

Wireless radiator valve actuator ZigBee, wireless

SSA911.02ZB



Wireless radiator valve actuator

- RF-controlled actuator communication based on ZigBee protocol (2.4 GHz, bidirectional)
- Connects and operates with Connected Home hub and repeater
- Battery-operated with 2 x 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 the radiator valve actuator or via the Siemens Connected Home App
- Touch elements and LED display operation

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. Wireless repeaters RCR110.2ZB extend the range of the network.

Basic functions

Functions	Description
Communication	The communication protocol is ZigBee. ZigBee is a low-power wireless mesh networking protocol for 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

Delivery

- Radiator valve 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

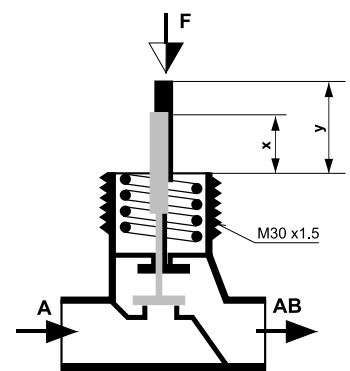
The SSA911.02ZB is suited for the following Siemens radiator valve types:

Type		kVS [m ³ /h]	\dot{V} [l/h]	PN	Data sheet
VDN1..., VEN1..	Radiator valves	0.63...1.41	-	10	N2105
VDN2..., VEN2..., VUN2..	Radiator valves	0.25...3.4	-	10	N2106
VD1..CLC..	Radiator valves	1.9...2.6	-	10	N2103
VD1..., VE1.. *	MCV MiniCombiValves	0.25...3.4	-	10	N2145
VD2..., VE2..., VU2.. *	Radiator valves	0.25...3.4	-	10	N2146
VPD /VPE/ VPU..	Radiator PICV	-	20...135	10	A6V13599366

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

\dot{V} = volumetric flow rate

* = No longer available

Force	90 N nominal	
Fully closed	$x \geq 9.0$ 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.

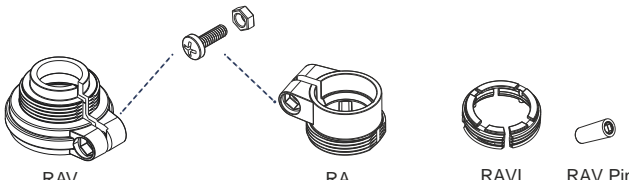
Accessories

Adapters for SSA911.02ZB for use with third-party manufacturers:

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.

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

<p>✓ Remove the plastic adapter connectors.</p> <ol style="list-style-type: none"> 1. Use supplied screw and nut. 2. Insert pin on valve stem. 	
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Product documentation


Title	Contents	Document ID
Connected Home Radiator Actuator ZigBee SSA911.02ZB	Data sheet: Product description	A6V13722083
Quick guide Connected Home Radiator Actuator ZigBee SSA911.01ZB	Quick guide for mounting, commissioning and operation SSA911.01ZB	A5W00293080A
Connected Home Hub GTW100ZB	Data sheet: Product description	A6V12640776
Quick guide Connected Home Hub GTW100ZB	Quick guide for mounting, commissioning and operation SSA911.01ZB	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 the environmental declarations, declarations of conformity, etc., can be downloaded from the following Internet address:

www.siemens.com/bt/download

Notes

⚠ CAUTION	
	<p>National safety regulations</p> <p>Failure to comply with national safety regulations may result in personal injury and property damage.</p> <ul style="list-style-type: none"> • Observe national provisions and comply with the appropriate safety regulations.

⚠ WARNING	
	<p>Risk of burns from hot surface</p> <p>The screw nut that fastens the actuator to the radiator valve can become hot. Risk of burns from touching the screw nut.</p> <ul style="list-style-type: none"> • Switch off the radiator and allow it to cool down.

⚠ WARNING



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.

⚠ WARNING



Leakage of electrolyte

Severe burns

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

Observe the following:

- Correct polarity.
- Use new batteries and check 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.

NOTICE! Switching off the device or loss of communication to the radiator valve actuator results in an “undefined state” and quickly drain the batteries. Do not switch off the Siemens Connected Home Hub and use a repeater for adequate coverage.

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. Make sure that the display and the touch elements on the radiator valve drive are visible and accessible.

⚠ WARNING

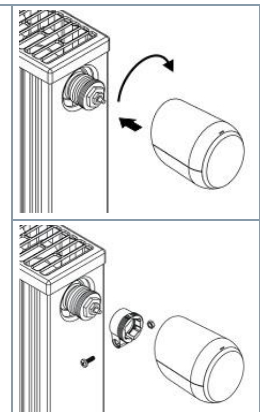


Falling objects

Overhead installation may result in injury from falling objects.

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

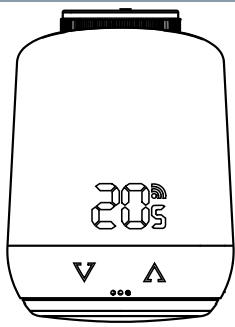
- ◆ Turn the screw nut clockwise by hand onto the valve or actuator
⇒ The radiator valve drive is installed.










Commissioning





- 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 RCR110.02ZB (see quick guide A6V11562443).
- Install and commission the Connected Home radiator valve actuator SSA911.02ZB (see quick guide A5W00293080A).



Operation





The interface consists of an LED display and two touch elements.		
▼	Lower temperature	
▲	Increase temperature	

Touch elements		
▼	Confirm 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 LED display indicates — 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 until the highest temperature is reached. The LED display is ON if the set temperature is higher than 28 °C. Boost mode is activated for 5 minutes.
▼ and ▲	Same time as display is shut off press and hold together for 3 s	Lock or unlock buttons
	If Ad displays, press together and hold for 3 s	Starts adaptation

LED indication	
	<p>Informs about wireless connection and pairing.</p> <p>On: Connected to gateway.</p> <p>Off: Not connected to gateway.</p>
	<p>Pairing mode is active.</p> <p>NOTICE! Do not operate the actuators in pairing mode for longer periods; this quickly drains the batteries. If pairing fails several times, reset a radiator valve actuator to the factory settings and retry pairing per the documentation.</p>
	<p>Remove mode (exclusion) active.</p>
	<p>Start adaptation.</p>
	<p>Animation: On during adaptation.</p>
	<p>Animation: On if button lock is enabled/disabled.</p>
	<p>On if battery capacity drops below 15%.</p>

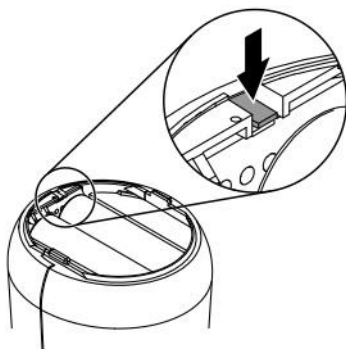
Modes and functions	
OFF mode	<p>Press touch element  and hold until the LED displays -- and the SSA911.02ZB switches off.</p>
Heating mode	<p>The two touch elements  and  set the temperature between 8 and 28°C.</p> <p>If the device is not in heating mode, use the touch elements to change the temperature between 8 and 28 °C degrees.</p>
Boost mode	<p>In boost mode, heat demand is increased by setting a higher setpoint temperature.</p> <p>Press and hold touch element  if the device is not in boost mode until the LED displays ON.</p> <p>Boost mode switches off automatically after 5 minutes.</p>
Window open mode	<p>A sudden drop in temperature activates the window open mode.</p> <p>SSA911.02ZB switches to OFF mode for 10 minutes. Window open mode is automatically terminated after 10 minutes; the previously active mode is restored.</p>
Anti-lime scale function	<p>The anti-scale function is performed weekly as of commissioning. The radiator valve fully opens and closes one time if the SSA911.02ZB receives an anti-scale command. This prevents valve seizing. Control returns to the previous valve position after descaling.</p>
Calibration	<p>The actuator calibrates as part of initial commissioning. The calibration function also triggers if the device detects a difference between the closing value and the previously saved adjustment value. The radiator valve fully opens and closes one time.</p>

An error code displays on the LED display in the event of a communication error with Connected Home Hub. The error codes can be deleted by pressing the  and  touch elements.

Error codes		
	Device is not connected.	<ul style="list-style-type: none"> • Make connection.
	Pairing failed	<ul style="list-style-type: none"> • Device is not in pairing mode. • Device is out of range. <p>Do not leave the actuator in Er mode over longer periods; this quickly empty the batteries. If error cannot be solved immediately, remove batteries and re-insert only when starting the pairing process again.</p>
	No valve detected. Closing point not recognized.	<ul style="list-style-type: none"> • Is the valve correctly mounted to the radiator. • Use the correct adapter.
	Valve cannot move.	<ul style="list-style-type: none"> • Check that the valve stem is not stuck.

Reset to factory settings

1. Remove the device from the Siemens Connected Home App.
2. Press the reset button in the battery compartment.



- ⇒ The meter displays on the LED and counts from **5 to 10**.
- 3. Release the reset button after the number **10** no longer displays.
 - ⇒ The meter displays on the LED and counts from 99 down.
 - ⇒ The LED display is **C1**.
- ⇒ The device is reset to factory settings.

Remove from network

1. Remove the device from the Siemens Connected Home App.
2. Press the reset button in the battery compartment.
 - ⇒ The LED display indicates the setpoint temperature.
 - ⇒ The LED is **LE**.
3. Release the reset button when the LED display indicates **LE**.
 - ⇒ The meter displays on the LED display and counts down **99**.
- ⇒ The radiator valve actuator is ready to connect to the gateway.
- ⇒ Inclusion starts automatically.

Maintenance

The radiator valve drive is maintenance-free.

Disposal



The device is considered an electronic device for disposal in accordance with European Directive and may not be disposed of as domestic waste.

- Use only designated channels for disposing the devices.
- Comply with all local and currently applicable laws and regulations.
- Dispose of empty batteries at designated collection points.

Warranty

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.

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. Additionally, 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/en/products/automation/topic-areas/industrial-cybersecurity.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 to comply with security advisories on the latest security threats, patches and other related measures, published, among others, here:

<https://www.siemens.com/cert/> => 'Siemens Security Advisories'

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 use and building
Protocol	ZigBee

Radiator valve actuator	
Stroke	5 millimeters
Positioning force	Typical, 90 N
Noise level	EN ISO 3741 < 35 dB(A)

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 ¹⁾ per IEC 60529
Degree of pollution	Class 2 per IEC 60730

Environmental conditions		
Operation	Temperature	0...55 °C
	Humidity	< 95 %
Transportation	Temperature	-45...70 °C
	Humidity	< 95 %
Storage	Temperature	-25...55 °C
	Humidity	< 95 %

Environmental conditions	
Permissible temperature of medium in the connected valve	1...70 °C

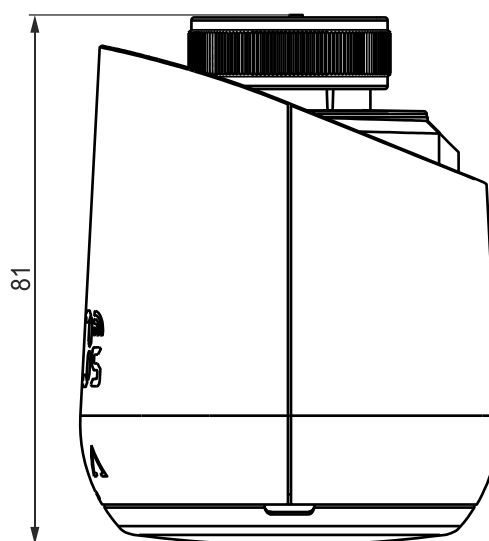
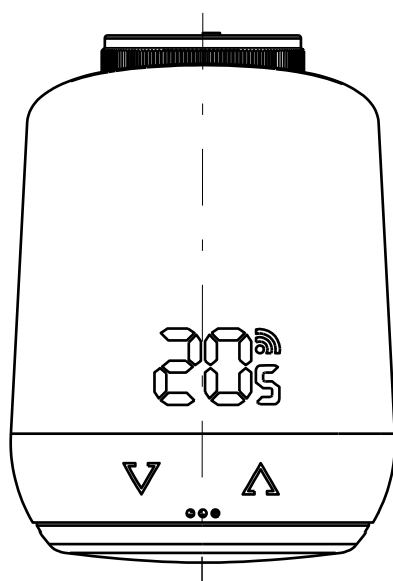
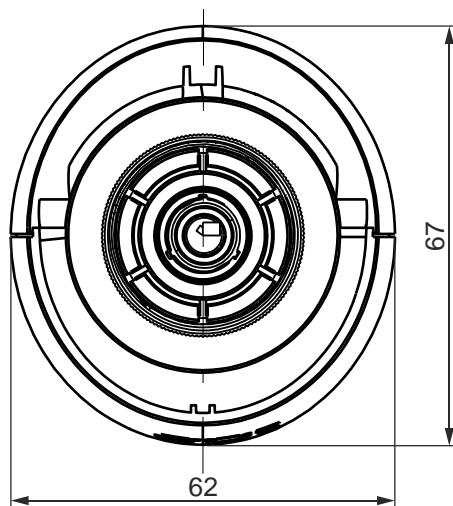
Directives and standards	
Product standard	IEC 60730-1
Electromagnetic compatibility	For residential, commercial, and industrial environments
EU conformity (CE)	A5W00090263A ²⁾
UKCA	A5W00206069A
EAC Conformity	Eurasian conformity for SSA911.02ZB

Environmental compatibility	
The product environmental declaration A5W00285172A ²⁾ contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).	

Material and dimensions		
Display	LED	
Housing	Material	Plastic, light ASA+PC
	Color	White NCS S 052-G
Thread	M30x1.5	
W x H x D	See Dimensions [▶ 12]	
Weight		

¹⁾	Fully mounted
²⁾	Documents available at http://www.siemens.com/bt/download

Dimensions



Weight	
kg	
without batteries	0.16

Revision numbers

Type	Valid from rev. no.
SSA911.02ZB S55181-A105	..01

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