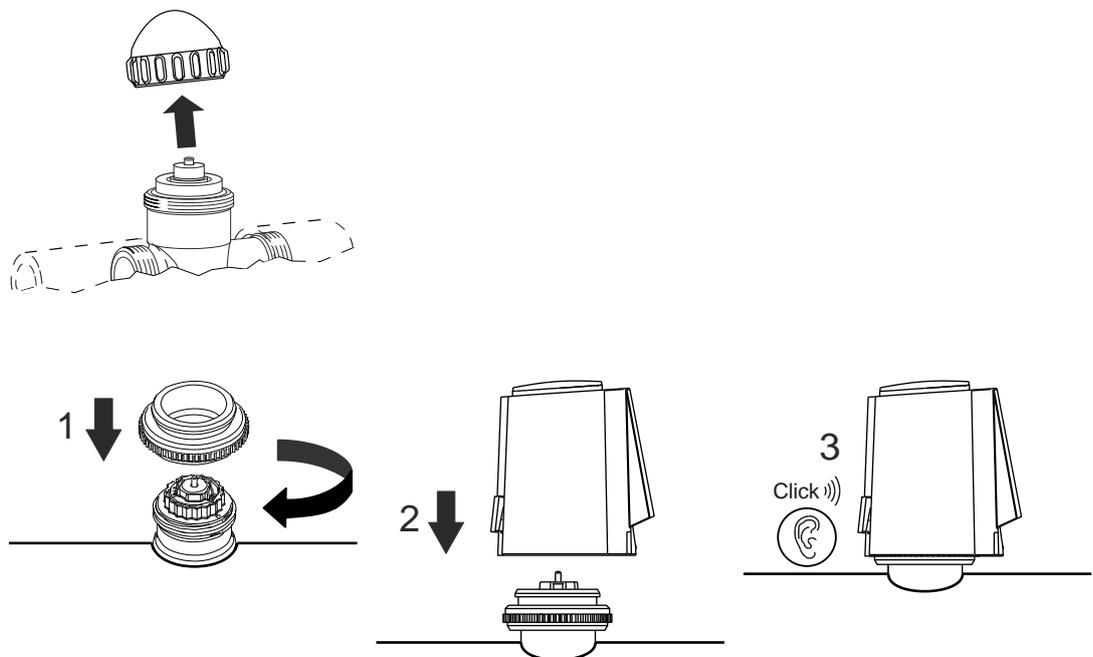


### Mounting on valve

 Disconnect power prior to mounting.

Do not use pipe wrenches or wrenches.

- ✓ Remove the protective cover from the valve body
- 1. Screw on the valve adapter by hand
- 2. Position the actuator vertically on the valve adapter
- 3. Engage the actuator manually by applying vertical pressure on the valve adapter until you hear it click.
- 4. Switch on the operating voltage after mounting.

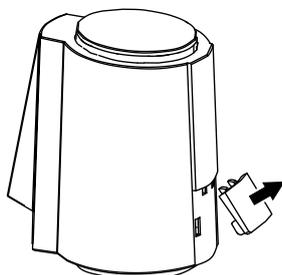


### Mounting on third-party valves

The ASA80 adapter is sometimes required in addition to the adapter for third-party valves, see Accessories [▶ 10]

Adapter ASA80 is included in the order for STA..., STP.. And can also be ordered separately.

### Protection against dismantling

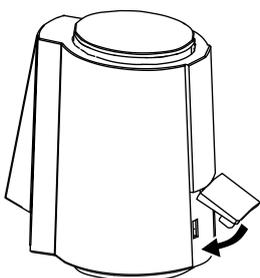


Removing the locking key prevents dismantling; the actuator position is secured, e.g. on the radiator.

### Removal

 Disconnect power prior to removing.

 Caution! The valve body can still be hot. Wait until the device has cooled down.



Re-insert the locking key prior to removing the valve if protection against removal is used.

### CAUTION



#### Damage to the locking key

Protection against dismantling can only be removed from the 6.5 mm actuators with plug-in connection cable and the 6.5 modulating actuators. In all other variants, the locking key is an integral part of the housing and cannot be removed.

Determine prior to dismantling whether the variant permits removal of the locking key.

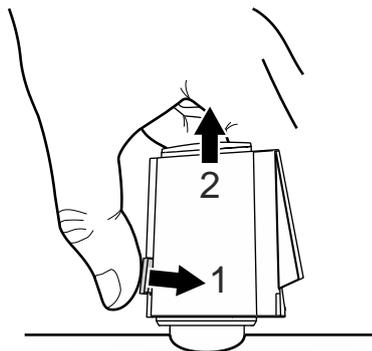
Below is a list of variants where the locking key can be removed:

SSN	ASN
STA321.65/00	S55174-A210
STA121.65/00	S55174-A211
STP321.65/00	S55174-A212
STP121.65/00	S55174-A213
STA161.65L10	S55174-A214
STP161.65L10	S55174-A215
STA162.65L10	S55174-A216
STP162.65L10	S55174-A217

Do not use pipe wrenches or wrenches.

1. Lightly press the locking key.  
⇒ The grid comes off.
2. Vertically lift the valve by hand.

The valve adapter can remain on the valve if changing to another STA/STP valve.



## Maintenance

STA.. and STP.. actuators are maintenance free.

## Disposal



This symbol or any other national label indicate that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national legislation.  
For additional details, refer to [Siemens information on disposal](#).

## Warranty service

The application-specific technical data is guaranteed only in combination with the Siemens products listed in the 'Device combinations' section. If third-party products are used, any guarantee provided by Siemens will be invalidated.

Power supply		
Operating voltage	ST..121.., STA126.., ST..162..	AC/DC 24 V +20 %...-10 %, 50...60 Hz (AC version)
	ST..161..	AC 24 V -10 %...+20 %, 50...60 Hz
	ST..321..	AC 230 V +/-10 %, 50...60 Hz
Power consumption	ST..65..	1.2 W
	ST..40..	1.0 W
Inrush current	STA12.., STP12..	< 300 mA for max. 2 min.
	STA16..L10, STP16..L10	< 320 mA for max. 2 min.
	STA32.., STP32..	< 550 mA for max. 100 ms
PDM/TPI minimum pulse length for AC operating voltage		10 ms
PDM/TPI frequency range for DC operating voltage		0...10 KHz
Rated surge voltage	ST..121.., STA126.., ST..161.., ST..162.. (24 V versions)	1000 V
	ST..321.. (230 V versions)	2500 V
Resistance control voltage input		100 kΩ
Auxiliary switch	ST..126.40L10	3 A resistive load
		1 A inductive load
	ST..326.40L10	5 A resistive load
		1 A inductive load
Connection cable	Length	See Type summary [► 9]
	Cross-section	2 x 0.75 mm <sup>2</sup>

Functional data			
Positioning time, 2-position (Including preheating time) at 25°C	4 mm, 230 V	3.5 min.	STA/STP32..40L10
	4 mm, 24 V	3.5 min.	STA/STP12..40L10
	6.5 mm, 230 V	4.5 min.	STA/STP321.65..
	6.5 mm, 24 V	4.5 min.	STA/STP121.65..
Positioning time, modulating at 25 °C	6.5 mm modulating	30 s/mm	STA/STP16..65L10
	4 mm modulating	30 s/mm	STA/STP161.40L10
Positioning force	ST..65..	125 N	
	ST..40..	100 N	
Nominal stroke	ST..65..	6.5 mm	
	ST..40..	4.0 mm	
Perm. medium temperature		1...100 °C	

Degree of protection		
Protection class	ST..121.., STA126.., ST..161.., ST..162.. (AC/DC 24 V)	III as per IEC 60730-1
	ST..321.., ST..326.. (AC 230 V)	II as per IEC 60730-1
Protection degree of housing		IP54 per EN 60529

Environmental conditions		
Running		IEC 60721-3-3:2019
	Temperature	0...50 °C
	PDM (Pulse Duration Modulation) / TPI (Time Proportional Integral)	5...40 °C
	Humidity (non-condensing)	<85 % r.h.
Transport, storage		IEC 60721-3-1:2019 IEC 60721-3-2:2019
	Temperature	-25...50 °C
	Humidity (non-condensing)	<85 % r.h.

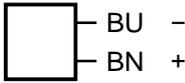
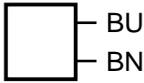
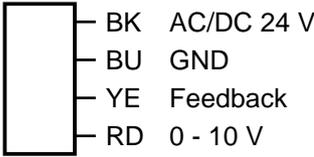
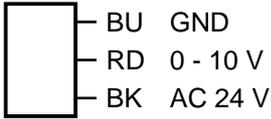
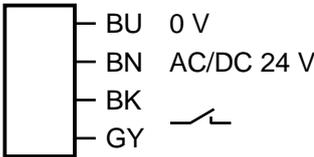
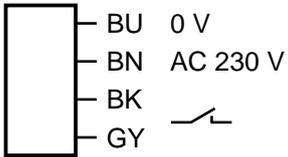
Directives and standards		
EU directives	Low voltage directive: 2014/35/EU EMC directive 2014/30/EU GL RoHS 2011/65/EU	
UK directives	S.I. 2016 No. 1101 Electrical Equipment (Safety) Regulations 2016, and related amendments S.I. 2016 No. 1091 Electromagnetic Compatibility Regulations 2016, and related amendments S.I. 2012 No. 3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012, and related amendments	
Standards	EN 60730-1:2011 EN 60730-2-14:1997 + A1:2001 + A11:2005 + A2:2008 EN IEC 63000:2018	
EU DoC	STA..	8000072738 <sup>1)</sup>
	STP..	A5W00004469 <sup>1)</sup>
UKCA DoC	STA..	A5W00508176A <sup>1)</sup>
	STP..	A5W00508178A <sup>1)</sup>

Environmental compatibility		
The product environmental declaration *) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).	ST..16..	A5W00677660A <sup>1)</sup>
	ST..21.40..	A5W00580039A <sup>1)</sup>
	ST..26.40..	
	ST..21.65L..	A5W00580036A <sup>1)</sup>
	ST..21.65H..	
	ST..21.65/00	A5W00580038A <sup>1)</sup>
	ASY21..	
	ASY6..	A5W00677657A <sup>1)</sup>
	ASA...	A5W00580040A <sup>1)</sup>

Dimensions	
Connecting thread	M30×1.5
W x H x D	See Dimensions [► 22]
Weight	

<sup>1)</sup> Documents available at <http://www.siemens.com/bt/download>

Internal diagram

ST..121.65.. / ST..121.40.. AC/DC 24 V	ST..321.65.. / ST..321.40.. AC 230 V
	
ST..162.65.. AC/DC 24 V	ST..161.65.. / ST..161.40.. AC 24 V
	
ST..126.40.. AC/DC 24 V	ST..326.40.. AC 230 V
	

BN: Brown

GY: Gray

BK: Black

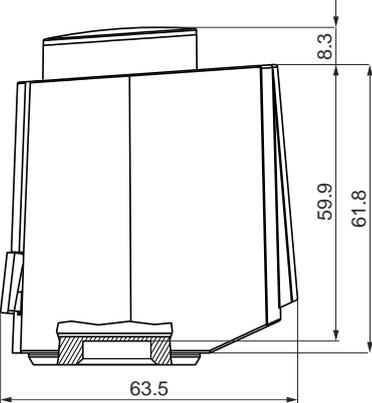
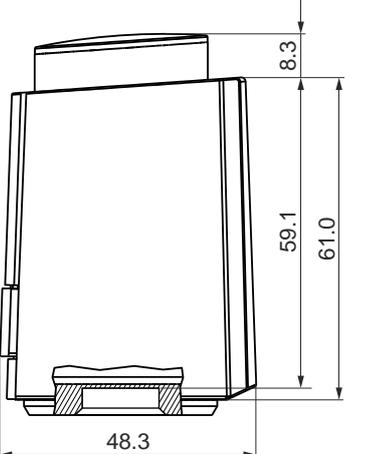
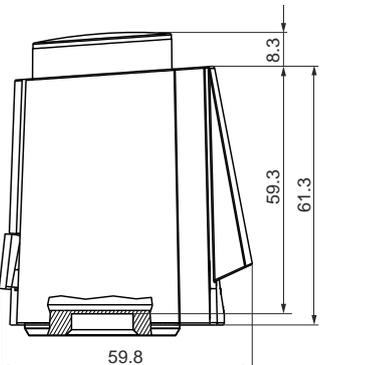
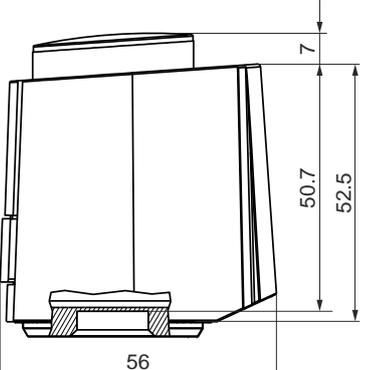
RD: Red

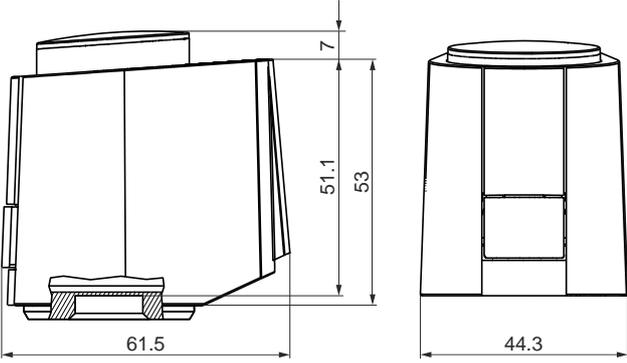
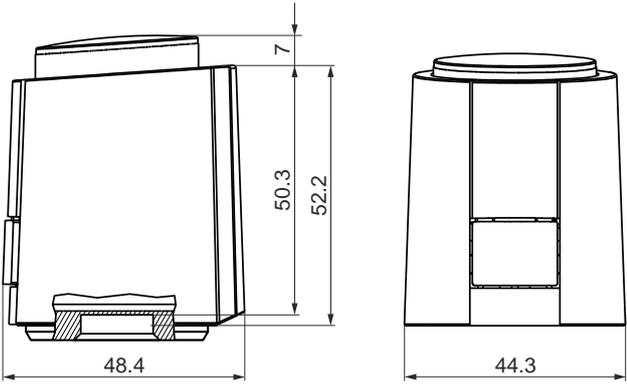
BU: Blue

YE: Yellow

GND: Neutral conductor

## Dimensions

[mm]	Type	 [kg]
	ST..161.65..  ST..162.65..	0.111
	STA121.65L.. STP121.65L.. STA321.65H20  STA321.65L.. STP321.65L.. STP121.65H20	0.110
	ST..121./00  ST..321./00	
	ST..126.40..  ST..326.40..	0.150

[mm]	Type	 [kg]
	ST..161.40L10	0.111
	ST..121.40L10	0.100
	ST..321.40L10	

### Revision numbers

Type	Stock number	Valid from Rev. NO.	Type	Stock number	Valid from Rev. NO.
STA121.65L10	S55174-A201	..A	STP121.65L10	S55174-A203	..A
STA321.65L10	S55174-A200	..A	STP321.65L10	S55174-A202	..A
STA121.65L20	S55174-A205	..A	STP121.65L20	S55174-A207	..A
STA321.65L20	S55174-A204	..A	STP321.65L20	S55174-A206	..A
STA121.65H20	S55174-A208	..A	STP121.65/00	S55174-A213	..A
STA321.65H20	S55174-A209	..A	STP321.65/00	S55174-A212	..A
STA121.65/00	S55174-A211	..A	STP161.65L10	S55174-A215	..A
STA321.65/00	S55174-A210	..A	STP162.65L10	S55174-A217	..A
STA161.65L10	S55174-A214	..A	STP121.40L10	S55174-A221	..A
STA162.65L10	S55174-A216	..A	STP321.40L10	S55174-A220	..A
STA121.40L10	S55174-A219	..A	STP161.40L10	S55174-A223	..A
STA321.40L10	S55174-A218	..A			
STA126.40L10	S55174-A225	..A			
STA326.40L10	S55174-A224	..A			
STA161.40L10	S55174-A222	..A			

Issued by

© 2023

Technical specifications and availability subject to change without notice.

---

Document ID A6V14028280\_en--\_d

Edition 2024-12-19