

## Connected Home Radiator Valve Actuator ZigBee, wireless

SSA911.02ZB



### **Wireless radiator valve actuator, works with SIEMENS Connected Home**

- RF-controlled actuator communication based on ZigBee protocol (2.4 GHz, bidirectional)
- Connects and operates with Connected Home hub and receiver
- Battery-operated with commercially available 1.5 V AA batteries
- Valve thread connection M30x1.5 mm
- Nominal stroke 5 mm
- Valve positioning force 90 N
- Adapts automatically to valve
- Integrated temperature sensor and PI controller
- Set temperature on device or via app

## Application

- The SSA911.02ZB wireless radiator valve actuator is designed to work on radiator valves from different manufacturers in HVAC applications using M30x1.5 thread. It operates the valve to control water flow and room temperature.
- The valve actuator works in combination with Connected Home Hub GTW100ZB and wireless repeater RCR110.2ZB (as an option)
- One Connected Home Hub GTW100ZB can pair with up to 32 radiator valve actuators in parallel. Wireless repeaters RCR110.2ZB extend the range of the network.



Siemens Connected Home (App)

GTW100ZB

SSA911.02ZB

RCR110.2ZB

## Basic functions

Functions	Description
Communication	The communication protocol is ZigBee. ZigBee is a low-power wireless mesh networking protocol and enables device-to-device and device-to-cloud communications. ZigBee is based on IEEE 802.15.4 radio standard.
Parallel operation	A single Connected Home Hub GTW100ZB can pair up to 32 actuators.
Pairing	The Connected Home app pairs the devices.
Calibration	The actuator automatically detects the end positions of the radiator valve.
Temperature setting	Push buttons on the device set the setpoint temperature

## Type summary

Type	Article number	Description
SSA911.02ZB	S55181-A105	Radiator valve actuator

### Scope of delivery

- Radiator valve actuator SSA911.02ZB
- 2 AA alkaline batteries (LR6)
- Quick guide (A5W00205935A)
- Third-party valve adapter for Danfoss (RA, RAV, RAVL)
- Screw and nut for adapter

## Equipment combinations

### Siemens valves

The SSA911.02ZB is suited for the following Siemens radiator valve types:

Type		$k_{VS}$ [m <sup>3</sup> /h]	$\dot{V}$ [l/h]	PN	Data sheet
VDN1.., VEN1..	Radiator valves	0.63...1.41	-	10	N2105
VDN2.., VEN2.., VUN2..					N2106
VD1..CLC..		1.9...2.6			N2103
VD1.., VE1.. *	Radiator valves	0.25...3.4	-	10	N2145
VD2.., VE2.., VU2.. *					N2146
VPD/VPE/VPU..	Radiator PICV	-			20...135

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

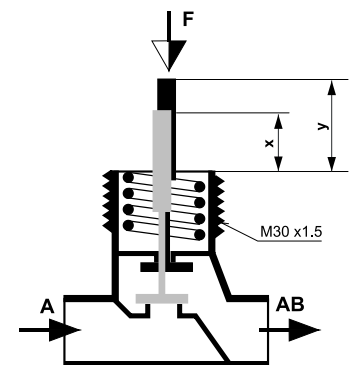
$\dot{V}$  = Volume flow

\* No longer available

### Third-party valves without adapter

The SSA911.02ZB can operate third-party radiator valves without adapter, provided they have a M30x1.5 mm connecting thread and meet the following requirements:

Force	90 N nominal
Fully closed	$x > 9,0$ mm
Fully open	$y \leq 14,5$ mm



### Valve pre-adjustment / $k_V$ -limitation

For valve pre-adjustments, refer to the relevant technical documentation on the valves. Ensure a minimum valve stroke of  $> 0.5$  mm.

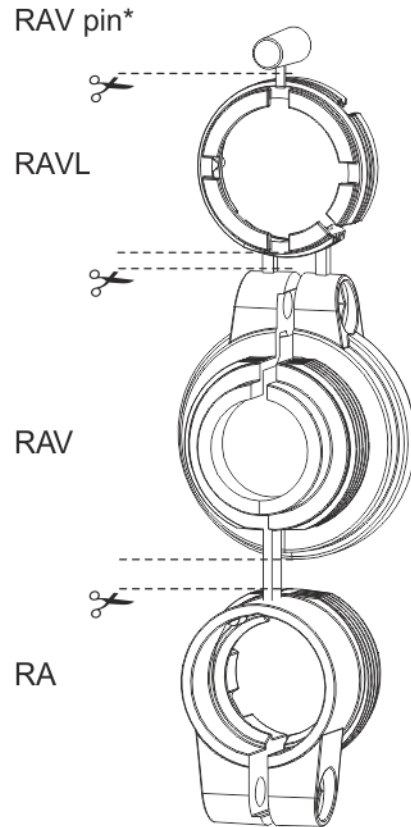
Adapters for SSA911.02ZB for use with third-party valves				
Type	Article number	For use with...	Adapter thread	
AV52	BPZ:AV52	Comap	M28x1,5	
AV56	BPZ:AV56	Giacomini	-	
AV57	BPZ:AV57	Herz	M28x1,5	
AV58	BPZ:AV58	Oventrop < 2002	M30x1	
AV59	BPZ:AV59	Vaillant	-	
AV60	BPZ:AV60	TA < 2002	M28x1,5	
AV61	BPZ:AV561	MMA Markaryd	M28x1,5	

Contact your local office or branch for information on adapters for other radiator valve types and manufacturers.

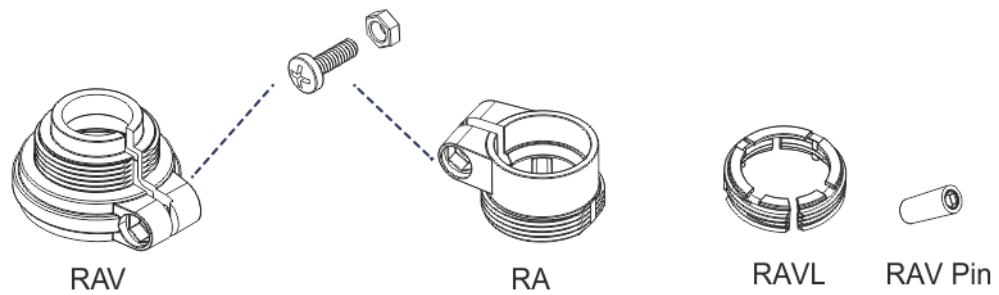
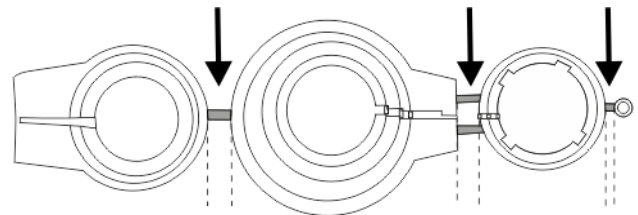
### Third-party valve adapter

Adapters for Danfoss RA/RAV/RAVL valves included in delivery.

- Remove connects on the plastic adapter before using one of the included adapters.



- Use supplied screw and nut.
- Insert pin on valve stem.



Title	Contents	Document ID
Connected Home Radiator Actuator ZigBee SSA911.02ZB	Data sheet: Product description	A6V13722083
Quick guide Connected Home Radiator Actuator ZigBee SSA911.02ZB	Quick guide for mounting, commissioning, and operation SSA911.02ZB	A5W00293080A
Connected Home Hub GTW100ZB	Data sheet: Product description	A6V12640776
Quick guide Connected Home Hub GTW100ZB	Quick guide for mounting, commissioning, and operation SSA911.02ZB	A6V12694180
Connected Home Receiver RCR110.2ZB	Data sheet: Product description	A6V12680327
Quick guide Connected Home Receiver RCR110.2ZB	Quick guide for mounting, commissioning, and operation RCR110.2ZB	A6V11562443

Related documents such as environmental declarations, CE declarations, etc., can also be downloaded at:

[www.siemens.com/bt/download](http://www.siemens.com/bt/download)

Notes

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.

**⚠ WARNING**



**Burns from hot surface**

The screw nut that fastens the actuator to the radiator valve can become hot. Risk of burns from touching the screw nut.

When servicing the actuator:

- Switch off the radiator and allow it to cool down.

## ⚠️ WARNUNG



### Explosion due to fire or short circuit, even with empty batteries

Risk of injury due to flying parts

- Do not expose batteries to water.
- Do not recharge batteries.
- Do not damage or disassemble batteries.
- Do not expose batteries to temperatures over 85 °C.

## ⚠️ WARNUNG



### Leakage of electrolyte

Severe burns

- Wear protective gloves to handle damaged batteries.
- In case of contact with electrolyte, rinse eyes immediately with plenty of water. Consult a doctor.

Observe the following:

- Correct polarity (+/-).
- Use new batteries and inspect for damage.
- Do not mix old and new batteries.

Store, transport and dispose of the batteries in compliance with local requirements, regulations, and laws. Also observe the instructions of the battery manufacturer.



Switching off the device or loss of communication to the radiator valve actuator may result in an “undefined state” and quickly drain the batteries.

Do not switch off Connected Home Hub and use a repeater as need to ensure proper communications.

## Mounting

SSA911.02ZB is mounted on the radiator valve. There are no preferred mounting positions; actuator SSA911.02ZB can be operated in all mounting positions. The display must be clearly visible and the buttons easy to access.

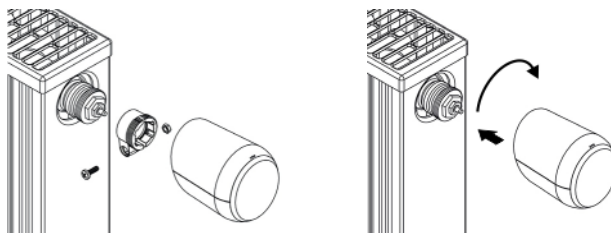
## ⚠️ WARNUNG



### Falling objects

Overhead installation may result in injury from falling objects.

- Do not install the actuator more than 2 m above ground

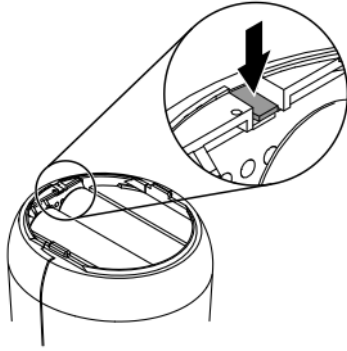


- Firmly hand tighten the screw nut clockwise to attach the actuator to the valve or adapter.

## Removal

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- Delete the device from the Siemens Connected Home App.
- Press the Reset button in the battery compartment for ca. 10 seconds.



- The LCD displays “PA” and counts up to 10.
- Release the Reset button after 10 seconds.
  - ➔ The LCD display turns off and the valve stem goes to the mounting position.
- Turn the screw nut counterclockwise and remove from the radiator valve actuator.

## Commissioning

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- Install the Connect Home mobile app.
  - The app provides step-by-step commissioning instructions.
- Install and commission the Connected Home Hub GTW100ZB (see quick guide A6V12694180).
- Optional: Install and commission the Connected Home Receiver Hub CR110.02ZB (see quick guide A6V11562443).
- Install and commission the Connected Home Radiator valve actuator SSA911.02ZB (see quick guide A5W00293080A).



**HMI**

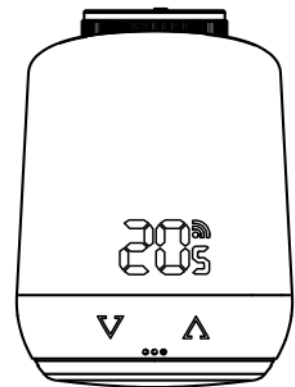
The interface consists of an LCD display and two touch elements.











Lower temperature







Increase temperature



Buttons		
▼	Press once	Lower room temperature by 0.5 °C.
	Press and hold	Immediately lowers room temperature by 0.5 °C, followed by another 0.5 °C every 0.5 s the button is held or until the lowest temperature is reached. If the settings is less than 8 °C, the LCD displays “—” and control is switched off.
▲	Press once	Increases room temperature by 0.5 °C.
	Press and hold	Immediately increases room temperature by 0.5 °C, followed by another 0.5 °C every 0.5 s the button is held or until the highest temperature is reached. When a temperature higher than 28 °C is set, "ON" appears on the LCD display. The boost mode is activated for 5 min.
▼ and ▲	Press and hold together for 3 s	Lock or unlock buttons.
	If “Ad”, press together and hold for 3 s	Starts adaptation
Reset button Battery compartment	Press Reset button in battery compartment and hold for 10 s	Delete the device list from the Connected Home app to reset to factory settings. Reset can be performed after 10 s (LCD indicates how long to press as of 5 s).
	Press and hold for 5 s	The device is deleted from the network.
	Press and hold for 3 s	Displays the discovered network (Zigbee Node ID).

LCD indication	
	<p>Informs about wireless connection and pairing.</p> <p>On: Connected to gateway.</p> <p>Off: Not connected to gateway.</p>
	<p>Pairing (inclusion) is active.</p> <p> <ul style="list-style-type: none"> <li>Do not operate the actuators in pairing mode over longer periods; this quickly drains the batteries.</li> </ul> <p>Perform a factory reset if pairing fails after multiple attempts and then try again per the documentation.</p> </p>
	<p>Remove mode (exclusion) active.</p>
	<p>Start adaptation.</p>
	<p>On during adaptation.</p>
	<p>On if button lock is enabled/disabled.</p>
	<p>On if battery capacity drops below 15%.</p>

## Change operating mode







Operating mode	
OFF mode	<p>Press touch element  and hold until the LCD displays "--" and the radiator valve actuator switches off.</p>
Heating mode	<p>The two touch elements  and  set the temperature between 8 and 28°C.</p> <p>If the device is not in heating mode, use the touch elements to change the temperature between 8 and 28 degrees.</p>
Boost mode	<p>To change the device to boost mode, press and hold touch element  until the LCD displays "ON".</p> <p>Boost mode switches off automatically after 5 minutes.</p>
Window open mode	<p>"Window open" activates if the temperature suddenly drops. SSA911.02ZB switches to OFF mode for 15 minutes.</p> <p>The Window open function switches off after 15 minutes and the device returns to the last active mode.</p>

## Error codes

### Error codes

An error code displays on the SSA911.02ZB in the event of a malfunction or communication error with Connected Home Hub.



Press the plus or minus button to clear error codes.

Code	Error	Cause / measures
	<b>Not connecting</b>	<ul style="list-style-type: none"> <li>The device does not pair with Siemens Connected Hub. For example, the device is out of range or the gateway is switched off.</li> </ul>
	<b>Pairing failed</b>	<ul style="list-style-type: none"> <li>Device is not in pairing mode.</li> <li>Device is out of range.</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <ul style="list-style-type: none"> <li>Do not leave the actuator in "Er" mode over longer periods; this quickly empty the batteries.</li> <li>If error cannot be solved immediately, remove batteries and re-insert only when starting the pairing process again.</li> <li>Perform a factory reset if pairing fails after multiple attempts and then try again per the documentation.</li> </ul> </div>
	<b>No valve detected</b>	<ul style="list-style-type: none"> <li>Is the valve correctly mounted on the radiator.</li> <li>Use the correct adapter.</li> </ul>
	<b>Closing point not recognized</b>	
	<b>Valve cannot move</b>	<ul style="list-style-type: none"> <li>Check that the valve stem is not stuck.</li> </ul>

## Maintenance

The SSA911.02ZB is maintenance-free.

## Disposal

 	<p>The device is considered an electronic device for disposal in terms of the European Directive and may not be disposed of as domestic waste.</p> <ul style="list-style-type: none"> <li>Use only designated channels for disposing the devices.</li> <li>Comply with all local and currently applicable laws and regulations.</li> <li>Dispose of empty batteries in designated collection points.</li> </ul>
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## 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.

## Directive on Radio Equipment

The device uses a harmonized frequency in Europe and also meets the requirements under the Directive on Radio Equipment (2014/ 53/EU, previously 1999/5/EG).

## Cyber security disclaimer

Siemens provides a portfolio of products, solutions, systems and services that includes security functions that support the secure operation of plants, systems, machines and networks. In the field of Building Technologies, this includes building automation and control, fire safety, security management as well as physical security systems.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art security concept. Siemens' portfolio only forms one element of such a concept.

You are responsible for preventing unauthorized access to your plants, systems, machines and networks. which should only be connected to an enterprise network or the Internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place. In addition, Siemens' guidance on appropriate security measures should be taken into account. For additional information, please contact your Siemens sales representative or visit

<https://www.siemens.com/global/de/home/unternehmen/themenfelder/zukunft-der-industrie/industrial-security.html>.

Siemens' portfolio undergoes continuous development to make it more secure. Siemens strongly recommends that updates are applied as soon as they are available and that the latest versions are used. Use of versions that are no longer supported, and failure to apply the latest updates may increase your exposure to cyber threats. Siemens strongly recommends complying with security advisories on the latest security threats, patches and other related measures, published, among others, under

<https://www.siemens.com/cert/de/cert-security-advisories.htm>

## Technical data

Power supply	
Battery type	2 x alkaline batteries LR6 (AA); 1.5 V.
Battery life	ca. 2 years

Radio communication	
Frequency range	2.4...2.4385 GHz
Transmitter power	<8 dBm
Area	≤ 30 m, depending on application and building
Protocol	ZigBee

Actuator		
Stroke		5 mm
Positioning force	Typical	90 N
Noise level		EN ISO 3741 < 30 dBA

Integrated temperature sensor	
Measuring range	0...50 °C

internal controller	
Type	PI
Adjustable temperature range	8...28 °C

Degree of protection	
Protection class	Class III per IEC 60730-1
Housing type	IP 20 <sup>1)</sup> per IEC 60529
Degree of pollution	Class 2 per IEC 60730

Environmental conditions		
Operation	Temperature	-1...54 °C
	Humidity (non-condensing)	5...85% r.h. ± 20 %
Transportation	Temperature	-25...70 °C
	Humidity	95 % r.H. ± 20 %
Storage	Temperature	-5...50 °C
	Humidity	5...95% r.h. ± 20 %
Permissible temperature of medium in the connected valve		1...70 °C

Directives and standards	
Product standard	IEC 60730-1
Electromagnetic compatibility	For residential, commercial, and industrial environments
EU conformity (CE)	A5W00090263A <sup>2)</sup>
UKCA	A5W00206069A
EAC compliance	Eurasian conformity for SSA911.02ZB

### Environmental compatibility

Environmental Declaration A5W00285172A <sup>2)</sup> contains data on environmental-compatible product design and assessment (RoHS compliance, compositions, packaging, environmental benefits and disposal).

### Material and dimensions

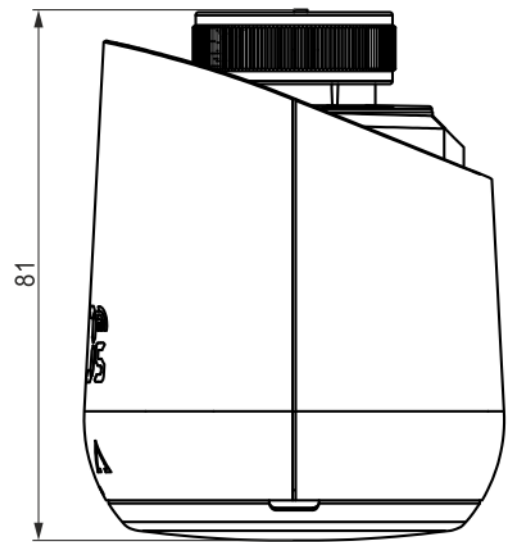
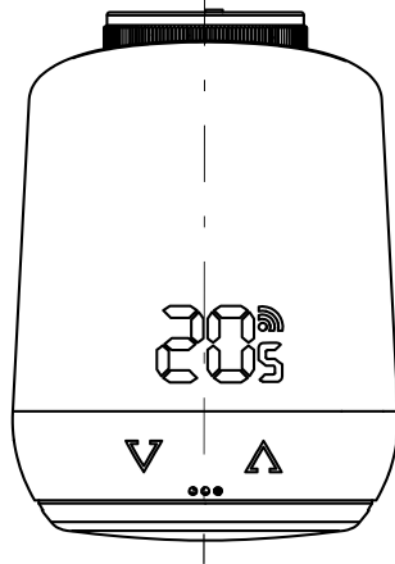
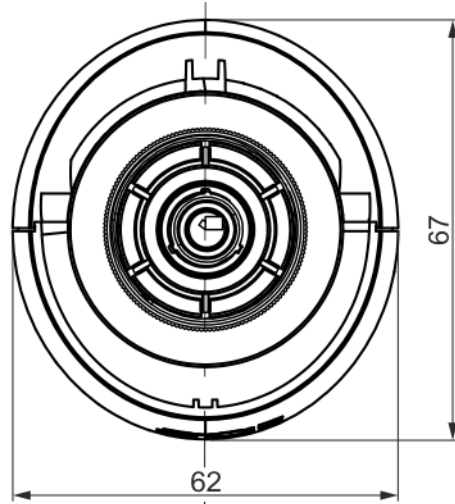
Display		LCD
Housing	Material	Plastic, light ASA+PC
	Color	White NCS S 052-G
Thread		M30x1,5
W x H x D		See Dimensions [ ▶ 15]
Weight		

1) Fully mounted

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



## Dimensions



Dimensions in mm

	kg [kg]
Including batteries	0.16



## Revision numbers

Type	Valid from rev. no.
SSA911.02ZB SS5181-A105	..01